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Radiological Society of Pakistan
ABSTRACTS

INVITED LECTURES (I)

I-1 (Inaugural Lecture)

Radiology for clinical care in public hospitals: Challenges and opportunities

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Radiology plays a crucial role in the present-day clinical management. There is a wide gap between the public and private sector health care practices, which needs an understanding of contextualization. Public sector hospitals are owned, funded and managed through State departments of Health; private hospitals are those owned by Societies, Organizations, Trusts or individuals etc. Both of these complement each other in health care service delivery in any system. The main projected comparisons relate to the diversity, extent and the cost of this service. Radiology services are no exception. The main challenges for the Radiology services in a public hospital pertain to an extra ordinary high workload, financial and human capital restrictions, and prolonged unavoidable processes for improving and diversifying advanced services, dogged by the fear of procurement rules and accountability. The same opens the avenues for opportunities for a great clinical experience for the Radiology practitioners and trainees, the satisfaction of serving the general public, and enormous research data within due ethical limits.

I-2

Post-treatment imaging in head and neck cancers

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Head and neck tumors represent 3% of all malignant tumors. CT, MRI and PET imaging is effective for monitoring head and neck cancers. However, variable CT and MRI features in the neck can make image interpretation difficult. This is particularly evident in the post-treatment head and neck region, where alteration of expected anatomy makes diagnosis of recurrence or differentiating between recurrence and post-treatment change particularly challenging. This presentation will aim to describe the various imaging features of the post treatment changes in the head and neck cancers on CT, MRI and PET imaging.

I-3

Multimodality imaging of dementia: Integrated anatomical, functional, and molecular imaging

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Dementia disorders are a diverse & clinically devastating group of diseases. The high-resolution MRI with specialized protocols & clinically relevant reports are an integral part of dementia imaging. An integrated approach with the clinical presentation, early diagnosis can be achieved, giving patients & families an opportunity to confront the disease & start earlier management (multidisciplinary approach). The role of f MRI and DTI is still a work in progress and may have promising results in future.

I-4

Thyroid imaging TI-RADS

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A lexicon developed by ACR for assessing thyroid nodules on ultrasound to recommend guidelines for FNAC or ultrasound follow up of suspicious nodules and in identifying benign nodules that need no further work up.

I-5

Redefining diagnostic boundaries- MDT challenges in uroradiology

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We will explore the evolving landscape of diagnostic boundaries in uroradiology, focusing on the challenges faced by Multidisciplinary Teams (MDTs). As technological advancements redefine traditional norms, MDTs encounter complexities in interpreting and integrating diverse diagnostic modalities. The talk delves into the impact of these challenges on diagnostic accuracy and patient outcomes, shedding light on the crucial role of collaborative approaches in navigating the dynamic field of uroradiology.

I-6

Pre-transplant imaging evaluation of donor Kidney

Farzana Rahim

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Renal transplantation is one of the most common transplant procedures undertaken worldwide. Both donors and recipients undergo preoperative workup to ensure a successful outcome for renal transplantation as it determine suitability of the donor kidney for transplantation, helps in preoperative surgical planning, minimize the likelihood for unexpected intraoperative vascular complications from unexpected anatomic variants, ensure donors safety and helps identify the less normal kidney.

CTA is most commonly used being accurate, safe, cost-effective technique, shorter scan periods and more wide availability, CTA protocol in renal donor evaluation is performed as a 4-phase CT image acquisition protocol (unenhanced CT abdomen, arterial, nephrographic and excretory phase).

Arterial variant anatomy include supernumerary renal arteries (accessory / aberrant) and prehilum /early branching, while renal vein variations include circumaortic left renal vein, retroaortic left renal vein, duplicated IVC, super numerary veins, delayed venous confluence and anomalies associated with the lumbar, gonadal, adrenal, or retroperitoneal veins. Pelvicalyceal anomalies including complete or partial ureteral duplication and ureteropelvic junction obstruction.

Renal parenchymal and urothelial evaluation for congenital fusion anomalies, complex or solid renal lesions which precludes an individual from donation. Incidental findings such as tiny nonenhancing lesions, cysts, non-obstructing 3-mm-or-less stones, most urothelial congenital anomalies, and cortical scars may be considered in kidney selection because the less normal appearing kidney is selected for harvest, thus the donor retains the more normal kidney.

I-7**CT guided lung biopsy****Aamer Chughtai***Cleveland Clinic, USA.**E-mail: chughta@cef.org*

Percutaneous needle core biopsy is a minimally invasive procedure that is an indispensable tool in the diagnosis of thoracic lesions. The procedure is very safe when performed by appropriately trained and experienced physicians. There are several known complications including pneumothorax, hemorrhage, air embolism, and tumor seeding. Careful attention to biopsy planning and technique and postprocedural care help to prevent or minimize most potential complications. In this presentation, the risk factors for the development of these complications and important aspects of prevention and management of these complications will be discussed. I also describe a low dose CT fluoroscopy technique utilizing optimized scan volume which can effectively reduce the intraoperative radiation dose to the patient as well as the operator with reduced operation time and intraoperative complications compared with conventional incremental technique without compromising the image quality and yield.

I-8**Understanding and applications of liver specific MR contrast****Muhammad Azeemuddin***Department of Radiology, Aga Khan University Hospital (AKUH), Karachi, Pakistan.**Email: muhammad.azeemuddin@aku.edu*

Liver specific MRI contrast agents are specialized contrast agents used to improve diagnosis in MRI. They are divided into three categories: gadolinium-based agents, manganese-based agents and super paramagnetic iron oxide particles.

Hepatobiliary specific gadolinium agents include two agents: gadobenatatedimeglumine (Gd-BOPTA) and gadoxetate disodium (Gd-EOB-DTPA). This talk will primarily focus on gadoxetate disodium (Gd-EOB-DTPA) as currently this is the only liver specific MR contrast agent available in Pakistan. This group of liver specific contrast agents initially act like non-specific extracellular gadolinium chelates post bolus injection and show three primary phases of vascular and tissue enhancement (arterial, blood pool and extracellular phases). However, in the delayed (hepatobiliary) phase, they are taken up by the liver as their excretion is not only through the renal but the hepatic route as well.

During the hepatobiliary phase, they selectively increase the liver signal intensity and aid in the detection of small tumors. Additionally, the biliary excretion enables biliary ductal mapping (post-contrast MRCP/ functional MRCP) using 3D T1 weighted fat-saturated GRE images.

The liver specific MRI contrast agents have their application in improving lesion detection, characterizing lesions as hepatocellular or non-hepatocellular, and to specifically characterize some hepatocellular lesions, notably focal nodular hyperplasia. Biliary excretion of these agents can be used to evaluate the anatomic structure and function of the biliary tree.

I-9**Not every unusual focus in liver is tumor****Ahsan Ali***Department of Radiology, Sindh Institute of Urology and Transplantation (SIUT), Karachi, Pakistan.**Email: ahsan.rad@hotmail.com*

A wide spectrum of benign, malignant, infectious, and inflammatory processes can affect the liver via peritoneal, hematogenous, biliary, and perihepatic ligamentous routes.

Additionally, pseudolesions may be seen in the subcapsular region, such as focal steatosis or focal fatty-sparing, and lesions secondary to altered hepatic hemodynamics (arteriportal shunt, portal vein obstruction, hepatic vein or IVC obstruction, hepatic infarct, intrahepatic shunts, etc).

The goal of this review is to familiarize radiologists with the most common pitfalls of liver imaging and to provide some diagnostic clues to confidently interpret computed tomographic (CT) or magnetic resonance (MR) imaging results.

I-10**Pancreato-biliary variant anatomy and its impact on biliary and pancreatic pathologies - An MRCP based assessment****Saerah Iffat Zafar***Department of Radiology, Armed Forces Institute of Radiology and Imaging (AFIRI), Rawalpindi, Pakistan.**Email: saerah_syk07@yahoo.com*

Biliary channels including cystic duct demonstrate different anatomical variants, which have been classified in a variety of manners in the international literature. While their importance in presurgical planning in potential liver donors is well documented, association of these anomalies with pathologies of biliary tract has also been investigated. Similarly, impact of pancreatic ductal anatomical with pancreato-biliary pathologies has been researched to determine if different anomalies have a causative role to play. This talk aims at determining the impact, if any, of pancreato-biliary ductal variant anatomy in relation to pathological conditions of hepatobiliary or pancreatic origin, as assessed on magnetic resonance cholangio-pancreatography (MRCP).

I-11**¹⁸F-FDG interim PET in lymphoma****Muhammad Numair Younis***Department of Radiology, Institute of Nuclear Medicine and Oncology (INMOL), Lahore, Pakistan.**Email: dr.numair@gmail.com*

In the era of personalized medicine, early and accurate evaluation of response to therapy in lymphoma patients is essential. This ensures optimization of treatment and the management of lymphoma. Response evaluation criteria in solid tumors (RECIST) have been used until recently. However, with the wider use of ¹⁸F-FDG PET in imaging of lymphoma and availability of new cytotoxic treatments the metabolic criteria have been found to show higher accuracy as compare to anatomic criteria. Over last few years, metabolic imaging has gained more space and importance in the response evaluation of malignancies by introducing several PET based criteria that include Deauville criteria, Lugano, LYRIC, and RECIL criteria.

The current review includes visual and quantitative response assessment methods for lymphoma that are in clinical practice. The objective is to explain the criteria to the residents and young radiologists / nuclear physicians with scenario-based pictorial examples that will enable them to apply it in their daily practice.

The review addresses the often-faced problematic issue in interim PET study related to interpretation of Deauville score 3, partial response against mild progression, mixed response term and metabolic response against anatomical response. The definition and explanation of terms such as standardized uptake values (SUV), SUV_{max}, SUV_{mean}, SUV_{peak}, metabolic tumor volume and total lesion glycolysis have also been included in this review.

I-12**Imaging hip pain: Resolving diagnostic dilemmas.****Kashif Siddiqui***Department of Radiology, Shaukat Khanum Memorial Cancer Hospital, Lahore, Pakistan.**Email: kashifsiddiqui@skm.org.pk*

This talk explores advanced imaging techniques in diagnosing hip pain, addressing diagnostic challenges faced by clinicians. By delving into cutting-edge imaging modalities, the paper aims to provide insights into resolving complexities associated with identifying the underlying causes of hip pain, ultimately contributing to more accurate diagnoses and improved patient care.

I-13**Integrating lung ultrasound into standard care protocols to transform paediatric ICU practices****Iqbal Dogar***Department of Radiology, Allied Teaching Hospital, Gujranwala Medical College, Gujranwala, Pakistan.**Email: drihussain51@gmail.com*

This talk explores the transformative impact of integrating lung ultrasound into standard care protocols within pediatric ICUs. By enhancing diagnostic capabilities and real-time monitoring, this integration aims to improve patient outcomes, streamline decision-making, and enhance overall efficiency in pediatric critical care settings. The study evaluates the benefits, challenges, and potential advancements associated with incorporating lung ultrasound as a standard practice in pediatric ICU management.

I-14**Optimization of medical exposure especially for pediatric imaging****Muhammad Bilal***Pakistan Nuclear Regulatory Authority, Islamabad, Pakistan.**Email: mbilal.pnra@gmail.com*

Millions of radiological imaging procedures are being carried out each year for diagnostic and therapeutic purpose and number of these procedures are increasing day by day. Therefore, it is pertinent to optimize patient doses received as a result of these procedures.

Naturally, at higher doses, good quality images are obtained but at the cost of higher patient exposure. On the other hand, at very low doses, image quality decreases and patient will have to repeat that procedure resulting in an undue absorbed dose. That situation worsens in the case of pediatric patients. Therefore, an optimum level needs to be maintained between these two extremes. Diagnostic reference levels (DRLs) are important tools for optimizing patient exposure. PNRA has established DRLs to guide the operators of diagnostic imaging facilities including general X-ray, dental, mammography, angiography, fluoroscopy, CT scanners and nuclear medicine centers. Each imaging facility is required to continuously monitor the exposure of patient in order to keep the patient's medical exposure below the DRLs.

This paper provides the guidance about optimization of doses and DRLs for radiographers and the radiologists. It is the responsibility of the management operating those facilities to give optimized and justified radiation exposures to patients in order to protect the basic rights of patients and their quality of life.

I-15**Osseous lesions in pediatric patients: Approach to MSK imaging****Rafeah Khan***Department of Radiology, The Indus Hospital and Health Network, Pakistan.**Email: rafeah@arclaws.com*

Imaging is an extremely valuable diagnostic tool for musculoskeletal diseases in the pediatric population. The challenge arises when it comes to imaging protocols in children as each child is different in regards to level of cooperation and ability to tolerate sedation. Unlike adults children have an increased sensitivity to radiation. The main goal is to reduce the radiation dose and

increase longevity of life. Musculoskeletal pathologies in the pediatric population have a wide range from congenital anomalies to traumatic injuries to infections to aggressive malignancies. A systematic approach to achieve a diagnosis is important. Each modality must be evaluated individually and then correlated with the previous imaging. Follow up imaging also holds a major role in the management of bone and soft tissue lesions. It is imperative that each department develops specific pediatric protocols for imaging of musculoskeletal lesions in order to give the best care to each child.

I-16**Caring about the nation builders; Role of imaging in female genital tract malignancies****Kiran Fatima Farooq***Department of Radiology, Foundation University School of Health Sciences, Fauji Foundation Hospital, Rawalpindi, Pakistan.**Email: drkiranfarooq@gmail.com*

Medical imaging, especially magnetic resonance imaging (MRI), has evolved significantly over the years, playing a pivotal role in the diagnosis and management of various diseases. In the domain of gynaecological oncology, MRI has emerged as a powerful tool for evaluating uterine and cervical malignancies. It has become an indispensable modality in accurate localization of tumour origin, local staging, parametrial invasion and detection of involved pelvic lymph nodes. This information is crucial for planning surgical interventions and even determining the possibility of fertility-preserving procedures in selected cases. A tailored MRI approach ensures that the imaging study is optimized to depict the relevant details, facilitating precise staging and subsequent treatment planning. The purpose of this review, therefore, is to demonstrate the importance of planning and tailor making MRI studies in order to enhance our diagnostic accuracy.

I-17**Unveiling the challenges: A case based review of post-partum complications detected on CT scan****Sadaf Nasir***Department of Radiology, Liaquat National Hospital, Karachi, Pakistan.**Email: sadaf.hoseyn@gmail.com*

This review talk delves into the spectrum of postpartum complications as visualized through CT scan, with a particular focus on the key findings for accurate diagnosis. The presentation is case based and through real life cases we navigate the intricate spectrum of post partum conditions, leveraging CT imaging to solve complexities and enhance clinical understanding.

I-18**Mammographic evaluation of breast calcifications****Rafia Shahzad***Department of Radiology, INMOL Hospital, Lahore, Pakistan.**Email: drraftashahzad@gmail.com*

Calcifications are frequently encountered on mammograms and may represent both benign and malignant conditions. Calcifications can also be the first sign of non-palpable breast malignancy. Calcifications seen on mammograms are mostly benign showing typical benign features, and those which are not typically benign can be evaluated by their morphology and distribution. The recognition of breast calcifications often requires additional imaging evaluation.

Spot compression magnification view further aids in characterization of morphology of calcifications. The purpose of this review is to demonstrate a logical and organized way to approach mammographic calcifications and to reinforce the importance of evaluation of breast calcifications morphology and distribution as well as assessment of any interval change. So that delay in appropriate patient's management and unnecessary interventions can be avoided.

INTERACTIVE SESSIONS (IS)

IS-1

Small Patients, Big Lessons: Pediatric neuroradiology

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The field of pediatric neuroradiology is a delicate one where every scan has a story to tell. "Small Patients, Big Lessons" is an interactive session that showcases a carefully selected set of pediatric cases that initially challenged me but ultimately improved my diagnostic abilities. These cases highlight the important lessons that can be learned from complex pathologies and the intricate anatomy of our youngest patients.

This interactive session is tailored for adult neuroradiologists, general radiologists, pediatric radiologists and pediatric neurology specialists, with a keen interest in pediatric neuroradiology, presenting a selection of pediatric cases that have been pivotal in refining diagnostic methodologies.

During this presentation, we will have an interactive discussion and explore a range of experiences in pediatric imaging. We will navigate the unique challenges presented by pediatric cases, transforming them into powerful lessons that foster expertise. I will share examples where initial misinterpretations were corrected through reflective practices. Our focus will be on the importance of critical thinking in achieving diagnostic clarity.

IS-2

Imaging of oral cancers

Najamuddin

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We will explore the evolving landscape of oral cancer imaging in this interactive talk. From advanced imaging modalities to artificial intelligence applications, we'll delve into the latest breakthroughs. We will assess the crucial role of imaging in early detection, accurate diagnosis, and personalized treatment planning for oral cancer. We will discuss challenges, emerging technologies, and the potential impact on patient outcomes.

IS-3

Exploring genitourinary landscape through imaging

Saleha Shahzad

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In this dedicated interactive session about genitourinary system, we would engage not only in specific imaging techniques for the kidneys, ureters, bladder, and reproductive organs, but would also indulge in analysing and diagnosing spectrum of diseases.

This session would enhance the capabilities of trainees in interpretation of difficult cases in a more systematic approach.

IS-4

Tips and Tricks of cardiac CT

Shahjehan Alam

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To briefly discuss the CTA techniques.

To describe and discuss in detail the imaging requirements in different case scenarios of acute chest pain.

This interactive session focuses on display of different CT cardiovascular cases covering the on-console tips and decision making in planning the required CT technique.

IS-5

Cardiac anomaly CT

Ummarah Umer Siddiqui

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To briefly discuss the CTA techniques.

To describe and discuss in detail the imaging findings of TOF, DORV and situs anomalies.

This interactive session focuses on display of different CT Cardiac cases of pediatric age group covering the reporting tips required for pre op planning and associated abnormalities.

IS-6

Deciphering the unusual-a gallery of challenging gastrointestinal cases

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It is a case-based interactive discussion of unusual and rare gastrointestinal pathologies. These will include cases from hepatobiliary, gastrointestinal tract and extraperitoneal pelvic space. Emphasis will be placed on the role of various modalities in order to approach these complex cases. Key findings on different modalities that helped clinch the diagnosis will be highlighted.

IS-7

Foot & ankle imaging

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Foot and ankle pathologies are common, affecting patients of all ages. These include trauma, which can affect soft tissues as well as bones, degenerative conditions and various lumps. In this interactive session, we will discuss a systematic approach to diagnose these conditions on various imaging modalities. We will also discuss how to interpret images alongside clinical information to narrow the differential diagnosis, which will aid clinicians in managing their patients.

IS-8**Shoulder imaging****Syed Babar Ajaz***Imperial Healthcare NHS Trust, London.**Email: babarajaz@yahoo.co.uk*

This is an interactive session on common shoulder pathologies and their imaging features. The session is case base interactive review highlighting the key diagnostic features of various rotator cuff pathologies, joint and labro-ligamentous abnormalities and the imaging modalities of choice for their diagnosis.

Learning Points

- Rotator cuff tears are the common causes of shoulder pain.
- Role of ultrasound and MR in assessing the rotator cuff tears and impingement.
- Assessment of shoulder instability and labral abnormalities
- Imaging of adhesive capsulitis and joint related infection
- Assessment of muscles around the shoulder

IS-9**Breast cancer imaging****Shaista Afzal Saeed***Department of Radiology, Aga Khan University Hospital (AKUH), Karachi, Pakistan.**Email: shaista.afzal@aku.edu*

Breast cancer (BC) has a high incidence in women worldwide. BC survival is directly proportional to early diagnosis and prompt treatment. In this presentation, we present interesting cases from breast imaging i.e., from morphological imaging like mammography, tomosynthesis, and ultrasound. Cases from functional imaging like MRI and contrast-enhanced mammography will also be shared. The utilization of the breast imaging-reporting and data system (BI-RADS) for the categorization of lesions, the concordance / discordance of histopathological lesions, and its impact on surgical management will also be discussed.

ORAL PRESENTATIONS (O)**O-1****Utility of Fiber Density index in glioblastoma for tract involvement on synaptive DTI****Sibgha Khan, Fatima Mubarak***Department of Radiology, Aga Khan University Hospital (AKUH), Karachi, Pakistan.**Email: sibgha.khan@aku.edu*

OBJECTIVE: To determine if Fiber Density index (FDi) can be used as a reliable measure for tract infiltration by tumor on synaptive DTI. This will help in more accurate assessment of tracts on pre operative DTIs for infiltration and displacement. The study also aims to establish correlation between FDI and Fractional Anisotropy (FA) values.

MATERIALS AND METHODS: We retrospectively reviewed all case of Synaptive DTI performed at our center from Jan 22 – Sept 23 for cases of gliomas. A total of 48 cases was found. Out of these 48 cases, 15 cases were of glioblastoma which were included in the study. Rest of the cases were other types of gliomas including Oligodendroglioma, Astrocytoma and Gliosarcoma which were excluded. All the cases were performed on a 3 Tesla scanner. FDI was calculated by drawing region of interest in a peritumoral tract. Another ROI was drawn in the same tract on contralateral (normal) side.

RESULTS: It was found that FDI in the ROI drawn in the peritumoral tracts was significantly lower than FDI in the ROI drawn in contralateral tract. It also showed to serve as a quantitative measure of analysis of tract infiltration and correlated with FA values.

CONCLUSION: The study concludes that Fiber Density index can serve as a quantitative measure of tract infiltration by tumor and correlates with FA values. This study is conducted with a limited data set. Further studies on a larger scale with bigger data including other types of tumors as well will further strengthen the role of FDI.

O-2**Assessing carotid intima-media thickness in hemodialysis patients with chronic kidney disease****Noor ul Saba, Ashraf Kasi***Department of Radiology, Bolan Medical Complex Hospital, Quetta, Pakistan.**Email: noorulsaba92@gmail.com*

High-resolution carotid ultrasonography plays a pivotal role in the examination of the vascular system. Its application to the assessment of the carotid artery is indispensable, not only for scrutinizing structural changes but also for gauging the scope of atherosclerosis in this artery, which serves as a reliable indicator of the overall arterial damage severity. Specifically, the measurement of intima-media thickness (IMT), especially in the common carotid artery, serves as a robust predictor of cardiovascular events within the general population.

OBJECTIVES: To assess and quantify the average carotid intima-media thickness among individuals with chronic kidney disease who are undergoing hemodialysis.

METHOD: In a cross-sectional study conducted between November 2022 and May 2023 at the department of Diagnostic Radiology, SPH, Quetta, we enrolled 97 patients aged 18 to 65, of both genders, who had a documented history of chronic kidney disease and were undergoing hemodialysis. We excluded individuals displaying signs of cardiovascular congestion, intercurrent infections, or those hospitalized for other illnesses. Additionally, participants with a history of neck trauma, previously documented carotid artery wall thickness increase or atherosclerotic plaques, septicemic acute renal failure, malignancy, hypothyroidism, or inflammatory disorders were excluded. Data analysis was performed using SPSS version 26. Categorical variables such as gender, smoking, diabetes, hypertension, dyslipidemia, and family history of cardiovascular disease were presented as frequencies and percentages.

RESULTS: In this study, the age range of participants ranged from 18 to 65 years, with a calculated mean age of 43.29 years, and a standard deviation of 9.49 years. A majority of the enrolled patients, specifically 64 individuals (approximately 65.98% of the total sample), fell within the age bracket of 41 to 65 years. Among the 97 patients included in the study, 57 were male, while the remaining 40 were female. The mean carotid intima-media thickness (IMT) among the chronic kidney disease patients undergoing hemodialysis, as determined in this study, was found to be 0.97 mm, with a standard deviation of 0.32 mm.

CONCLUSION: The findings of this study suggest that evaluating intima-media thickness can serve as a valuable tool for predicting the risk of cardiovascular disease (CVD). This predictive capability can be instrumental in enabling early intervention and preventive measures to reduce the incidence of cardiovascular disease-related health issues.

O-3

Can apparent diffusion coefficient predict the grade, genotype, or proliferation index of oligodendrogliomas

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Genetic subsets of oligodendrogliomas (OD) have distinct chromosomal and biophysical profiles. Pretherapeutic tumor grade and genotype analysis is a challenging aspect of management, with 1p/19q codeletion status and grade of oligodendroglioma among the most important considerations for clinical decision making. The study aimed to determine the correlation of ADC with Ki-67, grade, and 1p/19q co-deletion in oligodendroglioma at a tertiary care hospital within a low-middle income country.

MATERIALS, METHODS, AND PROCEDURES: Seventy-three patients with histopathological diagnosis of oligodendroglioma were selected, and their preoperative 1.5T magnetic resonance imaging (MRI) scans were reviewed through parameters including diffusion weighted image, susceptibility-weighted imaging, and apparent diffusion coefficient (ADC). These images were correlated with patient's histopathological and chromosomal testing. Tumor border irregularity, homogeneity, contrast enhancement, and other MRI characteristics were also studied. For analysis, descriptive statistics were generated, and normality was evaluated for ADC value, age, and Ki-67 tumor proliferation index.

RESULTS: Ki-67 tumor proliferation index was high in 33 tumors. It was found to be statistically significant ($P = 0.048$) with respect to ADC, showing that 1p/19q co-deleted tumors have a difference in their Ki-67 index. Ki-67 also showed a significant relationship ($P < 0.05$) with grade of OD. However, there was no statistically significant relationship between 1p/19q chromosomal co-deletion and ADC. Linear regression was carried out as the dataset was continuous. Univariate analysis showed no significant result with all P values above 0.10.

CONCLUSION: Mean ADC is a viable tool to predict Ki-67 and assist prognostic clinical decisions. However, mean ADC alone cannot predict 1p/19q codeletion and tumor grades in OD. Further supplementation with other radiological modalities may provide greater yield and positive results.

O-4

In the limelight: CT signs illuminating retroperitoneal tumors

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OBJECTIVE: Retroperitoneal tumors, located deep within the abdominal cavity, present diagnostic challenges due to their elusive nature and nonspecific symptoms. Radiological imaging, especially computed tomography (CT)

scans, is pivotal for early detection. This article investigates the diagnostic accuracy of three distinct radiological signs – the Beak sign, Embedded Organ sign, and Phantom Organ sign – on computed tomography (CT) scans in the identification of retroperitoneal tumors arising from solid organs.

METHODS: A retrospective study was conducted at a tertiary care teaching hospital, involving a cohort of patients who had undergone abdominal CT scans for suspected retroperitoneal tumors. The Beak Sign, Embedded Organ Sign, and Phantom Organ Sign were defined and evaluated. The histopathology of the masses was taken as the reference standard. Statistical tests, including sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), and Pearson's chi square analysis were employed to assess the diagnostic accuracy of these signs.

RESULTS: The study found that the Beak sign, Embedded Organ sign, and Phantom Organ sign exhibited diagnostic accuracy based on the following statistical measures: Beak sign: Sensitivity: 60% & Specificity: 96.55%. Embedded Organ sign: Sensitivity: 100% & Specificity: 89.65%. Phantom Organ sign: Sensitivity: 42.85% & Specificity: 91.8%. These results reflect the diagnostic accuracy of these signs in identifying retroperitoneal tumors.

CONCLUSION: While the Beak sign, Embedded Organ sign, and Phantom Organ sign show promise in diagnosing retroperitoneal tumors via CT scans, they are not stand alone indicators. Their utility lies in guiding clinical decision-making and surgical planning. Further research and clinical validation are needed to enhance the utilization of these signs for retroperitoneal tumor diagnosis.

O-5

Deciphering the association between type of renal stones and hepatic fatty infiltration; a retrospective single institute study

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AIMS/OBJECTIVE: In this study we aimed to establish a relationship / association between types of renal stone (uric acid and non-uric acid) with hepatic status (fatty and non-fatty).

MATERIALS AND METHODS: 565 patients with renal stones on NCCT KUB between January 2021 to July 2023 were retrospectively identified. The attenuation ratio value and location on the graph plot of the biggest calculus per scan were utilized to distinguish between uric acid and non-uric acid calculi. Fatty liver status was seen by calculating the difference between spleen and hepatic parenchymal HU.

STATISTICS: Chi-square test was applied using spss 26 version. Pearson chi-square came out to be 0.764 representing no association between types of renal stones with fatty infiltration.

RESULTS: Amongst total of 565 patients, males were 414 and females were 151. In males, 357 (63.2%) had non uric stones and 57 (10.1%) had uric acid stones. In females, 129 (22.8%) had non uric stones and 22 (3.9%) had uric acid stones. In males, 361 (63.9%) had non fatty liver and 53 (9.4%) had fatty liver. In females, 119 (21.1%) had non fatty liver and 32 (5.7%) had fatty liver. Amongst all irrespective of age and gender, 412 (72.9%) were non fatty and non-uric acid. 68 (12%) were non fatty and uric acid. 74 (13.1%) were fatty and non-uric acid. 11 (1.9%) were fatty and non-uric acid. So if we see association of uric acid stones with fatty and non-fatty liver, it comes out to be 12.9% and 14.1% respectively. Pearson chi-square came out to be 0.764 representing no association between types of renal stone (uric acid/non uric acid) with fatty infiltration (being less than 0.05 is significant).

CONCLUSIONS: A pilot study performed resulting in no significance in Pakistani population between fatty infiltration and type of renal stones.

O-6**Imaging spectrum of endometriosis in asian population; role of MRI with laproscopic / histopathological correlation**

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BACKGROUND: Endometriosis is a common, benign disorder defined as the presence of endometrial tissue at extrauterine sites, typically involving the pelvis. The typical symptoms of endometriosis are pelvic pain, dysmenorrhea, dyspareunia, and infertility. The gold standard for diagnosis of endometriosis is diagnostic laparoscopy and biopsy. Endometriosis has 3 types: 1) ovarian endometriomas, 2) superficial peritoneal implants, and deep infiltrating endometriosis (DIE). Both ovarian endometriomas and DIE can be detected accurately by imaging with sensitivity and specificity of 90% and 98% respectively for endometriomas and the sensitivity and specificity for DIE diagnosis regardless of their locations is 94% and 77%, respectively.

OBJECTIVE: To determine the MRI features of endometriosis and correlate them with laproscopic/ histopathological diagnosis.

METHODS: In a retrospective study, all the patients who presented to radiology department of Shifa International Hospital Islamabad for MRI pelvis between January 2021 to September 2023 with complaints of either AUB, dysmenorrhea, pelvic pain or subfertility in whom imaging features were similar to endometriosis were evaluated using convenient sampling technique from radiology information system. Out of total 186 patients 70 patients with mean age of 35.86 proceeded with laproscopy and biopsy. Rest of the patients were excluded from the study. A number of different variables were taken into account including menopausal status, location of the lesion, T1 and T2 characteristics, T1 Fat suppression, diffusion restriction, post contrast enhancement, hematosalpinx and association. Data was collected using a structured data sheet and analysed using SPSS version 25.

RESULTS: 97.1% of the patients were premenopausal and 2.9% were postmenopausal. Ovaries were the most common site of involvement (85.7%) followed by fallopian tubes (20%). Less common sites were cul de sac, previous scar site pleura/pericardium. T1 hyperintensity was seen in 87% of the cases and T2 shading/dark spots were seen in 82.9% of the cases. Only one case with of biopsy proven endometrioma showed T1 fat suppression, all the other cases did not show any. Diffusion restriction, post contrast enhancement and hematosalpinx were seen 42.9 and 22.9 and 27.1 % of the cases respectively. Most common association was uterine fibroids followed by adenomyosis seen in 42.9% and 21.4 % of the cases respectively. 84.3 % of the MRI diagnosis of endometriosis were consistent with laproscopic/histopath findings. In 15.7% of the cases, other diagnoses were seen on histopathology like hemorrhagic cyst or teratoma. After applying Fisher's exact test, it was seen T1 hyperintensity and T2 shading are statistically significant variables in patients of endometriosis with p values of 0.02 and 0.002 respectively.

CONCLUSION: Our study confirms that MRI is an accurate tool for diagnosis of endometriosis.

O-7**CT coronary angiography in a patient with stable chest pain referral audit**

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OBJECTIVES: An audit to assess whether requesting of CT coronary angiography in investigating patients with stable chest pain meet NICE clinical guidelines. The investigation aims to diagnose either myocardial ischemia (by

non-invasive functional testing) or luminal stenosis (by anatomical imaging or angina not to simply screen for CAD).

METHODOLOGY: This was a descriptive retrospective study over a period of 2 months from 15 June 2023 to 15 August 2023. A total 80 patients were selected. Data was collected through referral notes and PACS. Patient records were assessed in terms of symptomatic and asymptomatic patient undergoing CT coronary angiogram. Target was to achieve 90 percent compliance. Data was analyzed through excel.

STANDARDS: Patients referred for CT coronary angiography should have been assessed accurately by physicians and meet the NICE criteria for referral

TARGET: 90% compliance.

RESULTS: A total of 80 patient were selected undergoing CT coronary angiography at Rehman Medical Institute. Among them 50 patient were presented with stable chest pain (25 males and 25 females), 28% patients above 50 and 76% below 50 years age, 68% were intermediate risk and 32% were low risk patients and 0% were high risk patients. 28% intermediate risk patient with stable chest pain have severe disease, 36% intermediate risk patient were having atherosclerotic plaque, In 4% intermediate risk patient CT coronary could be not performed due to high calcium score. 32% low risk patient have no disease. Thus 68% patient with stable chest pain meet the NICE guideline.

CONCLUSION: 68% patients with stable chest pain meet NICE guideline. Among them 28% were having CAD. 38 % patient do not meet NICE guidelines due to no proper assessment of risk factor by clinician and lack of discussion of radiologist with clinician for risk stratification.

O-8**Prevalence of left ventricular thrombus on cardiac MRI, in patients with left ventricular systolic dysfunction**

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Left ventricular (LV) thrombus is a frequent and potentially dangerous complication in patients with LV systolic dysfunction and ischemic cardiomyopathy. Clinical and imaging characteristics of LV thrombus were evaluated on contrast-enhanced magnetic resonance imaging (MRI).

OBJECTIVE: The purpose of this study was to evaluate (find out) the prevalence of thrombus in patients with an impaired left ventricular systolic function, as well as to evaluate different parameters for the prediction of the risk factor for LV thrombus.

MATERIALS & METHODS: Adult patients with ischemic / non-ischemic cardiomyopathy were subjected to CMR over the span of 06 months. 25 patients were evaluated on Late gadolinium enhancement images (LGE sequence) on CMR.

RESULTS: Late gadolinium enhancement images in 10 among 25 patients, on CMR depicted LV thrombus as homogeneous black due to the absence of vascularity, surrounded by structures with contrast uptake such as LV cavity and myocardium, resulting in good contrast resolution. An LV thrombus was deemed to be protuberant if its borders were distinct from the adjacent endocardium and it protruded into the LV cavity, or mural, if its borders were contiguous with the adjacent endocardium, as previously described.

CONCLUSION: This study showed increased sensitivity and greater accuracy of LGE sequence of CMR in confirmation of LV thrombus. Novel independent risk factor for LV thrombus was found to be a myocardial scar, as recognized by LGE-CMR. Patients with LV thrombus experienced substantially increased risk of higher embolic events.

O-9**Do respiratory maneuvers affect right hepatic vein wave form and maximum velocity in post-LDLT recipients**

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OBJECTIVE: To evaluate the effect of respiratory maneuvers on the right hepatic vein (RHV) Doppler waveform and its maximum velocity in post-living donor liver transplant (LDLT) recipient patients.

METHODS: This was a prospective cross-sectional study performed at the Pakistan Kidney and Liver Institute and Research Centre (PKLI& RC), Lahore Radiology Department. The sample size of the study was 30 patients, after applying the inclusion and exclusion criteria. Most of these patients were analyzed during their first post-operative week while staying in the surgical intensive care unit (SICU). The Doppler waveform and maximum velocity of RHV were recorded during normal gentle breathing, following breath-hold after deep inspiration, and then after quiet expiration. The waveforms that were recorded were triphasic, biphasic, or monophasic in the pattern. To assess the RHV flow quantitatively, the Damping Index was also calculated during all these three respiratory maneuvers as follows (D.I=Minimum velocity/maximum velocity).

RESULTS: The maximum velocities during normal respiration, after quiet expiration and after breath-holding following deep inspiration were 125cm/sec \pm 49cm/sec, 105cm/sec \pm 41cm/sec and 94 cm/sec \pm 38cm/sec. The waveforms observed during gentle breathing were triphasic in 77%, biphasic in 10%, and monophasic in 13% of patients. After quiet expiration, these were triphasic in 80%, biphasic in 6%, and monophasic in 13% of patients. While, after breath-hold following deep inspiration, the waveforms observed were triphasic in 42%, biphasic in 13%, and monophasic in 45% of patients. (P <0.008).

CONCLUSION: The study showed that not only did the RHV waveforms show significant change from triphasic pattern to monophasic pattern, but also the peak velocities were lower following expiration. Therefore, during the Doppler ultrasound assessment of post-LDLT recipient patients, respiratory variations must be taken into consideration.

O-10**Response evaluation following SBRT for liver tumors using CECT as a modality of choice in cyberknife robotic radiosurgery department, JPMC, Karachi**

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OBJECTIVE: To determine the treatment response on follow up imaging in post stereotactic body radiation therapy (SBRT) treated hepatocellular carcinoma (HCC) patients with contrast enhanced cross-sectional imaging and assist in further clinical management.

MATERIAL AND METHODS: This retrospective observational study was conducted at the department of Radiology and cyber-knife robotic radiosurgery, JPMC Karachi from January 2019 to January 2023 and comprised data of patients with histologically proven hepatocellular carcinoma (HCC) who treated with stereotactic body radiation therapy (SBRT). Patients of either gender of age 20 and above who presented with histological confirmation of HCC, child-pugh score of A or B and were not the ideal candidates for surgical resection and their disease confined to liver were consecutively enrolled. Imaging assessment for response evaluation of SBRT treated HCC patients were recorded at every follow up imaging observing pattern of arterial phase

enhancement of treated tumor on contrast enhanced computed tomography (CECT) performed with tri-phasic protocol. Pre-contrast, arterial, portal and delayed CT phase images were acquired before, at three months, six months and after a year post-treatment.

RESULTS: By observing pattern of arterial enhancement on (CECT) out of 61 patients, 29.5% (18) showed CR (complete response), 30% (19) showed PR (partial response), 11% (7) showed PD (progressive disease) and 40 (65%) were SD (stable disease). Among PD, patients showed up either with interval development of a new nodule >1cm in size showing enhancement on arterial phase, while few others were already treated patients who showed >20% enhancement of targeted lesion.

CONCLUSION: Intra-tumoral necrosis with lack of thick lobulated enhancement and subsequent tumor volume reduction are strong predictors suggestive of good tumor response to SBRT with CECT remains a standard imaging technique for response evaluation.

O-11**Role of radiology in identification of concealed narcotics in GIT**

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OBJECTIVE: To evaluate the role of plain Xrays and CT in identification of concealed narcotics in GIT.

METHODS: Body packing refers to the internal concealment of drugs within the gastrointestinal tract. Drugs may be concealed within condoms, foil, latex or finger gloves or cellophane. Concealment of illicit drugs may be achieved by different ways and described in different terms. On the other hand, body pushers fulfil the task of drug transport by placing typically larger drug-filled packages into their rectum or vagina.

My study was carried out in Quaid-e-Azam international hospital Islamabad from June 2000 to June 2003. Owing to the proximity of QIH, Islamabad to the airport, suspects with concealed heroine capsules are brought to Radiology department QIH, Islamabad where suspects were evaluated with plain x rays / CT.

RESULTS: A Total of 57 suspects were evaluated with plain xrays and CT. 30 suspects were identified with concealed narcotics. Plain x-rays and CT were used in all cases. There was no case of gastrointestinal obstruction or perforation. There were 29 males and 1 female. 15 suspects had heroine capsules identified in stomach, 8 suspects in the small intestine, 2 suspects in the large bowel and 4 suspects had capsules in the stomach, small and large bowel. One suspect had pushed the small pack of heroine capsules in the rectum and was identified by plain x-ray.

CONCLUSION: Radiologic examination is very important in identifying concealed narcotics. Detection rates of high accuracy, sensitivity, and specificity are achieved by experienced radiologists.

O-12**Comparison of post contrast chemical shift T1 and FSE T1 for identification of internal openings of perianal fistulas on MRI**

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OBJECTIVE: To compare post contrast chemical shift T1 and FSE T1 for identification of internal openings of perianal fistulas on MRI.

METHODS: 44 consecutive patients with perianal fistula were selected, age range 26-70 years, all presented with perianal discharge. MRI technique routinely performed for perianal fistulas include 2D T2 PROPELLAR, 2D T2 PROPELLER with fat saturation, 2D T1 FSE fat saturation, 2D post contrast T1 FSE fat saturation. Additional imaging was done using 3D LAVA post contrast with chemical shift technique in axial plane. Both T1 fatsat of FSE and LAVA were compared. Agreement for each sequence for determination of internal opening was assessed separately by an independent experienced. The radial site of the internal opening was defined based on clock positions (12 o'clock anterior and 6 o'clock posterior).

RESULTS: 44 fistula tracts were found: 42 inter-sphincteric and 2 trans-sphincteric. A single case was with a secondary ramification with its own separate internal opening. Total 45 internal openings were found out of which 7 were only visualized on post contrast LAVA (15.5%) and 6 were only visualized on post contrast T1FS (13.3%). 32 internal openings were visualized on both post contrast T1FS and LAVA (71.1%). The best sequence for depiction of internal opening was post contrast LAVA with 15.5 % internal openings only visualized on this sequence followed by post contrast T1FS with 13.3% openings only detected on this sequence. Comparing the post contrast T1FS and LAVA sequences showed that, for best results, both sequences were necessary. out of which 3 were female and 41 were male.

CONCLUSION: We concluded that both post contrast T1FS and LAVA sequences were necessary for better detection of internal openings as fair percentage of internal openings was detected by only one of the sequences.

O-13

Adhesive Capsulitis: Contributory role of contrast enhanced MRI for evaluation of disease extent and associated findings

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OBJECTIVE:

- To describe imaging findings of adhesive capsulitis on MRI.
- To highlight the role of intravenous contrast in diagnosing early and advance adhesive capsulitis along with its extent and associated findings.

MATERIAL & METHODS: Total 135 cases of MRI Shoulder reviewed retrospectively from Jan 2015 to June 2023. 70 patients with history of trauma, tumor and infection were excluded from study. Rest of the 65 patients with clinical suspicion of adhesive capsulitis were reviewed thoroughly and MRI findings were enlisted in tabulated form.

RESULTS: Out of 65 patients, 25 patients had none of the findings of adhesive capsulitis and 40 patients had variable findings of adhesive capsulitis. Our study showed linear correlation with the amount of capsular thickening and agree of capsule enhancement. There was partial obliteration of the rotator interval fat in 23 patients (57.5%) , 61% out of these had moderate to marked enhancement while 39% did not show significant enhancement. 27.5% positive cases had no obliteration but still half (45.5%) had enhancement. Positive cases showed less commonly complete obliteration of the rotator interval fat. In case of complete rotator interval fat obliteration, there is always moderate to severe enhancement. There was thickening and enhancement of the coracohumeral ligament in 38% of the cases. 67.5% cases had no thickening of the axillary recess and out of these 30% showed mild enhancement so post contrast MRI helps in the early detection of adhesive capsulitis. In contrast to prior studies, near 45% positive cases did not show any enhancement of the thickened axillary recess. Overall 23 out of 40 positive cases showed enhancement of the, rotator interval as well as axillary recess. The majority of the patient's either did not develop any joint effusion (72%, n= 28) or had only mild joint effusion (23%, n=9). Although we excluded patients with history of trauma, labral & ligamentous tears were incidentally noted in 25% of cases which could be unnoticed reason of adhesive capsulitis. 75% (n=

28) patients develop some abnormality in supraspinatus tendon which was seen either alone or in combination including tendinosis in 35%, tear 33% (either partial n=7 or full n=6), tenosynovitis in 15% and associated bursitis and 5% cases. In cases of tear associated with tenosynovitis was seen in 30% (4 out of 13) cases. Only 20% patients develop some abnormalities in infraspinatus tendon including tenosynovitis (13%), tendinosis (10%), tear (8% either partial or full). 42% (n=12) patients showed mainly tendinosis of subscapularis and 25%, tenosynovitis in 18% on rarely both. 50% (n=20) patients showed mainly tenosynovitis of the biceps femoris which was mild to moderate.

CONCLUSIONS: Contrast enhanced MRI is more useful in the diagnosis of adhesive capsulitis as it shows thickening and enhancement of specific soft tissue areas like joint capsule and synovium as compared to non-contrast MRI. It also helps to delineate the extent of disease.

O-14

Correlation and reliability of bone density at CT with bone mineral density (BMD) at DEXA scan

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OBJECTIVE: The aim of present study is to determine the correlation of CT bone density with BMD at DEXA and reliability of CT bone density assessments.

METHOD: It was a retrospective analytical study with universal sampling technique, conducted at Dow Institute of Radiology, DUHS. Those patients comprise the study population who simultaneously underwent DEXA scan and CT scan (KUB/ abdomen/ chest/ spine) within a year interval, from 2019- to 2022 by matching Data list at HMIS PACS. Elliptical ROI cursor on mid axial slices of 4 (D9-12/ L1- L4) vertebral bodies was drawn, sparing cortices on bone window settings and mean HU attenuation values were recorded twice and BMD values from DEXA report were noted.

RESULTS: Out of 78 subjects, the mean age of the patients was 54.6 ± 12.4 years. 64 lumbar and 15 dorsal spines at CT were analyzed. There was an excellent significant intra-class correlation for measuring CT scan bone density assessments. (ICC > 0.90, p<0.001) except 4th vertebral measurement (ICC = 0.88, p<0.001). Bland-Altman plot showed good agreement between mean CT scan density measurement with hip / neck / spine BMD with no significance bias. Mean ± SD: -4.35x10-10 ± 1.06; T-stat (P-value): <0.001 (>0.99).

CONCLUSION: Overall, there was an excellent intra-class correlation between two CT scan bone density assessments and good agreement between CT and DEXA scan measurements.

O-15

Enhancing radiological practice through Chat GPT-3: Insights from on-call radiology residents and consultants

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OBJECTIVE: This study explores the utilization and impact of Chat GPT-3, a state-of-the-art AI language model, among on-call radiology residents and experienced radiology consultants. The objective is to understand how Chat GPT-3 influences clinical practice, communication, and patient care within the dynamic and time-sensitive realm of radiology.

METHODS: A mixed-methods approach was employed, combining surveys and in-depth interviews with radiology residents and consultants across various healthcare institutions in Pakistan during January to June 2023. The sample size was calculated through Sample Size Calculator by Wan Nor Arifin keeping margin of error=5%. The total calculated sample size was 200 patients. A proforma based on 20 questions was used to inquire the basic health hazards. This proforma was formulated using references from various studies and a pilot check was performed. SPSS version 21 was used to input the data for statistical analysis. The participants provided information about their experience with Chat GPT-3, including its frequency of use, purposes, perceived advantages, and limitations. Qualitative data were analyzed thematically, and quantitative data were subjected to descriptive statistical analysis.

RESULTS: Majority participants were residents 78.6% with most having 2-4 years of experience 28.6%. only about half of the participants use AI. However those who use it only do so rarely 35.7% and only 14.3% use it daily. Majority used AI for literature search 35.7%. Although majority of the participants still believe that CHAT GPT is not of much benefit to them 60% it is probably reflected in the lack of awareness of its uses. About 30% believe it might be helpful to incorporate AI into our practice in future.

CONCLUSIONS: Chat GPT-3 is a valuable asset for radiology team, by helping in accelerating decision-making, enhancing collaboration, and improving patient outcomes. Despite some limitations and current unawareness, the technology's role in radiology appears promising.

O-16

Determining the prevalence and differential patterns of paediatric cerebral atrophy in a tertiary care hospital in Peshawar, Pakistan

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OBJECTIVE: To study the prevalence and differential patterns of cerebral atrophy in paediatric age group on MRI scans in HMC.

METHODS: A cross-sectional hospital-based survey was conducted at Hayatabad Medical Complex, Peshawar, Pakistan encompassing a period from February 2023 to July 2023. A total of 136 children presenting with various brain pathologies, who had undergone brain examinations through Magnetic Resonance Imaging (MRI) scanners were enrolled in the study. Brain MRI scan images were examined by a radiologist. Four linear radiological methods were measured in order to determine presence or absence of brain atrophy. The brain atrophy was considered when lateral ventricular body width >30 mm, cella media index <4, cortical sulci width >2.5mm or inter-hemispheric width >6mm was demonstrated.

RESULTS: A total of 136 patients were examined on MRI (age range 1 month -12years). Out of these 87 were males (64%) and 49 females (36%). The prevalence of paediatric brain atrophy was found to be 23.5% and a male to female ratio of 1:1 was observed. The median age was 11 Months. Five patterns of cerebral atrophy were observed. These included central, cortical, global, focal and hemiatrophy with percentage of 37.5%, 31.2%, 21.8%, 6.25% and 3.1% respectively.

CONCLUSION: The central subtype of cerebral atrophy emerged as the most common form of brain volume loss in this paediatric population followed by cortical subtype. The findings underscore the importance of recognising and addressing this condition in children, as it can have significant implications for neurocognitive development and overall health. Further research is needed to explore the underlying causes and potential interventions for paediatric cerebral atrophy in this region.

O-17

To assess the diagnostic accuracy of sonography in diagnosis of axillary lymph node metastases in breast cancer taking histopathology as gold standard

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OBJECTIVE: To assess the diagnostic accuracy of sonography in diagnosis of axillary lymph node metastases in breast cancer taking histopathology as gold standard.

MATERIALS AND METHODS: This cross sectional validation study was conducted at Radiology department, Sandeman Provincial Hospital, Quetta for six months from 7th July 2022 to 6th January 2023. A total of 100 patients of age 30-70 years, having breast cancer undergoing core needle biopsy for confirmation of metastasis were included. All patients were undergone ultrasound of the bilateral axillas. Findings were noted and metastasis was labeled as positive or negative (as per operational definition). The patients were then subjected to core needle biopsy and histopathology. Reports were assessed and discussed with histopathologists. Findings were recorded on a predesigned proforma and results were analyzed by using the SPSS version 21 by descriptive and inferential statistics.

RESULTS: Overall sensitivity, specificity, positive predictive value, negative predictive value and diagnostic accuracy of sonography in diagnosis of axillary lymph node metastases in breast cancer was 90.48%, 81.08%, 89.06%, 83.33% and 87.0% respectively.

CONCLUSION: This study concluded that diagnostic accuracy of sonography in diagnosis of axillary lymph node metastases in breast cancer is quite high.

O-18

Pannus sign: A novel sonographic detection method for placenta accreta spectrum disorder at Aga Khan university hospital, Karachi.

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OBJECTIVE: To study the sensitivity and specificity of pannus sign in sonographic detection of placenta accreta spectrum using histopathology as gold standard.

METHOD: 3-year prospective chart review was conducted for 102 pregnant patients between March 2020-June 2023. Demographic, clinical, and imaging data was collected. Single researcher manually measured pannus in sagittal plane images on ultrasound. The pannus measurement was taken from most caudal placental point to internal os line. Diagnosis was confirmed by post-caesarean histopathology report. Sensitivity, specificity, positive and negative predictive values were calculated.

RESULTS: The sensitivity and specificity of sonographic pannus sign for detection of placenta accreta spectrum were found to be 69% and 33.3% (95% confidence interval) respectively, with a positive predictive value of 92% and negative predictive value of 8.8%.

CONCLUSION: The "pannus sign" is a sensitive marker for detecting placenta accreta, although its specificity is limited. There is excellent agreement between ultrasound and histopathology. Future research should explore its reproducibility and its use in conjunction with other markers to enhance the accuracy of sonographic detection and improve clinical outcomes with special benefit to pregnant women in third world countries.

O-19**MRI in primary amenorrhea: A comprehensive analysis**

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OBJECTIVE: This study aims to investigate the frequency and underlying causes of primary amenorrhea utilizing MRI as a diagnostic tool.

MATERIAL AND METHODS: Cross sectional prospective study. Study was conducted at Department of Radiology, Liaquat National Hospital, Karachi for 1.5 years. The sample size was calculated through Sample Size Calculator by Wan Nor Arifin (Available at <https://wnarifin.github.io/ssc/ss1prop.html>) by taking prevalence of anatomic abnormalities= 82.3% Ref, margin of error = 9%. The total calculated sample size was 70 patients. However, sample size was limited due to very low prevalence. Non-probability consecutive sampling was used.

The pelvic examination included the evaluation of the presence and morphology of the uterus, ovaries and vagina. The uterus was examined in terms of normal growth and developmental abnormalities, such as rudimentary uterus, agenesis and hypoplasia. The ovaries were evaluated in terms of normal development, location anomalies, agenesis, presence of ovotestis and hypoplasia. Patients with ovarian tissue showing normal, hypoplastic, unilateral agenesis or location anomalies were examined for Müllerian duct anomalies (MDAs). The cause of primary amenorrhea was detected using pelvic MRI as per operational definition.

RESULTS: In our study, a total of 14 patients were included who presented with complaints of primary amenorrhea. Out of these, 35.7% (n=5) were diagnosed on mri as gonadal dysgenesis and 50% (n=7) were diagnosed with mullerian duct abnormalities. While 14.3% (n=2) were diagnosed with male pseudohermaphroditism and imperforate hymen.

Among those who were diagnosed with gonadal dysgenesis, about 80% (n=4) had sawyer syndrome while about 20% (n=1) had ovarian hypoplasia. Among patients who had mullerian duct abnormalities, about 71.4 % (n=5) had Mayer-Rokitansky-Küster-Hauser (MRKH) Syndrome which was the overall most common anomaly observed in our study, while the ratio for unicornuate and bicornuate uterus separately observed in our study was equal which was about 14.3% (n=1) each.

Among others which included, male pseudohermaphroditism and imperforate hymen, consisted of about 50%(n=1) each.

CONCLUSION: In conclusion, MRI is a useful modality that aids in early diagnosis of primary amenorrhea which helps in early intervention and surgical correction. The early diagnosis of these conditions is important and requires multidisciplinary approach so as to aid in puberty, fertility and psychological care of the patient.

E-POSTERS (P)**P-1****Establishing teleradiology hubs in Pakistan**

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In 2022, the global teleradiology market was estimated at US dollar 2.44 billion with expected growth at a compound annual growth rate (CAGR) of 12.9% from 2023 to 2030. The increasing demand of teleradiology is attributable to rising prevalence of target diseases as well as its increased demand for reporting of emergency cases and acquiring second opinion.

Teleradiology is the electronic transfer of radiology images from one place to another for interpretation or second opinion. This is especially beneficial for hospitals in remote areas of our country where radiology services such as X-ray, mammography and CT are present but there is shortage of qualified radiologists who can report these images hence the services to patients are limited.

With advancing technology it is now possible to outsource the task of reporting these studies to other centers especially those in the bigger cities where the radiologists are more easily accessible, and sometimes even jobless because of employment saturation and rising inflation. The teleradiology services hence are advantageous for both the patients and radiologists in terms of providing increasing opportunities of reliable reporting for patients and increased job opportunities for radiologists.

We have proposed certain infrastructure requirements for establishment of teleradiology hubs in the hospitals of our country and work instructions for its smooth functioning. And, like everything has both advantages and disadvantages, the teleradiology itself also has its pros and cons, some of which we have compiled. We aim to present this information in the form of a poster presentation for the benefit of radiologists in our community.

P-2**Pedunculated subserosal uterine leiomyoma presenting as acute abdomen secondary to torsion: A case report**

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Torsion of pedunculated uterine leiomyoma is very infrequent, and it is diagnosed mostly during surgery. Its incidence in literature is reported to be 0.2 % per operatively. We report a case of this atypical presentation of fibroid.

A 39-year-old young, unmarried female presented with acute abdominal pain. Her ultrasound revealed multiple fibroids, the largest one measuring 10.0 x 7.8 cm, arising from the anterior wall of the uterus. She underwent contrast enhanced CT pelvis, which confirmed the findings of enlarged uterus containing multiple myometrial and sub serosal fibroids. The largest fibroid, which was measuring upto 14.0 cm, was pedunculated arising from the uterine fundus. It was hypoenhancing when compared to the rest of the fibroids which raised the possibility of its torsion or degeneration. Mild ascites was also noticed. Per operative uterus was approximately twelve weeks gestational size with multiple fibroids. The largest fibroid was pedunculated, arising from the uterine fundus, close to the left fallopian tube. It had two whirls of torsion, giving it bluish discoloration. Myomectomy was done.

Our case highlights the CT findings that can raise the possibility of a torqued fibroid, leading to prompt surgical intervention in order to avoid fatal complications.

P-3**Progressive cellulitis of the abdominal wall as a rare presentation of complicated acute appendicitis: A case report**

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We report a case of rare and atypical presentation of acute appendicitis. This highlights the need for consideration of intra-abdominal causes in patients presenting with abdominal wall infection.

A 50-year-old known diabetic presented with progressive high-grade fever, painful right flank and raised inflammatory markers for the last twenty days. He was clinically diagnosed as cellulitis of the abdominal wall with erythema, tenderness and warmth localized to the right lower quadrant. He was treated with IV antibiotics for six days with poor response. Therefore he had a CT abdomen and pelvis which confirmed extensive abdominal wall infection. It also revealed a few intra-abdominal collections containing air in the right flank, extending into the right lower quadrant, tracking along the right iliopsoas muscle and displacing the cecum anteriorly. The appendix was not clearly visible. The CT findings raised suspicion of a perforated inflamed appendix which was probably resulting in the abdominal collections and abdominal wall cellulitis.

Appendiceal perforation was found per operatively, confirming complicated acute appendicitis being the cause of abdominal wall infection.

P-4**Pre-sacral haematopoiesis: An unusual presentation of extra medullary haematopoieses secondary to thalassemia minor: A case report**

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Extramedullary hematopoiesis is a frequently occurring presentation in an elderly non-transfusion dependent thalassemia intermedia patient. It occurs as a compensatory response to longstanding hypoxia and predominantly involves thoracic spine in thalassemia patients. We present a case of indistinct clinical presentation of extra medullary hematopoiesis where main bulk of disease was in presacral region.

A middle-aged known hypertensive, thalassemia minor patient who was snuff and weed addict presented with progressively worsening exertional shortness of breath, low grade fever, fatigue, sweating, dribbling of urine, constipation and bilateral leg weakness. He had a history of a couple of blood transfusions in adulthood. His previous echo showed degenerative valvular (aortic, mitral and tricuspid regurgitation) disease with mild concentric LVH and LV systolic dysfunction.

He underwent CT chest, abdomen and pelvis with contrast which revealed hepatosplenomegaly with secondary haemochromatosis and chronic splenic infarcts. Large multilobulated soft tissue attenuation lesions were noticed along the ribs, epidural/ presacral space and bilateral paravertebral regions. The largest lesion was in the presacral space measuring 7.6 x 6.4 cm, compressing on rectum. Overall findings were highly suggestive of extramedullary hematopoiesis.

He was medically treated.

P-5**Amyand hernia found incidentally on CT KUB of a patient with urinary tract symptoms: A case report**

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A rare type of inguinal hernia is Amyand's hernia, where the appendix is located within the hernial sac. It is challenging due to its ambiguous appearance on imaging and is frequently diagnosed during surgery. Appendix is not always inflamed so removal is not always necessary. Due to the rarity and the indistinct clinical presentation, such cases can be a diagnostic dilemma.

An 80-year-old gentleman, known hypertensive, presented with ten days history of intermittent diarrhea, high grade fever and a chronic history of urinary hesitancy. On examination he had a long-standing inguinal hernia for forty years with no change in size for last twenty years. It was painless and non-tender.

He underwent ultrasound which showed left moderate hydronephrosis with proximal hydronephrosis. Right sided large inguino-scrotal hernia was noted with moderate scrotal wall edema.

CT KUB was advised which showed significant left sided hydronephrosis with abrupt transition at the pelvi-ureteric junction. The CT scan also revealed a large right sided inguinal hernia extending into the scrotum, containing a significant portion of the urinary bladder, multiple small bowel loops and omental fat along with its vessels. The herniated portion of urinary bladder was slightly thick walled containing few calculi. In addition, a mildly distended fluid filled tubular structure was identified in the hernial sac which was found to be appendix (Amyand hernia). No obvious bowel obstruction was noted.

He was conservatively managed due to significant comorbidities.

P-6**An interesting case of iatrogenic rupture of dermoid cyst of the lumbar spine with intraspinal and intracranial dissemination: A case report**

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Rupture of an intra spinal dermoid cyst is rare. Mostly, the rupture is spontaneous, however it can be iatrogenic as well, like during surgery or lumbar puncture. This can lead to potentially serious and fatal complications.

We present an interesting case of a 41-year-old patient who presented to the neurosurgical OPD with complaints of bilateral foot drop and loss of sphincter control which were gradual in onset. His past history was remarkable, being a diagnosed and operated case of intraspinal dermoid of the lumbar spine. He was first operated in 2017 with a good recovery. Gradually the patient re-developed symptoms due to disease recurrence and was re-operated in 2022. On the basis of his current symptoms and past history, an MRI of the whole spine was advised which revealed innumerable scattered lesions of variable sizes in the spinal canal. These were ranging from tiny foci to long linear lesions located along the cord surfaces, within the cervico-dorsal spine and few within the cerebral sulci. All of these lesions had MR characteristics favoring fat. Recurrent/ residual lesion was identified in the lumbar spine as well.

Considering the history, diagnosis of intraspinal dermoid rupture with extensive intraspinal and intracranial dissemination was made.

P-7**From hints and clues, a radiologists expedition**

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OBJECTIVE: It is often said that its not the destination that matters, but the journey that counts. For a radiologist however, that journey can be quite a challenge. Unfortunately our commitment is held back by the lack of provision of medical history, justification of the scan that's being performed and pertinent relevance in the current clinical scenario.

Our aim is to review and revisit the radiology requests received in our department and correlate with the degree to which they adhere to international guidelines. This would provide a deeper insight in improving overall radiological practice and ensure smooth workflow. Secondly it would also help us improve our quality of reporting by reducing potential delays and answering specific queries put forward to make the report as relevant as possible.

MATERIALS AND METHODS: Retrospectively, convenient sampling is used to review radiological request forms which are acquired through the facility's Picture Archiving and Communications Systems. The requests were analysed for certain parameters, such as physicians contact, relevant history, adequacy of ordered protocol, mention of previous scans, mention of co morbid and known allergies, justification of urgent scans with pertinent question in current clinical setting etc.

RESULTS: Nearly 3/4th of all the requests have inadequate clinical history with 2/5th of the requests not mentioning any differentials, history of prior surgeries or treatments or relevant examination findings. 1/4th of the scans donot mention need for comparison or whether the patient has any relevant imaging available. Good compliance with provision of physicians contact information, adequacy of ordered protocol and patient related information. Occasionally, no requests at all were available and stat scan was ordered when not necessarily required.

CONCLUSION: Poor compliance with inappropriately filled radiology requests hindering smooth workflow and resulting in delayed scan reports often warranting second opinions due to lack of specific clinical questions in initial orders. By increasing the compliance as per guidelines, radiology reports will be more readily available and increasingly clinically relevant and at the same time reduce work burden by avoiding unhelpful follow ups or use of inappropriate imaging modality.

P-8**When gas meets gall: Unveiling emphysematous cholecystitis in the wake of biliary drainage - a singular case study**

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INTRODUCTION: Internal external percutaneous transhepatic biliary drainage (IEPTBD) is a common procedure used in the management of biliary tract diseases. Emphysematous cholecystitis (EC) is a rare but potentially life-threatening variant of acute cholecystitis caused by gas-forming organisms. It is characterized by the presence of gas within the gallbladder wall or lumen. EC develops in about 1-3% of patients with acute cholecystitis. However, EC as a complication of IEPTBD is a rare occurrence. Here we present a rare case of EC as a complication of internal external biliary drainage.

CASE REPORT: A 56-year-old non-diabetic male with a history of metastatic pancreatic carcinoma underwent internal external biliary drainage for obstructive jaundice. The procedure was carried out normally with no immediate post-procedural complications. Four days later the patient developed localized pain at the site of the drain along with fever and chills. His leukocytes, neutrophils,

CRP and procalcitonin showed a rising trend. Ultrasound revealed hyperechogenic foci with dirty posterior acoustic shadowing within the gallbladder wall while abdominal x-ray showed distended gallbladder with air-fluid level and intramural air. A diagnosis of emphysematous cholecystitis was made. The patient could not undergo cholecystectomy as he was deemed unfit to undergo surgery. He was started on broad-spectrum antibiotics, however, his WBCs and inflammatory markers continued to rise, and he expired two days later.

CONCLUSION: To our knowledge, this is the first reported case of EC as a complication of internal external biliary drainage. Clinicians should be aware of the possibility of emphysematous cholecystitis as a potential complication of internal external biliary drainage and should monitor patients closely for signs and symptoms of this condition.

P-9**Relationship between bone mineral density and body mass index in association with age and gender in patients referred for dual-energy xray absorptiometry**

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OBJECTIVE: The objective of our study is to investigate the association between body mass index (BMI) and bone mineral density (BMD) in association with age and gender.

METHODS: A cross sectional observational study was conducted from January 2020 to 2022 at Radiology department of Hayatabad Medical Complex on individuals referred for DEXA scan. Association was assessed between bone mineral density and body mass index in both male, pre and post-menopausal female.

RESULTS: Out of 270 individuals 28.1% were male and 71.9% were female. Mean age was 51 ± 17.05 SD. 39.4% of male had BMI in range of overweight and obese, as opposed to female (86.5%). Increased BMI and decreased BMD was observed in age range of 41-70 years ($p < 0.05$). 26% of post-menopausal female showed osteoporosis as compared to pre-menopausal (20%) ($p < 0.05$).

CONCLUSION: There is increased risk of osteoporosis with increasing age. Post-menopausal female with increased BMI had decreased BMD.

P-10**Olfactory schwannoma masquerading as esthesioneuroblastoma on neuroimaging**

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Tumours of the olfactory area are not very common; neoplasia of this region include meningioma, adenoid cystic tumours, lymphoma, metastasis and esthesioneuroblastoma. Schwannoma is a benign, slow-growing nerve sheath tumour originating from the central or peripheral nerves containing Schwann cells. Majority arise from vestibular division of the 8th cranial nerve. Rarely, origins from the olfactory or optic nerve have been described, which is an enigma as these nerves are essentially devoid of myelin sheath. We reported a rare case of olfactory schwannoma mimicking esthesioneuroblastoma on imaging.

A man in his 20s presented with history of anosmia and nasal obstruction and few episodes of confusion. He denied other symptoms and weight loss. ENT

examination revealed polypoidal mass in right nasal cavity which was bleeding to touch. MRI of the brain showed a large lobulated and dumbbell shaped heterogeneously enhancing mass expanding the right nasosphenoidal region with intracranial extension via the right cribriform plate. Foci of susceptibility dropout were seen, attributed to areas of calcifications or haemorrhagic changes. Some intracranial cystic alterations were also observed. Based on the clinical and imaging findings (characteristic dumbbell shaped), our initial impression was esthesioneuroblastoma. After endoscopic biopsy, histopathology confirmed schwannoma. Total resection of tumor was done via neuro-navigation guided bifrontal craniotomy. On subsequent follow-up nasal obstruction was relieved without evidence of relapse of tumour.

According to our literature search, only few olfactory schwannomas have mimicked esthesioneuroblastoma with anterior cranial fossa involvement and paranasal sinus extension.

However, none of these cases exhibited a characteristic dumbbell shaped configuration with involvement of the sinonasal cavity, as our case displayed. So we concluded that such well-circumscribed dumbbell-shaped lesion with haemorrhagic foci or cystic degeneration extending into the nasal cavity, without surrounding infiltration, should serve as a clue to radiologists, indicating a benign schwannoma.

P-11

A case of recurrent subacute appendicitis in emergency department: Highlighting the importance of scanning right iliac fossa in abdominal pain evaluation

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INTRODUCTION: Appendicitis, typically characterized by acute inflammation of the appendix, is a common surgical emergency. While the diagnosis of acute appendicitis is often straightforward, atypical forms of the condition, such as recurrent, subacute, and chronic appendicitis, present diagnostic challenges. These atypical presentations can lead to delayed diagnoses and increased complications. Here, we present a case of a 22-year-old female patient with a history of repeated admission to our emergency department due to recurrent episodes of subacute appendicitis.

CASE REPORT: A 22-year-old girl with no significant medical history presented to our emergency department with complaints of epigastric pain. Her hospital record showed two prior admissions with the same complaint treated as gastroenteritis. Ultrasound (US) abdomen performed at the time were unremarkable.

US examination performed this time revealed a slightly dilated fluid-filled appendix with a diameter of 7 mm. The total leukocyte count was $20.2 \times 10^9/L$. Computed tomography scan was done for further evaluation which showed a distended fluid-filled appendix with a hyperenhancing wall, measuring approximately 8.6 mm in maximum transverse dimension associated with subtle periappendiceal fat fuzziness. Laparoscopy appendectomy was performed. Intraoperative, the appendix was dilated with inflammation only at the tip. On histopathologic examination, a single intact appendix with a patent lumen filled with fecalith, showing dense transmural inflammation with focal serositis was noted. Five months postoperatively, she had not experienced any episode of recurrent pain.

DISCUSSION AND CONCLUSION: Subacute appendicitis is a rare condition that can be misdiagnosed initially due to its atypical presentation. However, a history of recurrent non-specific abdominal pain should alert emergency physicians as well as radiologists to consider the possibility of subacute appendicitis and appropriate diagnostic imaging can be a valuable tool in such cases as supported by various reports, including the case discussed here.

P-12

Cesarean scar pregnancy: A case report with review of updated recommendations for standardized sonographic evaluation and reporting in early gestation

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INTRODUCTION: Cesarean scar pregnancy (CSP) occurs as a result of implantation of the gestational sac into the scar or niche from a previous cesarean section (CS). Although the incidence of CSP is rare, occurring 1 in 1800 to 2000 pregnancies, global increase in cesarean delivery rates has led to an increase in the number of pregnant women with previous CS scars, increasing the risk of CSP in these women. However, there is no uniform reporting system available for CSP.

Recently updated modified Delphi method provides standardized recommendations for the sonographic evaluation and reporting of CS scars or CSP in early gestation.

CASE REPORT: A 34-year-old woman (G2P2), previous h/o of two cesarean deliveries, presented to OBGYN clinic with 6 weeks of amenorrhoea. Patient was asymptomatic at the time of presentation. Beta-hCG was 3603 mIU/mL. Transvaginal sonography (TVS) demonstrated a single intrauterine GS with normal yolk sac embedded into more than one half- the myometrium, in the lower uterine segment at the site of the previous scar. Findings were consistent with Grade II cesarean scar pregnancy. Medical therapy was given and a follow up TVS a week later redemonstrated CSP corresponding to 6 weeks of gestation and BHCG of 7765 mIU/L. MRI of the pelvis was done which confirmed the location of intact CSP.

After detailed discussion with the patient, she opted to undergo laparotomy with removal of GS and bilateral tubal ligation. Postoperatively she remained stable and was discharged with a scheduled follow-up with obstetrics and gynecology.

DISCUSSION AND CONCLUSION: CSP, once a rare entity, is showing rising trends due to increase in the rates of cesarean deliveries. Prompt and accurate diagnosis is essential in order to prevent life threatening complications associated with it, using standardized guidelines provided by modified Delphi method.

P-13

Extraosseous ewing sarcoma presenting as peritoneal disease: A unique case report

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Ewing's sarcoma, a member of the small round blue cell tumors group, is the second most common primary malignant bone tumor encountered in clinical practice. Typically affecting young adults and children, this malignancy primarily manifests as an osseous lesion. However, the extraosseous variant of Ewing's sarcoma is an exceedingly rare occurrence, marked by distinctive characteristics and prognosis. The reported incidence of extraosseous Ewing sarcoma (EES) is a mere 0.4 cases per million individuals.

This case report highlights a 23-year-old male patient who presented with vague abdominal pain. Computed tomography (CT) imaging revealed widespread peritoneal deposits, accompanied by local tumor infiltration along the falciform ligament and porta hepatis. Histopathological analysis, using Hematoxylin and Eosin (H&E) staining, confirmed the presence of a desmoplastic round cell tumor. A positive Fluorescence In Situ Hybridization (FISH) assay further confirmed the diagnosis of Ewing's sarcoma. Notably,

subsequent Positron Emission Tomography/Computed Tomography (PET/CT) scans failed to reveal any primary osseous lesion. As a result, the patient underwent treatment with the VAC-IE chemotherapy regimen, a recognized standard of care for Ewing's sarcoma, with follow-up imaging indicating disease stability. Surgical intervention was not recommended due to the diffuse nature of the disease.

The rarity of extrasosseous Ewing sarcoma poses diagnostic and therapeutic challenges, with limited prior literature addressing cases involving non-skeletal sites, such as the paravertebral soft tissue, oral cavity, gastrointestinal tract, mediastinum, kidney or other organs. However, the unique aspect of our case lies in the presentation of Ewing sarcoma as *denovo* peritoneal disease, a manifestation not extensively documented in existing medical literature. Although the imaging features of EES are non-specific, but its importance lies in confirming the extent, working out the staging and forming a treatment regimen tailored to the patient's disease status. Given its scarcity, collaborative efforts among healthcare providers and researchers are essential to improve our understanding of EES and develop more effective therapeutic strategies.

P-14

Orbital imaging for neurological diseases - A window into the brain

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Many neurological diseases are associated with orbital findings, sometimes orbital imaging can lead to diagnosis of these neurological disease.

To highlight the importance of careful analysis of orbit which can give us clue of what's happening inside brain.

Institutional experience with presentation of our cases.

The orbital imaging is usually performed for indications like visual problems, trauma and proptosis. It is important to be aware that sometimes abnormalities in orbit are linked to underlying neurological disorders therefore, orbital imaging can aid radiologists in diagnosis of some challenging cases. In our series of cases we presented five primary neurological disorders all were associated with orbital findings.

We found careful evaluation of orbit give us a clue in diagnosing some very difficult cases. It is recommended by our analysis that always screen orbits in all MRI brains.

P-15

A radiologist approach to acute parenchymal hemorrhages: How to intercept shrouded dragons

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Myriad of reasons can cause intracranial haemorrhage sometimes they may be associated with underlying occult lesions. Where intracranial haemorrhage prompts the surgeon to opt for immediate intervention, it is pertinent to find the cause of hemorrhage before running any intervention, as not to miss any occult lesion. Blind mediation in such cases can be catastrophic for the patient.

To highlight the importance of detailed investigation/imaging to reveal occult cause of intracranial hemorrhage before proceeding towards any kind of intervention.

Institutional experience with presentation of our cases.

This case series signifies the importance of detailed imaging to reveal the cause of bleed before proceeding towards any kind of intervention. We have designed an action plan and protocol to be followed for proper evaluation:

- Screen = NECT in cases with HTN
- Atypical age or history = MR with T2*/SWI/T1C or CTA
- If hyperacute ischemic "stroke" = MR with T2*/SWI and DWI
- If MR shows atypical hematoma=MRA or CTA
- If MRA or CTA inconclusive, go for DSA

Proper imaging with appropriate imaging modality to reach the root cause of bleed before intervention as blind intervention can be catastrophic for patient.

P-16

Caudal duplication syndrome: A case report

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Caudal duplication syndrome is rare and complex congenital condition with variable presentations. This term is often quoted as a type of incomplete separation of mono-ovular twins or conjoined twinning. Female patients predominate in a ratio of about 2:1. Spinal and spinal cord duplication shows a wide spectrum of anomalies, ranging from a simple fibrous band splitting the cord into halves to complete duplication of the spine and spinal cord. The more serious forms are rare and only a limited number of cases are on record. Usually associated with other systemic malformations, including duplication of vascular structures, distal gastrointestinal and urogenital tracts and possibly limb malformations.

We present a case of 1 year old female baby who had history of surgery in lumbar spine for lipomyelomeningocele, however previous imaging or surgical notes were not available. She was the first issue of consanguineous parents. Her external genitalia was normal. Plain x-ray and CT scan of the dorsolumbar spine showed complex vertebral malformations with complete duplication of vertebral column from L1 level down to S1. MRI also showed duplication of the spinal cord. Caudal regression syndrome was noted as there was absent coccygeal vertebra. USG abdomen showed pelvic left kidney. She was advised further work up for gastrointestinal and genitourinary system and multidisciplinary team discussion was suggested. This is one of the rare case reports which showed combined vertebral (spinal) duplication with caudal regression syndrome. Caudal duplication syndrome is uncommon but can be diagnosed with combination of radiological investigation which can help in definition complex anomalies.

P-17

Radial scar - mimicker of breast malignancy

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Radial scar or complex sclerosing lesion is a benign well recognized radiological and pathological entity. It's an idiopathic lesion that mimic carcinoma because of its stellate configuration. The incidence of radial scar on guided core biopsy range from 0.6-3.7 % Radial scar is associated with atypical proliferative lesion and has chances of malignant transformation.

We present a case of 55 years old female who came to our department with history of trauma to inner right breast. Her clinical examination was normal. Her family history was negative for breast cancer. She was advised mammography for further evaluation. Mammograms shows mixed breast density and an incidental 14 mm distortion in lower outer aspect of the right breast. This was characterized as BIRADS 5. Left breast was mammographically

normal. Ultrasound correlation of the area of mammographic concern showed a 5 mm hypo-echoic mass. She subsequently underwent ultrasound guided 14G core biopsy, with post biopsy clip insertion. Histopathology showed B3 lesion without atypia, small fragments of radial scar and sclerosing adenosis and usual type hyperplasia. Owing to heterogeneous nature of B3 lesion and after discussion with clinical team decision was made for further image guided biopsy sampling. However patient opted for lumpectomy. Surgical excision showed similar histology and no evidence of atypia.

According to NHS breast screening program radial scars should be subjected to wider sampling through vacuum assisted excision (VAE) after initial core biopsy. The aim of VAE is to replace the surgical excision and is based on the fact that radial scars without atypia has very low upgrade rate to malignancy. The management of the radial scar should be refined according to new guidelines by NHS breast screening program to avoid unnecessary surgical intervention.

P-18

Takayasu arteritis type-IV, an unusual imaging presentation, mimicking Mid-Aortic syndrome

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BACKGROUND: Takayasu arteritis is a rare and chronic granulomatous vasculitis that affects the large vessels. Takayasu arteritis targets the aorta and its branches and is still of unknown etiology. It often affects female patients under 50 years of age.

Mid-Aortic syndrome (MAS) is a rare vascular disease that commonly causes renovascular hypertension. The lumen of the abdominal aorta narrows and the ostia of the branches show stenosis.

CASE PRESENTATION: We present a case of 38 years old female of pakistani origin with Takayasu Arteritis type IV, mimicking mid-aortic syndrome with a single distinguishing feature between the two entities.

CONCLUSION: Our case is among a few cases of Takayasu Arteritis published world wide with such a strong semblance with mid-aortic syndrome.

P-19

Navigating ascariasis: Ultrasound's role in detecting ascariasis in abdomen and its complications

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AIMS: The aims of this study are to review the role of ultrasound in detecting abdominal ascariasis and its potential complications, including appendicitis, pancreatitis, and bowel obstruction

DISCUSSION: This radiology educational abstract focuses on the role of ultrasound in the detection of abdominal ascariasis and its potential complications, including appendicitis, pancreatitis, and bowel obstruction. Ascariasis is a common parasitic infection caused by *Ascaris lumbricoides*, which can affect various organs and systems in the human body. The presence of *Ascaris* in the biliary tract can cause biliary colic, cholangitis, and pancreatitis, while the migration of the parasite to the appendix can cause acute appendicitis. Ultrasound is a non-invasive imaging modality that can provide valuable diagnostic information in cases of suspected biliary ascariasis and associated complications.

The use of ultrasound can facilitate early diagnosis, guide appropriate

management, and prevent potential complications. Therefore, ultrasound is a valuable tool for the detection and management of abdominal ascariasis and its associated complications.

P-20

Cystitis glandularis

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It is a benign proliferative disease of the urinary bladder mucosa. This condition is characterized by the proliferation of mucus-secreting glands in the mucosa and submucosa of the bladder.

It is a chronic reactive inflammatory disorders that occur in the setting of chronic irritation of the bladder mucosa ;the common causes include bladder outflow obstruction like BPH, urinary bladder calculi, and chronic infection. Due to the effect of chronic irritation the urothelium proliferates into buds, which grow down into the connective tissue beneath the epithelium in the lamina propria.

P-21

A case report: Brown tumor secondary to primary hyperparathyroidism due to parathyroid adenoma

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BACKGROUND: Parathyroid adenoma causing increased serum PTH levels which in turn leads to increased serum levels of calcium by reabsorption at nephron and resorption at bone, negative feed back fails to respond to increased serum levels of calcium. At sites where bone resorption is at greater pace, granulation tissue formation, vascular proliferation and fibrous tissue ingrowth replaces normal marrow with a reparative cellular process that histologically resembles giant cell tumor of bone and radiologically distinct brown tumor.

CASE PRESENTATION: We present a case of 40 years old female of Afghan origin. She presented to us with 7 month painful history of left palate and maxillary swelling.

P-22

MRI features of recurrent anaplastic variant of meningioma: A case series

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INTRODUCTION: Meningiomas are tumors located outside the brain parenchyma and constitute the most frequently occurring type of tumors originating in the meninges. These neoplasms are not of glial origin and instead arise from either the meningocytes or arachnoid cap cells in the meninges. Magnetic Resonance Imaging (MRI) is the preferred diagnostic modality for identifying and characterizing meningiomas. Anaplastic meningioma displays cytological features that are clearly malignant, closely resembling those seen in carcinomas or high-grade sarcomas. As a result, it is categorized as WHO grade III. The incidence of atypical meningiomas is quite lower approximately 1.4%.

Typical MRI findings for anaplastic meningioma often encompass features such as unclear distinctions between the tumor and surrounding brain tissue (TBI), irregular tumor boundaries, heterogeneous tumor appearances, and the absence of well-defined, capsule-like enhancements along the tumor edges. Lower apparent diffusion coefficient value depicts higher cellularity and is thought as the most trustable diagnostic feature for these lesions. Being highly cellular and grade III tumors, anaplastic meningioma are known for their inherent aggressiveness, which is linked to a significantly elevated risk of recurrence, ranging from 50% to 94%.

We present two cases of recurrent anaplastic meningioma with special attention to their atypical imaging variations and characteristic distinguishing them from typical benign meningioma.

CASE DISCUSSION:

CASE 1: A 40 years old female presented with headache and vomiting for three months not relieved by pain medications and underwent a brain MRI on 1.5T machine which revealed a large abnormal signal intensity area in the right parietal lobe showing isointense T1W signals and heterogeneously hypointense T2W signals with significant ring like post-contrast enhancement. Histopathology revealed it to be anaplastic variant of atypical meningioma and patient underwent surgical resection of the lesion. After one year of radiotherapy, the patient redeveloped same symptoms. Subsequent MRI brain revealed multiple soft tissue enhancing lesions with heterogeneously hypointense signals on T2W images associated with marked vasogenic edema in right temporal and right parietal lobe. In addition, multiple metastatic deposits in scalp. Histopathology confirmed recurrence of the disease with cutaneous metastasis.

CASE 2: A 76 years old female presented with spells of unconsciousness and severe headache unresponsive to noninvasive treatments. MRI brain revealed a large anterior falcine mass with isointense signals on T1W and heterogeneously hypointense signals with heterogeneous post-contrast enhancement. The patient underwent surgical removal of the mass based on biopsy proving it to be anaplastic meningioma. The patient developed recurrent anaplastic disease at surgical bed within one year after primary resection.

CONCLUSION: Diagnosing meningioma can pose a considerable challenge when encountering variations in imaging. However, it's worth noting that many rare histological variants exhibit their own unique imaging or clinical traits, setting them apart from typical meningiomas. We strongly believe that familiarity with these distinguishing features can enhance the confidence of radiologists when diagnosing meningioma.

P-23

Free silicone injection for breast augmentation; A rare occurrence in developed world

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Free silicon injection is an alternative form of breast augmentation and has been in use for several decades. Liquid silicone injection for breast augmentation was initially used in 1940s, until its use was banned in the 1970s because of reports of adverse effects. Regrettably, this practice is still carried in developing countries in south America and Asia. Silicone injections are more affordable as compared to silicone based breast implants. Free silicone injection has generated significant controversy due to numerous complications associated with it such as granuloma formation, skin discolouration, granulomatous hepatitis and embolism. In addition cancer detection in silicon injected breast becomes as diagnostic dilemma.

We present a case of 55-year-old lady from Vietnam, who came to new referral breast clinic with bilateral breast pain and lumps. On examination very hard lumps were felt in both breasts and suspicion of bilateral multifocal cancers were raised. The patient at that time didn't give history of breast augmentation.

Contrast enhanced mammography (CESM) was performed as per trust protocol for suspected cancer. Low energy images of CESM showed dense breasts with diffuse silicone throughout the breasts with multiple oil cysts. This was characterised as M2. No enhanced was seen on recombined images. Ultrasound was limited due to diffuse silicone throughout the breast parenchyma with poor penetration of US beam. Silicone adenopathy was seen in both axillary regions. On questioning during US, patient gave history of breast augmentation by free silicone however said it was many years back therefore she couldn't recall well. Patient was sent back to clinical team for discussion.

Detection of breast cancer becomes very difficult in such cases as siliconomas can cause distortion of the breast parenchyma and obscure visualization of a small breast cancer. Several studies have tried to relate liquid silicone injection and the occurrence of malignancy yet their causal relationship has not been proven. Until now, there is no guideline regarding the diagnosis and management of breasts injected with silicone.

P-24

Wunderlich's syndrome in a patient of tuberous sclerosis

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Wunderlich syndrome is a rare condition in which spontaneous non-traumatic renal hemorrhage occurs into sub capsular and peri renal space. It is clinically characterized by Lenk's triad I Acute flank pain, flank mass and hypovolemic shock. Its etiology is divided into neoplastic and non-neoplastic causes; in neoplastic lesions angiomyolipoma is the most common cause.

We present a diagnosed case of tuberous sclerosis complex with left sided renal angiomyolipomas who presented with spontaneous retroperitoneal hemorrhage from one of left renal angiomyolipoma. He already had undergone right side nephrectomy due to ruptured angiomyolipoma.

The patient presented in emergency with presenting complain of left flank pain and hematuria. He had no history of trauma. On physical Examination abdominal tenderness, low blood pressure, tachycardia, weak feeble pulse and tachypnea were noted. Lab Investigations showed Hb: 7.1 mg/dl, Serum Creatinine: 3.41mg/dl, Urea: 45mg/dl, K:3.8mg/dl, TLC: 10.5mg/dl.

P-25

Chondrosarcomas of cervico dorsal spine

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Chondrosarcomas are malignant cartilaginous tumours, commonly found in long bones in this case report a rare presentation of this tumor in spinal cord was presented.

The patient was a 45 year old male with history of swelling & dull aching pain in back for 10 months. MRI of dorsal spine showed a large serpentine multilobulated cauliflower shaped mass lesion of 11.5 X 7.5 X 5.5 cm emanating from right side neural foramina at D1-D2 intervertebral disc level. Mass is extending from D1 To D6 vertebrae. It has small intra foraminal & large extra foraminal components. The intra foraminal component is intradural & extramedullary in location. It is causing widening of intervertebral foramina, erosion & scalloping of posterior cortex of vertebral body at D1 transverse process, lamina & spinous process of D1 & D2 vertebrae. There is lateral displacement of spinal cord resulting in moderate compression of spinal cord

at D1 & D2 levels. The large extra foramen component is in right paravertebral region. It is abutting right mediastinal pleura adjacent to apical segment of right upper lung anterosuperiorly & extending caudally along right paravertebral region involving right paravertebral & postvertebral muscles of both sides & pressure erosion is also identified in right posterior 1st & 2nd ribs. The mass is hyperintense with central linear hypointensities on T2WI, uniformly hypointense on T1WI & showing peripheral rim enhancement on post contrast study. It was not suppressed on STIR and fat sat images. Abnormal enhancement also seen in adjacent paravertebral muscles, right posterior 1st & 2nd ribs & lamina & spinous process of D1 & D2 vertebrae representing infiltration. CT scan done which confirmed pressure erosions in above describe levels & also showed shell like calcification in mass adjacent to spinous process of D2 vertebra.

On the basis of these findings the diagnosis of plexiform neuro fibroma was suspected. Excision of the mass done. Histopathology revealed chondroid neoplasm, features favoring chondrosarcoma grade II.

P-26

Exploring the hidden path: Radiology of canal of nuck hernias

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OBJECTIVES: To elucidate the anatomical importance of the Canal of Nuck in females and to distinguish Canal of Nuck hydroceles using various imaging modalities.

BACKGROUND: The Canal of Nuck, a rare extension of the peritoneum into the inguinal canal, typically closes during early childhood but can persist into adulthood, giving rise to different abnormalities. This presentation offers insights into its anatomy and radiological diagnosis using illustrative cases.

FINDINGS: Normal development: In fetal development, the gubernaculum links the ovaries to the labia majora in females and influences uterine positioning. The Canal of Nuck, accompanying the gubernaculum, usually closes by age 1 in females but remains partially patent in males, developing into the tunica vaginalis.

Abnormal Development: Incomplete closure of the Canal of Nuck can lead to encysted hydroceles with potential complications. Complete non-closure results in a communicating hydrocele, potentially causing pelvic organ herniation, particularly the ovary, and associated risks like torsion.

Ultrasound is the initial imaging method of choice. Encysted hydroceles appear as anechoic fluid collections, while hernias may contain various structures. Doppler aids in assessing complications.

CT is not the primary choice for Canal of Nuck issues to minimize radiation exposure, but incidental findings may occur during CT scans for other purposes, with findings dependent on contents like hydroceles or hemorrhagic fluid. MRI is typically used to investigate inconclusive ultrasound findings, revealing hydroceles as elongated, cystic structures in the inguinal canal with specific signal characteristics. MRI can also evaluate pelvic organ herniation into the Canal of Nuck and should include a search for contralateral abnormalities.

CONCLUSION: Anatomy and diagnostic proficiency are crucial for interpreting Canal of Nuck hydrocele imaging, facilitating communication with clinicians.

P-27

Imaging insights into ventriculomegaly in adults

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LEARNING OBJECTIVES: Assess and elucidate the primary neuroimaging characteristics for guiding differential diagnoses in ventriculomegaly.

BACKGROUND: Obtaining an accurate diagnosis in adult patients is of utmost importance because ventriculomegaly can be a sign of normal brain aging or underlying neurological conditions such as tumors or hydrocephalus. It is crucial to precisely identify and distinguish the underlying causes, as this is essential for planning suitable treatments and ultimately enhancing patient outcomes. This presentation elucidate the essential aspects of MRI assessments and showcase representative cases, underscoring the significance of precise diagnoses in adults experiencing ventriculomegaly.

FINDINGS:

Normal Aging Brain (Figure 1)

- Enlarged lateral ventricles
- Widening of sulci and subarachnoid spaces
- Widened interhemispheric fissure

Callosal Angle: It is a useful marker of patients with Idiopathic Normal Pressure hydrocephalus. (Figure 2) It is measured on a coronal image perpendicular to the anterior commissure-posterior commissure (AC-PC) plane at the level of the posterior commissure.

Normal value is 100-120°

Evans index: It can be used as a marker of ventriculomegaly. (Figure 3) Ratio of the maximum width of the frontal horns of the lateral ventricles and the maximal internal diameter of the skull at the same level employed in axial images.

Ratio of >0.30 indicates definite ventriculomegaly.

Normal Pressure Hydrocephalus:

Enlarged lateral and third ventricles out of proportion to the cortical sulcal enlargement.

Alzheimer's disease: (Figure 4)

- Prominent ventricles and sulci bilaterally.
- Enlarged temporal horns
- Disproportionate volume loss in the temporal lobes
- Bilateral symmetric atrophy of mesial temporal lobes.

CONCLUSION: In adults, achieving a precise diagnosis of ventriculomegaly necessitates comprehensive knowledge of neuroanatomy and essential diagnostic characteristics.

P-28

The art of easing minds: Unburdening cognitive load in radiology multimedia presentations

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Learning Objectives:

By seeing this E-poster the viewers should be able to:

- Describe the components of cognitive load
- Explain five principles to reduce extraneous processing in multimedia presentations.
- Employ techniques that reduce cognitive load in multimedia presentations.

P-29**Use of triphasic CT LI-RADS v 2018 in patients undergoing dynamic contrast-enhanced CT liver for hepatic lesion characterization**

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OBJECTIVE: To evaluate frequency of liver lesions and performance of major features in patients at risk for HCC using triphasic CT LI-RADS v2018 categorization.

METHODS: Retrospective cross-sectional observational study was conducted at the Radiology department of Khyber Teaching Hospital in Peshawar from March 2021 to September 2022.

RESULTS: Out of 55 patients (80 observations) in our study, the mean age was 49 years \pm 10 (range, 32-78 years) including 35 male and 20 female patients. Out of 80 observations, 61 (76%) were classified as LR-5, 4 (5%) were LR-4, 7 (8.75%) were LR-TIV along with LR-5 lesions and 3 (3.75%) observations were assigned as LR-M (1 gastric carcinoma metastasis, 2 cholangiocarcinoma). LR-3 lesion {nodular transient hepatic attenuation differences (THADs)} and LR-2 lesion (wedge THADs) were noted in 1 (1.25%) patient each, while 3 (3.75%) observations were classified as LR-1 (cyst, fatty infiltration, hemangioma). No observation was found in 3 patients with cirrhotic liver. 2 patients had both LR-5 and LR-4 lesions.

CONCLUSIONS: LI-RADS establishes precise diagnostic criteria aiming to systematize nomenclature, assessment, and documentation of imaging findings in those with a predisposition to developing HCC.

P-30**Higher cardiac events with impaired exercise tolerance (mets <7) and lower ejection fraction <45% in patients with medium to large size fixed perfusion defect(s) on gated myocardial perfusion scintigraphy with prior coronary revascularization**Maseeh uz Zaman,¹ Nosheen Fatima^{1,2}¹ *Department of Radiology, Aga Khan University Hospital (AKUH), Karachi, Pakistan.*² *Karachi Institute of Heart Diseases (KIHD), Karachi, Pakistan.**E-mail: maseeh.uzzaman@aku.edu*

INTRODUCTION: This prospective study was carried out to find the predictive value of fixed perfusion defect(s) for future cardiac events on follow-up gated myocardial perfusion imaging (GMPI) after coronary revascularization (graft surgery and coronary stenting).

METHODOLOGY: Total 330 patients who were referred for GMPI for chest pain evaluation after coronary revascularization from June 2015 till December 2016 were selected. 186 out of 330 patients with fixed perfusion defects on GMPI were included as study population. These patients were followed for 06 years for cardiac events both fatal myocardial infarction (FMI) and nonfatal myocardial infarction (NFMI). Follow up was not available in 11 patients, leaving a cohort of 175 participants. Patients were subdivided according to stress protocol (Bruce protocol in 84 and vasodilators in 91 patients).

RESULTS: Mean age of population was 58 years without statistically significant difference in age, body mass index, diabetes mellitus, hypertension, dyslipidemia, family history and smoking in exercise and vasodilator stress groups (except male dominance in exercise group). No significant Odd ratio (OR) was found for cardiac events in exercise and vasodilators groups with medium to large size fixed perfusion defects on GMPI. In exercise group, metabolic equivalent of task (METs) less than 7 (METs <7) had significant OR and Hazard ratio for future cardiac events in patients with medium to large size perfusion defects as an independent factor (OR=9; CI=1.07-75.5, HR=8.61; CI=2.49-29.75 p<0.05; and OR=10.1) and as confounding factor for ejection fraction less than 45% (CI=1.13-90.9; HR=5.66; CI=1.76-18.14; p<0.05).

CONCLUSIONS: Medium to large sized fixed perfusion defects with LVEF <45% are associated with higher cardiac events rate in patients after coronary revascularization. A lower exercise effort tolerance (<7 METs) is an independent and confounding factor for patients with LVEF <45%. Exercise GMPI has better predictive value for future cardiac events in patients with coronary revascularization.

P-31**Predictors for disease free and progression free survival in metabolic responders and non-responders on follow-up FDG PET/CT after chemoradiation in nasopharyngeal cancers**

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AIM/INTRODUCTION: To determine disease free survival (DFS) and progression free survival (PFS) in patients with nasopharyngeal cancer (NPC) having achieved complete (CMR) and partial metabolic response (PMR) on post-chemoradiation (CRT) FDG PET/CT.

MATERIALS AND METHODS: Retro-prospective study conducted at PET/CT Section of JCIA accredited healthcare facility of Pakistan. Total 68 patients of NPC patients who had baseline and post-CRT FDG PET/CT were included and prospectively followed till predefined study end points of recurrence or disease progression or death from April-2016 till October 2022. Based on CMR on post-CRT FDG PET/CT, 40 patients labelled as responders and 18 as non-responder based on PMR respectively. By using ROC analysis, the predictors of PMR and recurrence were analyzed. Kaplan Meier's survival plots were analyzed to measure DFS in responders and PFS in non-responders respectively.

RESULTS: On follow-up, mean DFS in responders was 49.6 \pm 6.3 month, 78% survival and recurrence was found in 09 (22%) patients. Baseline SUVmax >8.3 of primary tumor, stage IV, body mass index >24.609 and male gender were found significant predictors of recurrence in responder group using ROC (p <0.05). In non-responders group, the mean PFS was 6.8 \pm 1.8 months. Higher SUVmax >9.5 and more stage IV disease on baseline FDG PET/CT were found significant predictors of shorter PFS in non-responders on ROC (p <0.05).

CONCLUSION: Male gender, higher BMI and primary tumor SUVmax (>8.3) on baseline FDG PET/CT predict shorter DFS in patients who achieved complete metabolic response after CRT. In patients with partial metabolic response on post-CRT, higher primary tumor SUVmax >9.5 and stage IV disease on baseline FDG PET/CT were found significant predictors of shorter PFS.

P-32**Peritoneal inclusion cysts: Unraveling the enigma within the abdominopelvic cavity**

Mariam Malik

*Department of Radiology, INMOL Cancer Hospital, Lahore, Pakistan.**E-mail: xz.mariam@gmail.com***TEACHING POINTS:**

- Peritoneal inclusion cysts are an unusual finding in the abdominopelvic cavity in perimenopausal women that may present with abdominal discomfort, distention or palpable masses.
- Pathogenesis is often related to prior abdominal surgery, trauma, pelvic inflammatory disease, peritoneal tuberculosis, endometriosis or tubo-ovarian abscess.

- On ultrasound they appear as thin walled multiseptated cysts while cross-sectional imaging reveals intraperitoneal loculated, septated fluid collection with cobweb appearance.
- The diagnosis can be challenging for radiologists because of the potential imitation with ovarian neoplasm, paraovarian cysts, hydrosalpinx, lymphangioma or complex ascites.
- Management strategies include hormonal treatment, observation, drainage or surgical removal. Surgical excision has a 30–50 % recurrence rate.
- Infection, fertility compromise and pressure effects on adjacent viscera are some of its complications. Malignant transformation is rare.
- Radiologists and surgeons must be aware of this pathology due to the potential mimic with other conditions.

CASE PRESENTATION: We present a case of 35 years female with past history of laparotomy for ileal tuberculosis with resection of stricture of small bowel 3 years ago. The patient since then complained of mild pain and discomfort in abdomino-pelvic cavities. Clinical examination was positive for a fluctuant mass in the abdomen and pelvis. Ultrasound showed a large loculated, septated fluid collection in the abdominopelvic cavity with possible differentials of loculated ascites versus complex ovarian mass. To solve the diagnostic dilemma, MRI pelvis was advised which exhibited intraperitoneal cyst like structure insinuating small and large bowel loops with a cobweb appearance. Minimal internal debris was present however no solid enhancing component was identified. The finding, in keeping with patient's previous surgical history, favored a diagnosis of peritoneal inclusion cyst. Interventional radiology referral was advised for cyst aspiration.

P-33

A rare case presentation of multiple gastrointestinal stromal tumors with metastasis to gallbladder, anterior abdominal wall and positive sister mary joseph nodules

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TEACHING POINTS:

- Gastrointestinal tumors are the mesenchymal tumors of gastrointestinal tract having major potential to metastasize into peritoneum and liver.
- The incidence rate of GIST with respect to location is as follows: Stomach- 56 % , small intestine - 32%, colon and rectum - 6 % , esophagus - 0.7%.
- GIST commonly metastasizes into liver and peritoneum, and less likely into lungs, lymph nodes and bone.
- There is rare presentation of this tumor metastasis into gall bladder, Sister Mary Joseph nodules and anterior abdominal wall.

CASE OUTLINE: A middle age lady who was a diagnosed case of Gastrointestinal Stromal Tumor (GIST) of small intestine and ongoing chemotherapy, presented to us for response assessment of treatment. Her CT chest, abdomen and pelvis was done with contrast. The CT scan revealed overall progression of disease in the form of multiple gastrointestinal tumors involving the whole of small intestine. There were also newly appearing metastasis into gall bladder, anterior abdominal wall and Sister Mary Joseph nodules. FNAC of the Sister Mary Joseph nodules and abdominal wall deposit confirmed these to be metastasis of GIST. The gall bladder lesion showed enhancement pattern similar to the rest of the GIST lesions of small bowel.

The patient was referred back to the primary oncologist for disease progression with development of metastasis in anterior abdominal wall and gallbladder.

In our poster we will show all imaging features of our patient and aim to enlighten the audience with this unusual presentation of GIST metastasis.

P-34

Avascular necrosis in patients treated with chemotherapy for hematological malignancies

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TEACHING POINTS:

- Avascular necrosis (AVN) is a disease that results from loss of blood supply to the bone. It is a complication of cancer therapy for hematological malignancies that includes corticosteroids
- Acute lymphocytic leukemia (ALL) is a type of cancer of lymphocytic cells of blood and bone marrow.
- Magnetic resonance imaging (MRI) is a non-invasive imaging technology that produces three dimensional detailed anatomical images used for diagnosis and treatment monitoring of disease process.
- Steroids: A group of natural and synthetic hormones which have physiological effects including suppression of inflammation.
- Femoral epiphysis is a common site of involvement. Patients usually present with pain and limited joint motion.
- Symptoms can range from asymptomatic to severe pain, limited range of joint motion upto joint destruction.
- Incidence of avascular necrosis due to chemotherapy in haematological malignancies is 0.43% to 17.6%
- Plain radiographic findings are unremarkable in early stages of AVN. MRI is the most sensitive and specific imaging modality for diagnosis.
- SPECT scanning is used as an alternative to MRI when the results of MRI are indeterminate.

CASE OUTLINE: 1. A 17 years old female presented with limping and difficulty walking since last 3 months. She had been treated for Acute lymphocytic leukemia recently and was on maintenance therapy with steroids. Regarding her recent symptoms haematologist referred her to radiology department for investigations.

X-ray pelvis showed flattening and sclerosis of femoral heads bilaterally. MRI pelvis revealed double line sign in antero-superior aspect of bilateral femoral heads.

2. A 17 years old male complained of difficulty in walking and pain in bilateral hip region for 1 month. He was diagnosed case of B- ALL, post treatment 1 year back and at present on maintenance therapy with steroids.

MRI pelvis showed double line sign in supero-lateral aspect of bilateral femoral heads, bilateral sacral ala and in right acetabulum. Appearances were consistent with bilateral femoral heads, bilateral sacral ala and right acetabulum avascular necrosis.

Our aim is to highlight that anti cancer chemotherapy can lead to this serious complication. MRI aids in early detection and hence help in optimal and timely management.

P-35

Urinary bladder endometriosis post-cesarean section

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Endometrial tissue within the urinary bladder wall is an extremely unusual disorder known as urinary bladder endometriosis. The condition is characterized by the presence of endometrial tissue within the urinary bladder wall, leading to symptoms such as hematuria, dysuria, and pelvic pain. Diagnostic challenges often arise due to the nonspecific nature of these symptoms and the need for differential diagnosis with other bladder disorders. Imaging techniques such

as ultrasound, Magnetic Resonance Imaging (MRI), and cystoscopy play a crucial role in confirming the diagnosis. Treatment options range from medical management with hormonal therapies to surgical interventions like transurethral resection or partial cystectomy.

We are presenting a case report highlighting this uncommon yet clinically significant presentation of urinary bladder endometriosis in a 38-year-old female, who had been experiencing cyclical dysuria for about one year. Her medical history included two previous Cesarean deliveries. MRI revealed an 83x40x26 mm variable intensity lesion with internal cystic areas along left posterolateral urinary bladder wall which was inseparable from lower segment cesarean section (LSCS) scar, indicative of urinary bladder endometriosis. Uterine fibroids were also present. Patient received medical treatment leading to resolution of her symptoms.

Urinary bladder endometriosis following cesarean section is an uncommon but clinically relevant condition that demands timely recognition and appropriate management. A thorough diagnostic workup, including imaging studies and cystoscopy, is crucial for accurate diagnosis. Tailored treatment plans, ranging from hormonal therapies to surgical interventions, should be considered based on disease extent, fertility desires, and overall patient health.

P-36

A large phyllodes tumor in a 13-year-old female

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Phyllodes tumors are infrequent fibroepithelial neoplasms of the breast, account for only 0.3 to 0.9% of all the breast tumors. Phyllodes tumor primarily presents in adult females, with a few cases reported in adolescents. Histologically these tumors resemble giant fibroadenomas. These tumors can result in massive enlargement of the involved breast. Patients encounter physical and psychosocial problems. Therefore, this condition warrants early appropriate management.

In this report, we describe a case of a 13-year-old girl with an enlarging left breast mass for about four to five months. Her clinical assessment indicated the presence of a large, mobile left breast mass. Ultrasound revealed a well-defined lobulated hypoechoic lesion with evidence of internal vascularity measuring 11 x 4.2 cm involving the left breast. Phyllodes tumor was identified on histopathological analysis.

The primary approach to treating pediatric breast masses is conservative management. However, in cases of rapidly growing masses, there is significant likelihood of phyllodes tumor which require surgical management. Therefore, a comprehensive diagnostic evaluation and imaging examinations are necessary for accurate diagnosis. Given the high risk of recurrence and metastasis of phyllodes tumor, surgical excision should be done in terms of patient's overall well-being.

P-37

Rare case of hydatid cyst disease with false aneurysm formation from abdominal aorta

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Hydatid cyst is a zoonotic disease caused by an infection with the parasite *Taenia Echinococcus*. Hydatid cysts primarily affect the hepatic and pulmonary

regions. There have been reports of hydatid cysts developing in other organs, including the pancreas, brain, spleen, and kidney. Arterial involvement is rare and in some cases it can lead to false aneurysm formation. Here we reported a case of recurrent hydatid cyst in the left retroperitoneal region causing false aneurysm formation in the descending aorta in a patient who previously underwent nephrectomy because of renal hydatid cyst.

P-38

Pediatric ovarian torsion. A diagnostic dilemma

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Pediatric ovarian torsion is caused by twisting of ovarian pedicle along its mesentery due to excessive mobility of adnexa in prepubertal girls. It is a true gynecological emergency situation. Prompt diagnosis should be made as surgical restoration of blood flow may avoid irreversible damage and preservation of ovary. Pediatric ovarian torsion can be challenging to diagnose, however difficulty in diagnosing pediatric ovarian torsion lead to delayed treatment and more risk of infertility.

We present a case of 7 years old girl who came to our department in emergency with acute lower abdominal pain. Initial work up done with ultrasound which showed a large heterogeneous mass with internal rounded anechoic areas in left adnexa. On Doppler assessment this mass showed no discernible vascularity. She was advised contrast enhanced CT pelvis for further evaluation. CT shows non enhancing hypodense mass extending from left adnexa causing compression effect upon uterus and urinary bladder. On CT suspicion of ovarian torsion was made. Gynecology was consulted and patient underwent surgery. On surgery enlarged necrosed left ovary was found.

Ovarian torsion is emergency condition required early diagnosis and management with preservation of ovarian function and future fertility.

P-39

Imaging spectrum of atypical primary central nervous system lymphoma

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Primary central nervous system lymphoma (PCNSL) is an uncommon subtype of extranodal non-Hodgkin lymphoma with an incidence of only 0.47 per 100,000 people. PCNSL usually presents as solid lesions which are hyperdense on CT, hypointense on T2 weighted images, iso to hypointense on T1 weighted images and show restricted diffusion along with diffuse post contrast enhancement. However, occasionally PCNSL presents with atypical findings making the diagnosis challenging. The lesions may appear as non-contrast enhancing areas of signal abnormality or can present as diffuse disease with multifocal involvement mimicking other disease processes such as infection or demyelination rather PCNSL. Other atypical features include haemorrhage, calcification, cyst, and necrosis within the lesions.

We present a series of cases from a span of seven years (2017-2023) where we found 6 cases of PCNSL with atypical features. Atypical feature of susceptibility within the lesions was found in two cases. Non enhancing multifocal lesions were identified in 3 cases and were diagnosed as lymphomatosis cerebri. Linear nodular enhancement was found in one case involving the pons and diagnosis of CLIPPERS was proposed. Diffusion restriction was found as a consistent feature in all of these cases.

The most consistent diagnostic feature for PCNSL has been diffusion restriction.

The lymphoma lesions, either primary or secondary, invariably show restricted diffusion. In 2016, Schob et al. conducted a study postulating that restricted diffusion correlates with high proliferative activity of lymphoma.

The range of differential diagnoses for atypical presentations of lymphoma is wide, extending from encephalitis to demyelination, encompassing diffuse infiltrative disease processes. Understanding of the features pertinent to lymphoma is crucial for adequate diagnosis and treatment.

P-40

Pseudoaneurysms in head and neck

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Pseudoaneurysms can occur practically anywhere in the body from head to toe. These are termed as pseudoaneurysm as they lack the normal arterial wall configuration which is present in the true aneurysms. They are formed as a result of a rent in the arterial wall with continued flow of blood which is limited externally by a layer of fibrinous tissue or adventitia. Most commonly the pseudoaneurysms are encountered in the femoral artery as a result of percutaneous intervention with the incidence being approximately 6% post femoral artery catheterization. However, in the region of head and neck, where predominant supply is from branches of internal and external carotid arteries, the incidence of pseudoaneurysms is much lower. Aneurysms in the head and neck region can arise secondary to a number of etiologies including malignancy, infection and post intervention.

We present a series of 5 cases of pseudoaneurysms in the region of head and neck arising either from internal carotid artery or external carotid artery. The cases were encountered over a period of 5 years. These cases differ in etiologies with 1 case being secondary to tumor (known case of recurrent Cerebellopharynx) with pseudoaneurysm of lingual artery, 1 case post traumatic (fractured mandible) with pseudoaneurysm of internal maxillary artery, 2 cases being post surgical (both clival chordoma) with pseudoaneurysm from vertebral and internal carotid artery and 1 case post infection (occurring as a complication of long standing otitis media and skull base osteomyelitis) with pseudoaneurysm of internal carotid artery.

P-41

Glioblastoma mimicking primary central nervous system lymphoma

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GBM and PCNSL are two malignancies of the central nervous system with established clinical significance. Both these entities have completely different origins, course of disease, management and prognosis. GBM is a notorious glial neoplasm that can present with a multitude of imaging appearances; whereas PCNSL have characteristic imaging features. We present a unique case of GBM mimicking PCNSL and our observations of the features aiding the diagnosis.

A 70 years old female presented with complaints of confusion, urinary incontinence and gait imbalance for 1 month. MRI brain showed a large confluent solid lesion predominantly in periventricular distribution, appearing iso to hyperintense on T2 weighted images, showing patchy diffusion restriction and no susceptibility. Differentials of PCNSL and high grade glioma were given. The patient underwent neuro-navigation guided right frontal craniotomy

and right frontal lobectomy. Histopathology confirmed the diagnosis of Glioblastoma IDH-wildtype, WHO grade 4.

Although distinct from each other GBM and PCNSL overlap in imaging appearances, mimicking the other. A number of methods have been devised to differentiate between the two, including advanced imaging tools such as perfusion, spectroscopy and radiomics. However, GBM has been known for angiogenesis and vasculogenesis leading to its extensive growth and spread whereas this particular feature is not seen with PCNSL and acts as a potential differentiator between the two. This simple yet diagnostic feature can be identified on baseline MR images as tiny flow voids within the lesion and does not require advanced imaging tools. This feature is of great utility especially in our country with limited resources in most of the setups.

P-42

Isolated cerebral hydatid cyst

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Hydatid disease is an uncommon parasitic infection commonly caused by tapeworm *Echinococcus granulosus*. *Echinococcus granulosus* is common in the Mediterranean part of the world including Africa, South America, the Middle East, Australia, and New Zealand. It is less frequently seen in the South East Asia region. Cerebral hydatid disease is very rare accounting for only 2% of intracranial space occupying lesions and occurs in only 1-4% of people infected with this parasite. CNS hydatid can be found in any location in the cerebral hemispheres but most commonly it is found supratentorially and around the middle cerebral artery territory. We report a rare case of isolated cerebral hydatid cyst which is detailed below:

A 19-year-old male patient presented with the complaints of headache, vomiting and diplopia for 1 week. Upon inquiry of the family history it was found that the patient's sister-in-law had hepatic hydatid disease. Patient underwent a screening MRI brain followed by a neuronavigation MRI brain for surgical planning which showed well circumscribed rounded cystic intra-axial lesion in the left frontal lobe with thin smooth walls. There were no internal septations or floating membranes. No daughter cyst could be seen. No post contrast enhancement was noted. Patient underwent ultrasound of the liver and gallbladder which was negative for any pathology. Diagnosis of isolated simple unruptured cerebral hydatid cyst was made. Patient then underwent en bloc surgical removal of the cyst. Histopathology confirmed features of hydatid cyst. Patient was discharged in stable condition on antihelminthic drugs.

P-43

A rare case of xanthogranulomatous cholecystitis in a 27-year-old male

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Xanthogranulomatous cholecystitis (XGC) is a rare chronic inflammatory condition affecting the gallbladder, presents diagnostic challenges due to its similarities to neoplastic conditions both in imaging and pathology. It exhibits clinical symptoms like other cholecystitis forms or gallbladder carcinoma. Radiologically, it often presents gallbladder wall thickening, a common feature shared with gallbladder carcinoma. Treatment typically involves open cholecystectomy.

We present the case of a 27-year-old male who complained of ongoing upper abdominal pain, accompanied by tenderness, rectal bleeding, intermittent fever, and weight loss over the course of one month. An abdominal ultrasound

showed significant circumferential diffuse wall thickening of gallbladder with maximum thickness up to 18 mm along the anterior wall, but no gallstones or fluid accumulation was identified. Subsequent CT imaging of the abdomen revealed a contracted gallbladder with diffuse wall thickening reaching a maximum thickness of 21 mm along the fundal region, displaying patchy enhancement along with the persistent mucosal enhancement. There were no gallstones, no peri-cholecystic fat stranding, and no abnormalities in the common bile duct (CBD). Given the patient's young age and the non-invasive nature of the disease, an inflammatory cause was favored. Consequently, an open cholecystectomy was performed, and the subsequent histopathological examination confirmed the diagnosis of XGC.

This case underscores the significance of considering XGC in young patients with gallbladder wall thickening and a history of cholecystitis symptoms, despite its typical occurrence in older individuals. The radiological challenge lies in distinguishing XGC from neoplastic conditions. Intramural nodules become highly suggestive of XGC when they occupy a substantial part of the thickened gallbladder wall. Early diagnosis can spare patients from invasive procedures, ultimately improving outcomes.

P-44

Vein of Galen aneurysmal malformation (VGAM)-Prenatal ultrasound diagnosis

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Aneurysm of the vein of Galen is a rare & complex vascular malformation characterized by dilatation of the median prosencephalic vein in association with arteriovenous fistulas within the wall of vein of Galen or multiple shunts communicating with the anterior part of the vein.

Consequences:

1. High output cardiac failure (high velocity Left to right shunt)
2. Vascular steal caused by AV shunt in the brain leading to progressive cerebral atrophy.
3. Venous Hypertension with progressive ventriculomegaly.

CASE PRESENTATION: A 36 year old primigravida presented to us for a routine 3rd trimester antenatal scan at 36 weeks. Past medical history is remarkable for hypertension. The 1st and 2nd trimester antenatal scans were normal.

Findings on ultrasound imaging:

(Upon antenatal scan during 3rd trimester of pregnancy)

- Anechoic structure seen in fetal brainin the midline posteriorly superior to the tentorium cerebelli and superior to the thalamus.
- Increased blood flow seen on color Doppler.
- Dilated sagittal sinus.

(No fetal cardiac abnormalities seen)

CONCLUSION: This case (Vein of Galen aneurysmal malformation) is a rare vascular malformation representing less than 1% of all the intracranial AV malformations.

P-45

Prognostic strength of CA-19-9, demographic parameters and SUV_{max} of baseline ¹⁸FDG PET/CT in treatment naïve patients with pancreatic carcinoma

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OBJECTIVES: The aim of this study was to evaluate prognostic value of imaging based variables and tumor marker in predicting the progression free

survival in treatment naïve pancreatic cancer (PC) using baseline ¹⁸FDG PET/CT.

MATERIALS AND METHODS: This retro-prospective study was conducted at PET/CT Imaging facility of JCIA healthcare facility of Pakistan. Total 68 patients with PCs were retrospectively included who had ¹⁸FDG PET/CT for staging from March 2017 till December 2020. Thirty-two patients had unresectable stage IV disease on baseline imaging while remaining 36 underwent Whipple's procedure and both categories were followed by chemotherapy with/without immunotherapy. These patients were followed for a median period of 18 months (1 - 62 months) for progression free survival (PFS). Logistic regression analysis and receiver operating characteristics (ROC) analysis were used for independent predictors of patients' demographics, tumor characteristics, CA-19-9 and maximum standardized uptake value (SUV_{max}) in PFS. Kaplan Meier's survival curves were analyzed to measure PFS using ROC derived significant cutoff values of CA 19-9 and SUV_{max}.

RESULTS: Median PFS was 18 months (11-45) with 60% (41/68) patients were either died or labelled metabolic progressive disease (MPD) on followup. Using logistic regression analysis significant correlations were found for stage IV disease and pancreatic body/tail tumor with disease progression (Odd ratio; 7.535 and 4.803 respectively; p<0.05). Gender, obesity, histological tumor type and ¹⁸FDG avid regional nodes did not show significant impact on PFS. On ROC analysis; SUV_{max} >5.3 of primary tumor and baseline CA 19-9 >197 U/ml were found to have significant negative correlation with PFS (AUC 0.827 and 0.911 respectively; p<0.0001) and no association of age and primary tumor size (PTS) in PFS. Significantly shorter PFS were found using ROC derived cutoff values of SUV_{max} >5.3 versus =5.3 of primary tumor (mean and 95%CI; 16.7 vs. 48.5 and 10-23 vs 41-56; logrank=25.014; p<0.0001) and baseline CA19-9 >197 versus = 197 U/ml (mean and 95% CI; 11.8 vs. 46.9 and 7-16 vs 39-55; logrank=38.217; p<0.0001).

CONCLUSION: SUV_{max} >5.3 of primary tumor and baseline CA 19-9 >197 U/ml were found to have significant negative correlation with PFS in treatment naïve PC patients. Among demographics, only stage IV disease and pancreatic tail and body tumors were found to have negative association with disease progression.

P-46

Standardization in pre-imaging protocols in follow up ¹⁸FDG PET/CT studies in lymphoma patients; reasons beyond benchmark

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BACKGROUND AND OBJECTIVE: ¹⁸FDG PET/CT plays an important role by helping the oncologists and guides them whether to continue, change or abandon a treatment, depending upon the response of the tumor. Treatment responses are often measured by use of percentage changes in SUVs (standardized uptake value) in a patient across all longitudinal studies of that patient. The standardization is needed for the use of quantitative ¹⁸FDG PET/CT as an imaging biomarker. The execution of standardization of ¹⁸FDG PET/CT study refers to all steps involved in obtaining quantitative uptake measures (including preparation of a patient, PET/CT acquisition, image reconstruction, data analysis, and PET/CT system calibration procedures. Objective of this clinical audit is to see compliance of standardization in pre-imaging protocols of follow up PET/CT studies in treatment response of lymphoma patients and scrutinize the reason(s) of deviation beyond the benchmark.

MATERIALS AND METHODS: Study Settings: PET/CT section of Radiology Department, Aga Khan University Hospital, Karachi, Pakistan **Study Design:** Retrospective single-center clinical audit project. **ERC:** ERC: 2023-8394-23806. **Study Duration:** Patient's record will be collected retrospectively from June 2021 till December 2022. **Data Collection:** Patient's questionnaire of baseline and interim ¹⁸FDG PET/CT studies from 1.6.2021 till 31.12.2022 were retrospectively retrieved.

RESULTS: Study included 52 patients with lymphoma (M:F = 33 :19; Mean Age in Yr = 51 ± 15) who had baseline and interim 18FDG PET/CT studies. No significant difference was found between baseline and interim studies in fasting blood glucose level (109 ± 32 Vs 108 ± 22, mg%), ¹⁸FDG administered dose (175 ± 37 Vs 164 ± 30, MBq), uptake time (67 ± 12 Vs 68 ± 09, min), hepatic SUV_{mean} (1.79 ± 0.44 Vs 1.83 ± 0.35) and body mass index in Kg/m². We found good compliance to benchmark for hepatic SUV_{mean} ±20% and ¹⁸FDG dose ± 10%. But 10/52 studies had non-compliance in uptake time ± 15 minutes (80% Vs 85%). Root-cause-analysis (RCA) found for non-compliance found to be due to release of prior bed bound patients and prolong radiation planning session.

CONCLUSION: We found good compliance to benchmark derived from EANM 2015 recommendations for fasting glucose, administered ¹⁸FDG dose and hepatic SUV_{mean}. However, in 10 studies we found non-compliance in uptake time due to delays caused bed-bound patients and unexpected radiation planning session.

P-47

An audit to assess motion artefacts in neuro-MRI

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OBJECTIVE: An audit to evaluate motion artefacts in neuro MRI examinations to determine if our radiology department meets the standard when they affect diagnostic accuracy.

METHODS: From the PACS/HMIS all neuro-MRI examinations (brain) performed from 1st November 2022 to 31st January 2023 were included in the audit study. Assessment was made for motion artifact and were graded as mild, moderate and severe. For those sequences/examination with moderate/severe artefact record was made if affected sequence(s) /examination have been repeated. Or if artefact is acknowledged in report. Target was 100% according to standards for interpretation and reporting of imaging investigations, 2nd edition The Royal College of Radiologists.

RESULTS: During 3 months period 250 MRI brain were performed. The age ranged from neonates to >80 years. 90.8% of scans did not show motion artifact. 4.4% showed minimal artifacts. 2.8% had mild, 0.8% moderate and 1.2% severe artifacts. 2% of the scans required action in the form of repeat sequence or acknowledgement in the reports issued.

CONCLUSION: A greater percentage of the artifacts acquired were minimal and mild with no actions required. Repeat sequence and acknowledgement in the report identified in moderate and severe cases of artifact thus adhering to the RCR criteria set.

P-48

Intra abdominal rupture of seminoma in undescended testis with hemoperitoneum: A rare presentation

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Intra-abdominal seminomas arising from undescended testis are uncommon. It is often mistaken for mesenteric or retroperitoneal sarcoma. Undescended testes are a common birth anomaly. Approximately 10% of undescended testes are located in the abdominal cavity, and an intra-abdominal testis has been reported to be at a higher risk of testicular cancer than an inguinal testis. We present a case of a 52-year-old man who presented to the emergency department of Liaquat national hospital with acute abdominal pain. CT scan shows intra-abdominal rupture of the seminoma in undescended testis with hemoperitoneum.

P-49

Gastrointestinal stromal tumour as a rare association with neurofibromatosis type 1

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The association between gastrointestinal stromal tumor (GIST) and neurofibromatosis type 1 (NF1) has been documented in medical literature but remains rare. The prevalence of GIST in NF1 is estimated at 3.9–25%. We report a 40 year-old female patient who was admitted with acute abdomen and lower gastrointestinal tract (GIT) bleeding. Herpast medical history is significant for NF1 with numerous cutaneous neurofibromas Examination findings revealed a soft abdomen with a palpable mass on the left-hand side. Per rectal examination revealed was soft stool only. CECT chest and abdomen was done which revealed GIST. This case helps remind clinicians of the important association between NF1 and GIST, and the clinical pearl that most GISTs in NF1 are located in the small intestine.

P-50

Simultaneous presentation of Micheal and Mondini malformations in a single patient; Report of a rare case

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Autosomal-recessive genes account for over 80% of non-syndromic deafness patients, with a large proportion of those resulting in cochlear disease. Pakistan has a high frequency of inherited pre-lingual deafness due to the strong cultural practice of consanguineous marriages and a lack of information regarding screening procedures. We present a case of 3 years old female child, born via SVD with immediate cry. She presented with complaint of deafness since birth. BERA (brainstem evoked response audiometry) showed bilateral profound degree of sensorineural hearing loss. ABR (auditory brainstem response) and ASSR (auditory steady state response) showed bilateral profound degree of sensorineural hearing loss. She had never used hearing aids. There was no history of ear discharge. No significant perinatal or neonatal history was reported. Physical examination showed bilateral intact tympanic membranes. CT ear petrous bone without contrast was performed which showed Mondini malformation on right with abnormal cochlea having 1.5 turns; basal turn and a cystic apex with enlarged vestibule. Horizontal semicircular canal was normal, however, superior and posterior semicircular canals were fused to form a single semicircular canal. Endolymphatic sac was dilated. There was Michael deformity/complete labyrinthine aplasia on left with complete absence of inner ear structures including cochlea, semicircular canals, vestibular and cochlear aqueducts. MRI ear/internal auditory meatus without contrast was performed which showed Mondini malformation on right with normal seventh eighth cranial nerve complex. There was Michael deformity on left with non-visualization of cochlea, vestibule and semicircular canals. Left internal auditory canal was small and hypoplastic. Vestibulocochlear nerve complex was also small. Bilateral cochlear implantation was done and patient was discharged. Thus, it is a very rare till date in which simultaneous presentation of both Mondini and Michael malformations were seen in a single patient.

P-51

Emerging from the shadows: Pictorial review of hydatid disease

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OBJECTIVE: The objective of this article is to present imaging findings in hydatid disease, which will eventually help in imaging based diagnosis. Hydatid

cysts are caused by infection with the *Echinococcus* tapeworm species and can occur in any part of the body.

STUDY DESIGN: Retrospective study

PLACE AND DURATION OF STUDY: Radiology department, Shifa International Hospital, from 2020 to 2023.

METHODOLOGY: Retrospectively patients diagnosed with hydatid disease were selected. Their scans were performed and reviewed at CT and MRI machines of Shifa International Hospital. CT scan was performed on Toshiba 640 slices, Siemens 128 slices and Siemens 16 slices, and MRI was performed on Siemens 3 tesla, Toshiba-titan 1.5 tesla and Hitachi 0.4 tesla. USG were performed on Aplio etc. The literature review was also done to identify different organ system involvement of this disease.

RESULT: Different organ system involvement by this disease and imaging features of them are reported.

CONCLUSION: It comprises a wide variety of radiological imaging findings. Recognition of diverse organ manifestations on imaging is required for appropriate diagnosis and is useful in therapy planning.

P-52

Endometrioma in rectus abdominis muscle: A rare case of extra pelvic endometriosis

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The incidence of abdominal wall endometriosis is very rare and is seen in the patients with the history of prior cesarean and pelvic surgeries. We report a case of 34 years old female patient who presented with cyclical upper abdominal pain.

She had a prior history of two cesarean deliveries. Serial multiple imaging investigations including ultrasound, CT scan and MRI abdomen suggested endometriotic deposit in rectus abdominis muscle. It was confirmed on subsequent excisional biopsy and histopathology.

This case report highlights the pivotal role of radiological imaging in identifying the rare occurrence of extrapelvic endometriosis in rectus abdominis muscle and imaging appearance on different modalities.

P-53

Sinistral portal hypertension: Presentation, radiological findings and treatment options: A case report

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INTRODUCTION: SPH, also known as sinistral or left-sided portal hypertension, is an uncommon condition. It develops as a result of an isolated splenic vein blockage which causes increased splenic bed venous pressure and gastric varices occur. It is usually an adverse effect of a pancreatic disease. Its two main clinical symptoms are hypersplenism and gastrointestinal variceal haemorrhage. Patients typically report with pancreatitis-like symptoms, prompting a CT scan that reveals the SPH.

CASE PRESENTATION: Here we discuss a case of a 42-year-old female with known diabetes mellitus presented in ER with complain of severe epigastric pain radiating to her back. Initially pancreatitis was suspected, and a CT scan of the abdomen was performed, showing SPH.

CONCLUSION: To distinguish it from generalised portal hypertension is

crucial because of its distinct treatment options than generalised portal hypertension. The primary goal of this study is to illustrate the CT imaging characteristics of SPH and its clinical aspects.

P-54

Magnetic resonance spectroscopy case series in intracranial oncological diagnosis

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OBJECTIVES: Magnetic resonance spectroscopy (MRS) is a valuable tool for evaluating brain metabolism, neurotransmitters and detection of pathologies like tumors, strokes and neurodegenerative diseases. Our presentation aims to study how the MRS spectra of the metabolite peaks help in the non-invasive identification of different brain lesions and hence impart a significant role in clinical diagnosis.

MATERIALS AND METHODS: We included 7 patients in our study with biopsy proven hemangiopericytoma, typical meningioma, atypical meningioma, central nervous system (CNS) lymphoma, glioma, and metastasis. The patients underwent the magnetic resonance imaging (MRI) brain with contrast according to departmental protocols followed by placement of multivoxel MRS over the enhancing solid component of the lesion to obtain metabolite peaks with echo time at 144 ms, voxel thickness of 15 mm, frequency field-of-view (FOV) 24 mm, and slice thickness of 20 mm in axial plane.

RESULTS: The metabolite peaks obtained for the lesions were as follows: Myoinositol peak (mI) in hemangiopericytoma, alanine peak in typical and atypical meningioma, lipid lactate in CNS lymphoma, elevated choline peak and diminished NAA peaks in gliomas, elevated choline with depleted intratumoral creatine peaks in case of metastasis.

The peritumoral tissue returning signal of vasogenic edema in patient with high grade glioma showed a choline peak in contradistinction to peritumoral tissue of metastasis which did not show a choline peak indicative of infiltrative nature of the disease process of gliomas. The patients with typical and atypical meningioma also had concurrent esophageal and breast malignancies respectively hence MRS was able to play an important role in differentiation from metastasis.

CONCLUSION: MRS is a problem solving modality for differentiation and characterization of mitotic intracranial pathologies. Our poster aims to provide a bird's eye view of the spectroscopic appearance of above mentioned intracranial lesions in a comprehensive fashion.

P-55

Granulomatous intrigue: Navigating the mediastinal maze

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TEACHING POINTS:

- Mediastinal granuloma is a chronic inflammatory disease involving the mediastinum with enlarged lymph nodes secondary to non-caseating granulomatous inflammation.
- Mediastinal granuloma is a rare cause of dysphagia hence imaging of the mediastinal structures is essential in individuals where no motility disorder or obstructive cause arising from mucosa is identified.
- The causes may be attributable to tuberculosis, parasitic or fungal infections. It can also develop prior to, during, or several months after diagnosis of or treatment of malignancy.
- The mediastinal granulomatous inflammation seen in patients of cancer is known as sarcoid-type reaction or sarcoid-cancer syndrome. This type of

inflammation occurs in response to primary tumor itself, due to ongoing treatment of the cancer or as a consequence of foreign body response secondary to iatrogenic intervention.

- Sarcoid-cancer syndrome is an autoinflammatory cause of mediastinal and hilar lymphadenopathy. Serum ACE levels are not necessarily elevated in this condition.
- Malignancies associated with development of sarcoid-cancer syndrome include lymphoma and carcinomas of breast, stomach, colon or lung.

CASE REPORT: A 20 years male treated for carcinoma colon 6 months ago complained of dysphagia since 2 months, initially for solids but later progressing to difficulty swallowing liquids as well. Esophageal manometry was unremarkable and esophagoscopy confirmed no mucosal lesion. Contrast enhanced computed tomography demonstrated infiltrative soft tissue density nodal mass in mediastinum encasing the tracheobronchial tree, major vasculature and esophagus with superior extension up to right supraclavicular fossa. Significant mass effect on esophagus was resulting in severe luminal compromise and likely was the attributable cause of dysphagia. Ultrasound guided biopsy of supraclavicular fossa mass was subsequently performed that revealed non-caseating giant cell granulomas with diagnosis of sarcoid-like reaction as a sequela to previous chemotherapy. The patient is at present ongoing steroid therapy and doing well on follow-up.

P-56

Where compression meets constriction: Coexistence of superior mesenteric artery syndrome and nutcracker syndrome - A case report

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Superior mesenteric artery syndrome (SMAS) and nutcracker syndrome (NS) are rare abdominal vascular conditions. SMAS involves duodenal compression by the superior mesenteric artery, resulting in gastrointestinal symptoms, while NS results from left renal vein constriction between the aorta and superior mesenteric artery, leading to renal and systemic symptoms. The coexistence of SMAS and NS in a single patient is exceptionally rare, posing intricate diagnostic and therapeutic challenges. Understanding this coexistence, its clinical implications, and optimal management remains underexplored in medical literature. This case highlights the unique intersection of these syndromes, offering insights for recognition and treatment.

We present a case of 24 years old male who presented with pain in epigastrium and off with post prandial exacerbation. There was history of weight loss as well. CT scan abdomen and pelvis with contrast showed significant loss of fat around third part of duodenum with severely reduced aortomesenteric distance and aortomesenteric angle. Also there was severe stenosis of the left renal vein between aorta and SMA with dilatation of the pre-stenotic proximal part and highly raised compression ratio. Findings were suggestive of SMA compression disorder with Nutcracker syndrome.

The coexistence of superior mesenteric artery syndrome and Nutcracker syndrome presents an exceptionally rare clinical scenario. This case underscores the need for heightened awareness among radiologists to consider the possibility of dual vascular syndromes in complex abdominal presentations. Early recognition and interdisciplinary collaboration are crucial for optimizing diagnostic accuracy and guiding tailored management strategies, ultimately improving patient outcomes.

P-57

Intriguing insights into mediastinal epithelial hemangioendothelioma: A rare vascular challenge in the thoracic cavity

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Epithelioid hemangioendothelioma (EHE) represents a rare vascular tumor with a predilection for soft tissue and various organs, including the lung, bone, liver, and skin. However, its occurrence within the mediastinal region is exceedingly uncommon, with fewer than 25 documented cases in the medical literature. While EHE can manifest at any age, it predominantly afflicts adults. Clinically, it resides in an intermediate niche within the spectrum of vascular neoplasms, bridging the gap between benign hemangiomas and highly aggressive angiosarcomas.

In this report, we present a rare case involving a 54-year-old female patient who presented with generalized weakness and chest discomfort persisting over several months. A contrast-enhanced CT scan of the chest unveiled a large, well-demarcated, heterogeneous anterior mediastinal mass exhibiting internal mixed density and nodular areas of intense enhancement. Anatomically, it was abutting the ascending aorta and superior vena cava medially, while anteriorly, it was in close proximity to the right second, third, and fourth ribs, as well as the intercostal muscles. Posteriorly, close approximation with the right pulmonary artery was noted. Subsequent ultrasound-guided core biopsy of this mass revealed a rare malignant vascular neoplasm comprising epithelioid endothelial cells set against a background of myxohyalinestroma. Morphological and immunohistochemical analyses were in concordance with the diagnosis of epithelioid hemangioendothelioma.

This case report provides a comprehensive delineation of the radiological and pathological characteristics intrinsic to EHE. Such insights are pivotal for facilitating accurate and timely diagnoses, as this entity poses diagnostic challenges due to its rarity and atypical histologic appearance.

P-58

The vanishing act: Reversible splenic lesion syndrome (RESLES) in a case of mild encephalitis with isolated splenium of corpus callosum involvement; A case report

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Reversible isolated lesions characterized by transiently reduced diffusion in the splenium of the corpus callosum (SCC) have been associated with a diverse range of diseases and clinical conditions, with notable prevalence in patients presenting with encephalitis, encephalopathy, and those receiving antiepileptic drugs (AED). This intriguing radiological phenomenon has been identified as a distinct clinical and radiological entity known as "Reversible splenic lesion syndrome" (RESLES).

In this report, we present a case of a 24-year-old male who presented with a one-week history of high-grade fever and headache. Initial MRI with contrast revealed an area of restricted diffusion within the splenium of corpus callosum, devoid of post-contrast enhancement which was reported as infarct. Subsequent CT carotid angiography, performed two days later, detected subtle accentuated hypodensity within the SCC, corresponding to the previously observed restricted diffusion on MRI. Follow-up MRI performed one month later exhibited bright signals on diffusion-weighted imaging (DWI) in bifrontal parasagittal cortices, concomitant with high T2/FLAIR signal intensity, raising concerns of encephalitis. Remarkably, no abnormal signal was noted within the splenium of the corpus callosum, signifying a transient course of this distinctive lesion.

This case underscores the versatility of reversible splenic lesions with restricted diffusion manifesting across a spectrum of diseases and conditions. Importantly,

the neurological prognosis for patients with isolated SCC lesions remains favorable. A thorough understanding of these MR imaging findings is imperative for both radiologists and clinicians, as it can mitigate diagnostic challenges, obviate unnecessary invasive interventions, and guide appropriate therapeutic measures in a timely fashion.

P-59

Beneath the surface of Leigh syndrome: A case report

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Leigh syndrome, an uncommon progressive neurodegenerative mitochondrial disorder of childhood, exhibits an estimated prevalence of 2.05 cases per 100,000 individuals. Clinical presentation varies but typically manifests as a progressive neurological ailment associated with motor and intellectual developmental regression. Distinctive radiological features involve symmetric lesions in the basal ganglia and brainstem, as evident by MRI. A swift decline in cognitive and motor functions characterizes its clinical course.

We present a case of a 1-year and 8-month-old female with history of developmental regression. Neuroimaging via MRI with contrast revealed T2/FLAIR bright signal anomalies in bilateral lentiform nuclei, brainstem corticospinal tracts, cerebellar peduncles, and cerebellar white matter. Subsequent CT scan showed bilateral symmetrical hypodensities in these regions. Genetic analysis confirmed the presence of SURF1 gene positivity, conclusively establishing the diagnosis.

Leigh syndrome's rarity often results in delayed or missed diagnoses. This case report contributes significantly to the expanding realm of clinical knowledge concerning this disorder. It emphasizes the imperative of early recognition, timely genetic assessment, and underscores the pivotal role of comprehensive case documentation. These facets collectively enhance patient care, ultimately elevating the quality of life for individuals grappling with Leigh syndrome.

P-60

Beyond the nodes: A pictorial journey through extra-nodal lymphoma

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BACKGROUND: In the realm of oncology, extranodal lymphomas continue to pose diagnostic and therapeutic challenges due to their diverse anatomical locations and variable presentations. This pictorial review aims to provide a visual compendium of imaging findings, offering valuable insights into the radiological nuances of extranodal lymphoma across different organ systems.

OBJECTIVE: To illustrate and elucidate the varied imaging features of extra-nodal lymphoma across diverse anatomical sites, aiding in its recognition and characterization for improved clinical management.

STUDY DESIGN: Retrospective study

PLACE AND DURATION OF STUDY: Radiology department, Shifa International Hospital, from 2020 to 2023.

METHODOLOGY: Retrospectively patients diagnosed with known lymphoma were selected. Their scans were performed and reviewed at CT machines of Shifa International Hospital. CT scan was performed on Toshiba 640 slices, Siemens 128 slices and Siemens 16 slices. The literature review was also done to identify different organ system involvement of this disease.

RESULT: Different organ system (CNS, gastric, lung, liver, spleen, renal,

skin, testis, breast, appendix and osseous) involvement by this disease and imaging features of them are reported.

CONCLUSION: Extra-nodal involvement of lymphoma is frequently seen and comprises of an array of radiological imaging results. The ability to recognize various organ manifestations on imaging is necessary for accurate diagnosis and is important in therapeutic planning.

P-61

The role of cardiac magnetic resonance imaging in diagnosis of cardiac sarcoidosis

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INTRODUCTION: Sarcoidosis is a chronic inflammatory disease characterized by the formation of non-caseating granulomas in various organs, including the heart. Cardiac involvement in sarcoidosis can result in serious complications such as heart block, arrhythmias and cardiomyopathy. CMR is a powerful noninvasive imaging modality which produces images with excellent spatial, soft tissue, and temporal resolution. Late gadolinium enhancement (LGE) images indicates myocardial damage, scarring, and fibrosis resulting from previous inflammatory processes. CMR can be used to guide myocardial biopsy and improve its sensitivity and in certain cases may obviate the need for biopsy completely.

OBJECTIVE: Diagnosing cardiac sarcoidosis can be challenging due to its diverse and often nonspecific clinical manifestations. Traditional diagnostic methods, like echocardiography, may not be sensitive enough to detect the disease accurately. Advanced cardiac imaging modalities such as MRI play a crucial role in the diagnosis, risk assessment, and management of patients with cardiac sarcoidosis. Cardiac MRI offers detailed images of the heart's structure and function, aiding in the detection of abnormalities caused by sarcoidosis.

METHOD: 4 patients with clinical suspicion of cardiac sarcoidosis were evaluated with cardiac MRI. Most important sequence for diagnosing cardiac sarcoidosis is late gadolinium enhancement images (LGE).

RESULTS: 3 out of 4 patients showed typical mid myocardial enhancement I where as 1 of them showed mid myocardial to epicardial enhancement. LGE's significance lies in its ability to highlight areas of scar tissue and fibrosis within the heart muscle.

CONCLUSION: This research highlights the significance of using advanced cardiac imaging tools to evaluate and manage patients suspected or confirmed to have cardiac sarcoidosis.

P-62

A rare case of duplicated lower genitourinary organs, sigmoid colon, rectum and anal canal mimicking caudal duplication syndrome without a sacrocoxygeal defect

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We present here a case of 25 years old nulliparous adult female whose initial presentation was of urinating from two separate orifices. She had a history of recurrent urinary tract infections in the past. Her gynecological examination showed two vaginal and urethral orifices along with two anal canals which prompted for a detailed CT and MRI workup of the pelvis and its organs suspecting caudal duplication syndrome. Imaging revealed that she had complete duplication of the urinary bladder, urethra, rectum and sigmoid

colons, uterus didelphys with separate cervixes and vaginal canals. All of these were in keeping with caudal duplication syndrome; however, the patient did not have an obvious external deformity at the sacrococcygeal region nor does the imaging revealed so. She had an unremarkable sacrum and coccyx.

P-63

A rare case of planum sphenoidale meningioma presented as an orbital mass

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We present here a case of 23 years old female, who initially presented with headache. Her routine clinical and laboratory examinations were normal. Later on, she developed some visual impairment in her left eye. Ophthalmological examination was carried out which came back negative. She underwent CT scan brain at the department of radiology Hayatabad medical complex which revealed a small hyperdense lesion at the left orbital apex obscuring the underlying orbital nerve in that region. For assessment of the orbital nerve MRI brain and orbit were carried out. There it was evident that a mass was arising from the planum sphenoidale extending into the left orbital apex, later on diagnosed as a planum sphenoidale meningioma.

P-64

A rare to date primary cardiac malignancy: Spindle cell sarcoma; A case report

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A middle-aged man with suspected atrial myxoma presented with worsening short of breath and fever. Echocardiography showed pericardial effusion and had to undergo pericardiocentesis for symptomatic stability. Subsequent multimodality imaging and further validation by histopathology report, established a unique but an accurate diagnosis of left atrial spindle cell sarcoma of heart. This along with other primary cardiac tumors are often missed and present late with advanced disease due to non-specificity of symptoms and extreme rarity. Better understanding of the disease and diagnosing it at its earliest is essential to the management.

P-65

A novel case of Klippel Feil syndrome with multimodality characteristics and diagnosis

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Klippel Feil syndrome (KFS) is novel congenital abnormality, characterized by osseous and visceral abnormalities, with typical clinical triad of short neck, torticollis and low posterior hairline. Upto 30% of cases KFS is associated with Sprengel deformity. Other congenital lesions like renal disease, hearing difficulty, facial asymmetry, cardiac abnormalities can also be associated. KFS is divided into three types: Type 1 is fusion of cervical vertebrae; Type 2 includes fusion of cervical and thoracic vertebrae ± cervical hemi vertebrae and atlantoaxial joint fusion with the occiput. Type 3 is fusion of cervical, thoracic, or lumbar vertebrae ± rib anomalies. Clinical examination, cervico-thoracic flexion/extension radiographs, ultrasound, CT and MRI are used to diagnose KFS. No definitive treatment exists. Symptomatic treatment is given. Surgical correction of Sprengel deformity may be performed for cosmesis.

We are presenting a case report highlighting the uncommon but clinically

significant presentation. An adolescent male came to us with active complaints of neck pain. On examination, clinical triad of lower posterior hairline, torticollis and high riding right scapula was seen. X-ray cervical spine was done which showed blocked cervical vertebrae and fusion of spinous processes, associated with high riding right scapula and a dense ossified omovertebral band seen connecting the superomedial border of right scapula with transverse process of C7 vertebra. For neuronal assessment, MRI cervico-dorsal spine was done that revealed multiple blocked cervical vertebrae (C2+ C3, C3+C4 and C5+C6) with partially obliterated intervertebral discs. CT sections also showed consistent findings with deficient laminae of C3, C5 and C6 vertebrae indicating spina bifida. No evidence of meningocele/meningomyelocele seen. The patient was referred back to his physician for further management. Our poster calls attention to significance of screening KFS in young children presented with these above mentioned clinical features.

P-66

'An unusual cause to painful foot; calcaneocuboid synostosis'

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Among the causes of painful foot, tarsal coalition is the cause with lesser incidence of 1%. Patients are mostly asymptomatic and go undetected but, in some cases, cause rigid painful flatfoot effecting quality of life. Calcaneonavicular and talocalcaneal coalitions are among the commonest of the varieties with other types being very rare. Our is the case of a rare type of unilateral isolated osseous coalition involving calcaneum and cuboid causing symptoms to the patient even during routine walk. Coalition is classified according to osseous, cartilaginous and fibrous nature. Treatment spectrum range from conservative to surgical.

P-67

Buried bumper syndrome; A rare complication of PEG tube insertion with acute presentation

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BACKGROUND: Buried bumper syndrome (BBS) is one of the rare complications of percutaneous endoscopic gastrostomy (PEG) tube insertion and occurs in 0.3% to 2.5% of the cases. It develops when the internal bumper migrates through the gastric wall, lodging anywhere along the gastrostomy tract leading to overgrowth of gastric mucosa thereby encasing the tube. It can lead to perforation, bleeding, peritonitis and intra-abdominal sepsis if not removed or treated. It is generally considered a delayed complication typically occurring between 2 months up to 7 years post-PEG insertion and there is paucity of literature which shows acute presentation of BBS.

CASE PRESENTATION: A 59 years old female with newly diagnosed nasopharyngeal carcinoma, on chemo and radiotherapy, developed difficulty swallowing for which she underwent PEG tube insertion and was discharged. She had complaint of abdominal discomfort after every PEG feed which gradually increased in intensity. One week after PEG tube placement she presented to emergency department of Shifa International Hospital with blockage of PEG tube, purulent discharge from surrounding area and erythema. CT scan abdomen and pelvis was performed which showed migration of bumper of PEG which was seen in anterior subcutaneous tissue with formation of a fistulous air tract between antrum and subcutaneous tissue of anterior abdominal wall. There were extensive air locules with stranding in anterior and lateral abdominal wall. No localized walled off collection was noted. There was no evidence of pneumoperitoneum. Her PEG tube was removed on same day in ER and she was admitted to floor for further management. Culture sensitivity report of her pus swab showed moderate growth of candida

tropicalis, pseudomonas aeruginosa and klebsiella pneumonia. She was given antibiotics and antifungals. 4 days later, her PEG site debridement and gastric repair was done. Patient tolerated the procedure well.

CONCLUSION: BBS is a rare late complication of PEG tube insertion, acute presentation is even rarer manifestation of this complication. It is important to consider it in the differential diagnosis of an apparently infected PEG site. Prompt removal of the PEG tube is indicated to prevent further complications.

P-68

An audit of stat reports of emergency and ipd cases by residents during on call hours

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BACKGROUND: Shifa international hospital is a quaternary care facility with 550 beds providing quality care to local as well as international patients for the last 50 years. Department of Radiology house the latest equipment and technologies under the supervision of an experienced and qualified team consisting of neuro, interventional and diagnostic radiologists as well as ultrasound physicians and technical staff. During the official timings from 9 am to 5 pm residents work under direct supervision of respective consultants and report emergency, OPD and IPD cases. And after that, during on call hours, after proper training, DOPS (direct observation of procedural skills), stat sessions and approval of privileges from PGMI (post graduate medical Institute), residents are allowed to put stat reports of emergency, IPD and OPD patients with critical findings. An on call consultant radiologist supervises them during these hours. Our on call team consists of three residents: senior most, junior 1 and junior 2 to put stat reports of MRI, CT and radiographs respectively and convey the critical findings to primary team with documentation on RIS (radiology information system). On the next day their reports are verified by the consultant radiologists. Discrepancies between stat report and final verified report will be highlighted in this audit quantitatively.

OBJECTIVE: An audit to see whether the stat reports by residents during on call hours are concordant or discordant with the final verified reports by the consultant radiologist and were the critical findings highlighted.

METHODS: Percentage of discordant or concordant reports in the form of bar charts and commination to proper team on proper time in the form of pie chart. A random sample of 100 CT scans (abdomen, chest, brain), 100 MRIs (brain, spine) and 200 radiographs (Chest, MSK, abdominal) performed in 2022 collected from RIS was analyzed. A number of different days were selected to ensure a range of scans at different times of day, on different days of the week were sampled. Target: 90% accuracy of stat report. 100% adherence to set policy of department for communication.

RESULTS:

CT:

Among 100 CT scan reports, 91% were concordant and only 9% were discordant.

Among critical findings, 38% were highlighted and 62% were not.

MRI:

Among 100 reports, 85% were concordant and only 15% were discordant.

Among critical findings, 20% were highlighted and 80% were not.

Radiographs:

Among 100 reports, 95% were concordant and only 5% were discordant. Among critical findings, 10% were highlighted and 90% were not.

Target for accuracy of the stat reports was almost met for MRI, CT and radiographs. However, target for highlighting the critical findings were not met. Although stat reports are followed by emergency team and IPD and findings were conveyed to them via these reports, highlighting the critical values is an important practice, to filter them out so that they can be verified timely by the morning radiologist.

Reaudit

Results were discussed in the departmental meeting and a reaudit after 3 months showed that 99 % of the critical values were highlighted for MRI, 96% for CT and 100 for radiographs.

P-69

Spindle cell carcinoma of breast; A case report

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Spindle cell carcinoma of the breast is a rare and clinically challenging subtype of breast cancer. Comprising a small proportion of all breast cancers, it is characterized by the presence of elongated, spindle-shaped cells in the tumor tissue. This histological variant often poses diagnostic difficulties due to its resemblance to benign lesions, such as fibromatosis or phyllodes tumors. Additionally, spindle cell carcinoma may exhibit an aggressive clinical behavior with a higher propensity for local recurrence and distant metastasis. This case report sheds light on a specific instance of spindle cell carcinoma of the breast, emphasizing the clinical presentation, diagnostic approach, treatment strategies, and patient outcomes, thereby contributing to our understanding of this uncommon breast malignancy.

A 71-year-old postmenopausal female, with a positive family history of breast carcinoma, presented with a palpable lump in her right breast. Initial imaging via mammography revealed a high-density lesion located in the retroareolar region of the right breast's inner quadrant. This lesion exhibited irregular and speculated margins, accompanied by adjacent architectural distortion, skin thickening, and nipple retraction. Subsequent ultrasonography (USG) depicted an ill-defined, predominantly hypoechoic lesion located at the 3 o'clock position. Biopsy results confirmed the presence of a spindle cell neoplasm. Staging CT scan findings indicated the presence of a large, lobular, necrotic mass situated in the upper inner quadrant of the right breast, closely associated with the nipple-areolar complex, which exhibited retraction. Additionally, the lesion was accompanied by overlying skin thickening and extensive architectural distortion in the surrounding breast tissue. Notably, the CT scan did not reveal any evidence of metastasis.

This case report underscores the diagnostic and clinical challenges associated with spindle cell carcinoma in the breast. A comprehensive approach, including accurate imaging, biopsy, and multidisciplinary management, is essential to address this rare and potentially aggressive malignancy effectively.

P-70

Analysis of pertinent cardiac findings on non-ECG gated CT chest

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OBJECTIVE: Within the recent few decades, the utilization of chest computer tomography (CT) has massively increased as an imaging modality, for diagnosing chest related pathologies. There is often overlap of cardiac and pulmonary symptoms, however cardiac findings are often overlooked by interpreting radiologists during routine chest CT scans owing to inherent heart motion artifact and predominantly pulmonary indications. With evolution in multi-detector CT technology, it has become a lot easier for detection of cardiac findings on contrast or non-contrast enhanced CT chest without ECG gating. The purpose of our study is to bring into attention the wide range of cardiac findings detected on non-gated CT chest which helps in better explanation of pulmonary symptoms which are sometimes related to ongoing cardiac diseases.

METHOD: Patient who had undergone contrast or non-contrast enhanced CT chest for cardio pulmonary findings, were evaluated retrospectively from the radiology database of Shifa international hospital between the past years of 2015 to 2023 and presented in the form of pictorial review.

RESULT: A wide variety of cardiac findings, ranging from benign conditions to life threatening discoveries have been found in a number of cases and often help in explaining the presenting complaints. Commonly encountered cardiac findings are pericardial effusion, constructive pericarditis, coronary artery

calcifications, myocardial infarctions, cardiomyopathies, valvular calcifications, cardiac/pericardial tumors or tumor like lesions and congenital cardiac abnormalities.

CONCLUSION: Knowledge and acquaintance to imaging appearances of such cardiac findings is essential among radiologists for better understanding of symptoms and help in compiling comprehensive diagnosis.

P-71

Lets us look at astronomy through the eyes of a radiologist

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OBJECTIVE: The objective of this article is to present astronomical inspired signs seen in radiology, which will eventually help in imaging based diagnosis.

STUDY DESIGN: Retrospective study

PLACE AND DURATION OF STUDY: Radiology department, Shifa International Hospital, from 2020 to 2023.

METHODOLOGY: We compiled all the cases with interesting astronomical signs manifested on various radiological modalities including radiograph, ultrasound and CT.

- Comet tail artifact seen on grey scale ultrasound is noted in gallbladder adenomyomatosis and thyroid colloid cyst.
- Comet tail artifact seen on colour Doppler ultrasound is noted in renal/ureteric calculus.
- Comet tail sign seen on CT chest is noted in round atelectasis.
- Galaxy sign seen on CT chest is noted in sarcoidosis or pulmonary TB.
- Loss of half-moon sign seen on shoulder radiograph is noted in posterior shoulder dislocation.
- Starry sky appearance seen on grey scale ultrasound is noted in acute hepatitis.
- Starry sky appearance seen on MR is noted in multiple biliary hamartomas.
- Sunburst appearance seen on radiograph is noted in osteosarcoma.
- Sunburst sign seen on MR brain is noted in meningioma.
- Sunburst sign seen on DSA is noted in renal angiomyolipoma.
- Sunset eye sign seen on CT brain in obstructive hydrocephalus.
- Twinkling artifact seen on colour Doppler ultrasound is noted in calculi.
- Earth heart sign seen on radiograph chest is noted in tension pneumomediastinum.
- Milky sign seen on MR brain is noted in multifocal leukoencephalopathy.
- Star-field pattern seen on MR brain is noted in fat embolism.

RESULT: Imaging features in various modalities of aforementioned diseases are explained narrowing down the differentials.

CONCLUSION: Understanding of these clearly discernible astronomy-based signs is crucial since it aids in cutting down the lengthy range of differentials and also aids in imaging-based diagnosis.

P-72

Dyke-Davidoff-Masson syndrome: Adult presentation

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OBJECTIVE:

- To describe the clinical presentation, imaging & EEG findings, and management in Dyke-Davidoff-Masson syndrome.
- Prognosis is poor in cases of prolonged or recurrent seizures and if hemiparesis occurs before two years of age. That's why it is very important

for neurologists, paediatricians, and radiologists to be familiar with this condition for its early diagnosis and treatment.

INTRODUCTION: Dyke-Davidoff-Masson syndrome (DDMS) is a rare neurological disease which is clinically characterized by seizures, facial asymmetry due to facial nerve palsy, contralateral hemiparesis and mental retardation. Characteristics radiological findings include cerebral hemiatrophy or hypoplasia, calvarial thickening, and hyperpneumatization of the frontal sinuses. Adult presentation of DDMS is unusual and has been rarely reported in the medical literature.

CASE PRESENTATION: We present a case of 23 years old female who presented with partial epilepsy, headache and vertigo. She has past history of right upper limb jerking movements since the age of 5 years.

MRI Brain with contrast performed which showed left cerebral hemiatrophy with encephalomalacia and gliotic changes predominantly involving the frontoparietal and occipital lobes with exvacuodilatation of the left lateral ventricle without any associated abnormal enhancement however focal area of signal loss in left parietal lobe suggests calcification. There was also asymmetrically prominent left frontal sinus and minimally prominent left sided conveyor bones as compared to right.

CONCLUSION: Majority of cases presenting in early childhood with refractory seizures remain the main concern. Accordingly, hemispherectomy is the treatment of choice with a success rate of 85% in selected cases. In case of late presentation as in our case, patient can be kept on antiepileptic medications along with supportive therapy including physiotherapy, speech therapy, and occupational therapy.

P-73

Angioinvasive rhino-orbito-cerebral mucormycosis: A pictorial analysis

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INTRODUCTION: Mucormycosis is a disastrous and destructive disorder. It is a fungal infection that is most common in the paranasal sinuses, but due to its invasiveness, it spreads quickly to neighboring important tissues. Cavernous sinus is the clinically most significant dural venous sinus, containing key neuro vasculatures and serving as a vital route for infection transmission from paranasal sinuses to critical tissues such as the brain and orbit.

OBJECTIVES: To review and aim to acquaint the reader with the cross-sectional imaging appearances of rhino-orbito-cerebral mucormycosis and its complications involving its spread along the course of vessels focusing on involvement of cavernous sinus.

MATERIAL AND METHODS: Patients who had the evidence of cerebral angioinvasiveness of mucormycosis on MRI and CT were chosen retrospectively from the radiology database between 2015 and 2023, with a specific emphasis on instances involving the cavernous sinus. Disease spread was observed following these channels to intracranial and orbital tissues. Intracranial complications like meningitis, cerebritis, and abscess development were also detected as a result of disease spread.

IMPLICATIONS: The emphasis of this study is to demonstrate the rapid and invasive development of mucormycosis to key organs, with blockage of arterial and venous structures endangering the patient's life, and the need of early identification and care in preventing its disastrous repercussions. Imaging plays vital role not only in early diagnosis but also aid in defining the extent of the disease for pre surgical mapping.

P-74**Exploring diagnostic echoes: Doppler ultrasound performance in plaque detection against CT as gold standard**

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BACKGROUND: The accurate detection of carotid artery plaques is pivotal in assessing and managing cardiovascular risk. While carotid Doppler ultrasound is a common diagnostic tool, its diagnostic accuracy in plaque identification compared to the gold standard, computed tomography (CT), remains an essential research focus.

OBJECTIVE: To evaluate the diagnostic performance of carotid Doppler ultrasound against CT gold standard.

STUDY DESIGN: Retrospective study

PLACE AND DURATION OF STUDY: Radiology department, Shifa International Hospital, from 2013 to 2022.

METHODOLOGY: A retrospective descriptive study was conducted at Radiology department, Shifa International Hospital where 100 participants, 50 with calcified plaques and 50 with non calcified plaques who had undergone Doppler carotid ultrasound followed by CT carotid angiogram were included applying non probability convenient sampling. Data was collected on structured proforma and was analysed using IBM SPSS version 23.

RESULT: In a study population of 100 patients, consisting of 6 young and 94 elderly individuals, with a gender distribution of 68 males and 32 females, and a prevalence of comorbid conditions (81 hypertension, 69 diabetes, 44 ischemic heart disease, 92 stroke history, and 63 dyslipidemia), ultrasonography (USG) Doppler exhibited notable diagnostic performance. For non-calcified plaques, it achieved an 88% sensitivity, 84% specificity, 84.6% positive predictive value, 87.5% negative predictive value, and an 86% diagnostic accuracy. For calcified plaques, USG Doppler demonstrated heightened performance, with a 92% sensitivity, 96% specificity, 95.8% positive predictive value, 92.3% negative predictive value, and a 94% diagnostic accuracy.

CONCLUSION: Our study demonstrates commendable sensitivity, specificity, and predictive values of doppler ultrasound for both non-calcified and calcified plaques. These findings underscore the utility of USG Doppler as a valuable diagnostic tool in the assessment of atherosclerotic plaques, offering promise for enhanced clinical management and risk stratification in a population with cost effectiveness and reduced radiation exposure in varying cardiovascular risk factors and disease states.

P-75**A new era in IIF renal lesion assessment: Bosniak 2005 vs. 2019**

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BACKGROUND: The accurate evaluation of indeterminate enhancing focal (IIF) renal lesions is pivotal in clinical practice. The Bosniak classification system, revised in 2019, has offered an advanced framework for this purpose. This study delves into the implications of the Bosniak 2019 classification, aiming to determine its impact on the assessment of IIF renal lesions. With a focus on progression and outcomes, shedding light on the diagnostic and management changes introduced by this updated classification system.

OBJECTIVE: To determine progression, outcomes and impact of Bosniak 2019 classification on IIF renal lesions.

STUDY DESIGN: Retrospective study

PLACE AND DURATION OF STUDY: Radiology department, Shifa International Hospital, from 2013 to 2022.

METHODOLOGY: 50 patients with IIF renal lesions according to Bosniak 2005 with at least 1 follow up were retrospectively identified and re-classified according to Bosniak 2019 while excluding those with no follow up study. The assessments of the lesions were performed by two radiologists, and any disparities in their evaluations were resolved by a third radiologist. The progression and clinical outcomes of these re-classified lesions were systematically recorded. Data analysis was done using IBM SPSS version 25.

RESULT: The study population exhibited a mean age of 63.4 years, ranging from 28 to 87 years. The average duration of follow-up was 9.7 months, with a median follow-up period of 6 months. Notably, 19 (38%) of the renal lesions were reclassified as Bosniak II under the 2019 classification criteria. Among the remaining 31 (62%) Bosniak IIF lesions, 28 (91%) demonstrated stability during the follow-up period. Additionally, 2 (6%) lesion exhibited an upgrade to Bosniak III, and another 1 (3%) progressed to Bosniak IV. Notably, only one mass was subjected to resection, and histopathological analysis confirmed its benign nature.

CONCLUSION: The Bosniak 2019 classification has markedly reshaped the categorization of IIF renal lesions, potentially reducing overdiagnosis and its associated burdens such as patient anxiety, economic costs, and radiation exposure. This study underscores the dynamic nature of lesion assessment, with substantial reclassifications and diverse clinical outcomes.

P-76**Incidental detection of persistent left superior vena cava during permcath insertion: A case report**

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Persistent left superior vena cava (PLSVC) is an uncommon congenital venous anomaly that is often diagnosed incidentally during procedures involving central venous access, such as pacemaker or permcath insertion. We present the case of a 60-year-old male with end-stage renal disease who had an incidental finding of PLSVC during permcath placement for hemodialysis. Recognition of this venous anomaly enabled successful procedural completion despite the unexpected anatomy. This case underscores the importance of considering congenital venous abnormalities as potential causes when technical difficulties arise during central catheterization procedures.

P-77**Extraosseous ewing sarcoma mimicking a schwannoma: MRI findings of a rare case**

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Ewing's sarcoma is among the most frequent yet highly aggressive neoplasm of the bones presenting in adolescents and children under the age of ten, with a slight male predilection. It is now broadly categorized into a set of tumors recognized as Ewing's sarcoma family based on the same histology and genotype of these tumors. This group of tumors includes Ewing's sarcoma of bones, the 2nd most frequent bone malignancy, Askin tumors, PNET and those rarely occurring Extra osseous Ewing sarcoma (peripheral neuro-epithelioma). Extra-osseous Ewing's is a rare presentation occurring in only 5% of patients. Here we present such a case of an extra-osseous Ewing's sarcoma in a 13-year-old female presenting to our hospital with a large mass in the sacral region. The interesting imaging findings and his histopathology are discussed.

P-78**Wandering spleen with torsion of pedicle and infarction: A rare case report**

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Ectopic spleen or wandering spleen is an uncommon presentation where the spleen's anatomical location is different from its fixed position in the left upper quadrant of the abdomen, due to the absence of the typical peritoneal attachments, the spleen is more mobile inside the abdomen. Congenital or acquired conditions are the cause of this anomaly, which could ultimately result in torsion and splenic infarction. Less than 0.2% of wandering spleen cases are reported annually, making it a rare clinical manifestation. Splenic vascular pedicle torsion can result in complications that can cause symptoms ranging from an accidental finding of an acute abdomen as a result of ischemic necrosis of spleen. Computed tomography scans are an essential component of accurate diagnosis due to the vague clinical signs and potential complications of wandering spleen. This case involves a 70-year-old elderly woman who complained of extreme abdominal pain and vomiting for three days. On physical examination a tense right lower quadrant lump was felt, when she visited the emergency room. An urgent CT scan was done for acute abdomen which confirmed torsion of the wandering spleen's pedicle.

P-79**A rare case of symptomatic Meckel diverticulum in an infant**

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Meckel's diverticulum (MD) is one of the most common congenital anomalies of the small intestine. A diverse range of clinical presentations, often becoming a challenge to diagnose. The majority of cases are incidentally discovered during evaluation for bleeding per rectum in childhood; some patients present with diverticulitis whereas others may present with obstruction. It results from incomplete obliteration of the vitellointestinal duct leading to the formation of a true diverticulum in the small intestine. This embryonic remnant is found in 2-4% of the general population. It accounts for 6% of all known congenital malformations. Only 10% of cases are confirmed to have the diagnosis pre-operatively and the rest are confirmed post operatively. Our patient was a 6 month old boy who presented with painless bleeding per rectum with a normal physical examination. He underwent a CT scan abdomen which showed meckel diverticulum. He underwent uneventful surgery and was discharged after an uneventful hospital stay.

P-80**Radiology audit revolution: A scientific approach to quality assurance**

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In the ever-evolving landscape of healthcare, the Radiology department plays a pivotal role in diagnosis and patient care. To ensure the highest quality and compliance standards, our institution is embarking on a transformative journey by introducing departmental audits in the Radiology department. Our talk delves into the rationale behind this initiative, the key objectives, the audit process, and the anticipated benefits. We will explore how departmental audits can enhance quality control, streamline operations, and promote a culture of continuous improvement in radiological services. This introduction of departmental audits represents a critical step towards maintaining excellence in patient care and radiology practice, making our department a benchmark for quality and compliance in healthcare.

Following audits have been started in our department

1. Bridging the health professional's literacy divide: Lessons learned from a REALMS audit
2. Acute stroke: CT reporting time in acute stroke
3. An audit to assess uniformity of reports for MRI rectal carcinoma among different radiologists in Shifa International Hospital
4. Departmental audit to assess adherence to ACR BIRADS on ultrasound breast
5. Audit trails in acute pancreatitis imaging: A road to improvement.
6. Analyzing discrepancies: An audit of ultrasonography findings in abnormal MRCP cases
7. Adherence and efficacy: A review of compliance with British Thoracic Society guidelines for CT follow up of indeterminate pulmonary nodules.
8. Evaluating compliance with European Society of Urogenital Radiology guidelines in ultrasound grading of varicoceles
9. Audit of stats reports of IPD and emergency cases by residents during on call hours- completed and to be presented in RSP
10. Generic reporting and effective communication in CT brain reports.

P-81**Correlating renal Doppler RI value with renal function on DTPA renal scan in unilateral obstructive uropathy**

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OBJECTIVE: To correlate renal function on diuretic DTPA renal scan with RI value on renal colour Doppler USG in unilateral obstructive uropathy

METHOD: Total 68 patients of unilateral obstructive uropathy were selected. Each patient underwent renal colour Doppler ultrasound to calculate RI values in each kidney, followed by DTPA renal scan. Time interval between DTPA renal scan and CT scan was 2-3 days.

RESULTS: Mean relative renal function of 24% was found in obstructed kidneys and 76% in non-obstructed kidneys. While mean RI value of 0.72 was found for obstructed kidneys and 0.54 mm for non-obstructed kidneys. Linear regression analysis comparing renal function to RI value in obstructed kidneys revealed a p-value <0.0001.

CONCLUSION: RI value on renal Doppler USG gives valuable information regarding renal function in obstructive uropathy, which is comparable to relative renal function calculated on DTPA renal scan.

P-82**"Imaging analysis of spectrum of vascular malformations in different locations within body"**

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Vascular malformations are a vast group of abnormalities that comprise of arteries, veins, capillaries, lymphatics or combination of them. Their diagnosis becomes important as they have significant clinical implications besides cosmetic concerns. The purpose of this study is to present through imaging varied spectrum of vascular malformations depending upon the locations within body with ultrasound, CT scan and MRI as modalities of imagining.

P-83**Rare case report of metastatic lung adenocarcinoma mimicking malignant pleural mesothelioma**

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OBJECTIVE: To describe imaging and histopathological features of primary lung adenocarcinoma resembling malignant mesothelioma.

INTRODUCTION: Lung cancer resembling malignant pleural mesothelioma is most frequently observed in patients with advance/metastatic primary lung adenocarcinoma which most commonly occur in the peripheral location. It is very challenging on the imaging to differentiate between these two entities; however comparison imaging is sometimes useful. Final diagnosis is made on tissue sampling and histopathological as well as immunohistochemistry analysis.

CASE PRESENTATION: We present a case of 74 years old male who presented with right-sided chest pain for last 1 month. Patient lost 3 kg weight in last 2 months. Patient was active smoker and had shortness of breath on exertion for last 2 years. Radiograph done from outside facility that showed irregular pleural thickening on the right side and right upper lobe opacity and bulky right hilum.

CT scan of chest abdomen and pelvis performed which showed extensive irregular, nodular, lobulated enhancing asymmetric pleural thickening in the right hemithorax with associated mild pleural effusion and multiple perifissural and pleural based nodules. There was also infiltration of the nodular pleural thickening along the right upper lobe peribronchovascular planes with peri bronchial thickening. Few subcentimetre sized non-specific left basal pleural-based/subpleural nodules also with mild pleural thickening in the left upper lobe, latter likely related with adjacent fibro-atelectatic changes. Multiple enlarged mediastinal and an enlarged right hilar node were also present. Changes of COPD were also observed.

CONCLUSION: It is very challenging on the imaging to differentiate between advance/metastatic primary lung adenocarcinoma and malignant pleural. Final diagnosis is made on tissue sampling and histopathological as well as immunohistochemistry analysis.

P-84**Shadowed nerves; unraveling the pancoast's web in brachial MRI**

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TEACHING POINTS:

- Pancoast tumor, also known as the superior sulcus pulmonary tumor, is a rare subtype of locally aggressive lung cancers affecting the lung apices, making up less than 5% of all lung neoplasms.^{1,2,3,4}
- Pancoast tumors lack typical symptoms of chest pain, cough and hemoptysis leading to delayed diagnosis and by the time of presentation have usually invaded surrounding structures including the blood vessels, brachial plexus and spinal nerves.^{4,5,6,7}
- MRI brachial plexus demonstrates the involvement of cords, trunks and roots. This advantage is important because involvement of upper brachial plexus is a contraindication to surgical resection.
- Our study aims at the use of magnetic resonance imaging (MRI) of the brachial plexus for accurate delineation of nerve involvement.

CASE REPORT: A 58 years old male presented to the medicine OPD with complaints of left sided brachialgia. On examination there was atrophy of left upper limb muscles with markedly reduced motor functions. Patient was referred to Radiology department. Radiograph chest revealed a radiodense opacity in the left lung apex with erosions of left first through third ribs as well as left half of C7, D1 through D3 vertebrae. CECT demonstrated left

lung soft tissue enhancing mass with internal cavitation causing destruction of the above mentioned ribs and vertebrae highly suspicious for Pancoast tumor with no metastatic lesion in contralateral lung and no mediastinal or hilar lymphadenopathy. Histopathology revealed it to be a squamous cell carcinoma. With regards to symptoms of muscle atrophy, MRI Brachial plexus was advised confirmed a cavitating, altered signal lesion at left lung apex involving left C7, C8 and T1 roots, all the trunks, cords and divisions of left sided brachial plexus determining the precise neural involvement. A pictorial review of the MRI brachial plexus findings will be displayed in the poster presentation.

P-85**Maxillary perivascular epithelioid cell tumor; A case report**

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Maxillary perivascular epithelioid cell tumors (PEComas) are exceptionally rare neoplasms located within the maxillary region. These tumors, composed of perivascular epithelioid cells expressing both smooth muscle and melanocytic markers, present unique diagnostic and therapeutic challenges due to their unusual location and limited clinical data. This case report focuses on the radiological aspects of maxillary PEComas, using computed tomography (CT) as a diagnostic modality. We present a detailed case study, emphasizing the role of CT imaging in the assessment of tumor characteristics and localization. This report underscores the value of radiological techniques in the management of these rare neoplasms and their contribution to improved clinical outcomes. A 20 years old male presented with complaint of nasal obstruction and swelling of right side of face. Computerized tomographic (CT) scan showed an intensely enhancing soft tissue mass expanding the nasal cavity with bone thinning and remodelling but no destruction extending into right pterygopalatine fossa with mass effect on the anterior wall of sphenoid sinus as well as bowing and extension into right ethmoid air cells. There is mass effect on the medial wall of right orbit without erosive changes or intraorbital extension. Biopsy was done which showed PEComa.

This case report highlights the significance of computed tomography (CT) imaging in the assessment of maxillary perivascular epithelioid cell tumors (PEComas). The detailed CT findings provided valuable insights into tumor characteristics and localization, aiding in the diagnostic process. The interdisciplinary approach to the management of this rare entity, including surgical intervention, was facilitated by precise CT imaging. This case emphasizes the essential role of radiological techniques in guiding clinical decisions and improving patient outcomes when dealing with challenging cases of maxillary PEComas.

P-86**MR defecogram - A case series**

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INTRODUCTION: Constipation is a major health issue and digestive complaint by many of patients irrespective of their age group. Additionally many of constipated patients have underlying associated descending perineum syndromes, obstructed defecation, difficulty in passing stool and complete evacuation. Recently MR defecogram emerged as an exciting modality considering its multiplanar capability, superior temporal resolution and excellent soft tissue contrast in evaluating pelvic organs and soft tissues supporting structures in addition to assessing the defecation process in dynamic way.

Normal anatomy of pelvic floor, lines and angles: The pelvic cavity contains urinary bladder, reproductive organs, rectum, pelvic muscles, ligaments and connective tissue keeping all of them in place. In females, the pelvis is divided

into anterior, middle and posterior compartments comprising of urinary bladder with urethra, uterus with cervix and vagina and rectum with anus while in males they are divided into anterior and posterior compartments with corresponding organs in them.

Pubococcygeal line (PCL): A line drawn from inferior border of pubic symphysis to the first sacro-coccygeal joint. It is a reference line drawn to assess the level of pelvic organs. Perpendicular distance between the inferior-most part of the corresponding organ and PCL is measured during rest and while full pelvic straining.

H line: Drawn from the inferior border of the pubic symphysis to the posterior wall of the rectum, marks the AP distance of the levator hiatus. Normal < 5 cm. 6-8 cm mild, 8-10cm moderate, >10 cm severe .

M line: Perpendicular line drawn from posterior most aspect of the H line till PCL, suggests ano-rectal descent at rest, if increased. Normal < 2 cm. 2-4 cm mild, 4-6cm, moderate, > 6 cm severe.

Ano-rectal angle: Angle between the posterior border of the distal rectum and central axis of the anal canal. Normal range: 108°-127° at rest.

Anterior rectal line: It is drawn along the expected margin of normal anorectal wall behind the posterior wall of vagina. Depth of wall protrusion beyond it during resting and straining is used to assess rectoceles.

Technique: Pre procedural evaluation, history and prior radiology report like barium enema, CT or MRI. Patients were given instructions about bowel preparation to take soft diet, Tab dulcolax overnight and nil per oral at least 4 hours before procedure. 300 ml of Ultrasound gel was installed into rectum. 04 Phase of imaging evaluation were made;

- 1)Rest
- 2)Squeeze
- 3)Strain (Valsalva)
- 4)Defecation/evacuation

Pathology: We carried out a retrospective case-series analysis of 06 patients presenting to Shifa international hospital Islamabad, Radiology department for imaging during Oct- January 2022-23 with complains of chronic constipation, painful defecation and incomplete evacuation. We present the data of 6 cases 2 male and 4 female patients. Out of these 01 patient show no abnormal pelvic visceral prolapse or dysfunction. 1 patient show only mild rectocele. 01 patient show grade 2 rectocele and cystocele. 01 patient show anismus/ dyssynergic defecation. 01 Patient show mild rectal prolapsed and minimal rectocele. 01 patient show mild degree of rectal prolapse.

CONCLUSION: MR defecography is essential in the work up of patients complaining of ano-rectal dysfunction by providing valuable information to the physician aiming for proper management decreasing both complications and recurrence. This is not still in common practice, our study will help to learn and start this procedure with colorectal surgeons as new road map for treating anorectal disorders.

P-87

Complete primary cerebellar agenesis: A case report

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Complete cerebellar agenesis is an extremely rare anomaly characterized by complete absence of cerebellar tissue due to failure to develop or destruction of normal developed tissue. Cerebellum is a complex region of the brain responsible for primary motor and cognitive function. Cerebellar agenesis can be partial or complete. People present with complete primary cerebellar agenesis are mostly infants and children with epilepsy, hydrocephalus and mental impairment. Even in some rare instances, living adults discovered with complete cerebellar agenesis are lacking these findings. Adults can present

with a lack of coordination, cognitive impairment in memory and behavior. Often times primary cerebellar agenesis or hypoplasia is diagnosed as Chiari IV malformation, however, this term is now considered obsolete.

We present a case of 25 years old female patient who came to our department with history of impaired motor function and developmental delay. She had life long history of impaired balance. Her gait is wide based and with assistance. She never underwent cranial imaging before. MRI brain analysis showed complete cerebellar agenesis and posterior fossa was filled with CSF. The Pons was hypoplastic and giving bow tie appearance on axial images, whereas midbrain and medulla oblongata was normal. Tentorium and straight sinus attachment were low in position. No hydrocephalus was found.

P-88

Aortoenteric fistula, a complication of aortic aneurysm repair- An interesting case

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Aortoenteric fistula (AEF) is an abnormal connection between the aorta or its major arterial branches and part of the gastrointestinal tract. It is fairly uncommon, but a rather fatal condition. It has either a primary or secondary etiology, secondary being more common. We report the case of a 61 year old woman with a history of hypertension who presented in the ER with lower abdominal pain and vomiting for the past 10 days. She underwent CTA of thoracoabdominal aorta and was diagnosed as abdominal aortic aneurysm, for which she later underwent surgery. About 45 days later, she was brought to the ER again with hematemesis and melena. Her CTA of thoracoabdominal aorta again showed abdominal aortic aneurysm adherent with adjacent small bowel loops with surrounding multiple air specks and extravasation of contrast from aortic to duodenal lumen, likely representing aortoenteric fistula. Esophagogastro duodenoscopy was done to secure bleeding site however due to poor hemodynamic status of patient, procedure was abandoned and a second surgery was performed day after, where fistulous communication was intervened and jejunostomy was made. 1 week later, the patient died due to sudden myocardial infarction. Our report highlights a fatal manifestation of aortoenteric fistula, and reviews the associated literature.

P-89

External auditory canal osteoma - A rare entity

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Osteoma of external auditory canal (EAC), is a rare benign tumor. It accounts for only 0.05% of total otological surgeries. Frontal sinus osteoma are more common than temporal bone osteoma in head and neck region. It is rare but literature reported cases from middle ear, internal auditory canal, and semicircular canal, mastoid and in external auditory canal. External auditory canal osteomas are mostly pedunculated lesions arising along tympanomastoid suture. Here, we present a case of osteoma of external auditory canal that we came across in our hospital.

P-90

Gallbladder agenesis; A rare entity. Its diagnostic challenge and literature review

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Agenesis of the gallbladder and cystic duct is one of the biliary system's rarest malformations, with a reported frequency of 0.007% to 0.027%. It may present

as asymptomatic condition that is typically discovered as an incidental finding on imaging modalities. There are also symptomatic instances where patient may present with symptoms like biliary colic that may be linked to cholelithiasis, cholecystitis or cholangitis misleading to various investigations and treatments. The clinical diagnosis of agenesis of the gallbladder is quite difficult since it is an exceptionally infrequent congenital condition with masked clinical and radiologic characteristics. Here, we discuss the case of a 27-year-old female who arrived to the emergency department with complain of right upper quadrant pain, jaundice, and abnormal bowel habits for few months, aggravated for past one week. An ultrasound of her upper abdomen revealed the absence of GB, which was verified by her CT scan and MRCP. Gallbladder agenesis is a relatively rare condition that could require needless diagnostic procedures and treatments. The gold standard test is the MRCP. Despite its benign nature, smooth muscle relaxants are chosen for conservative treatment in symptomatic patients. This study's objective is to discuss the most crucial aspects of gallbladder agenesis and to help clinicians in the early diagnosis detect GB agenesis as soon as possible to prevent catastrophic events and misleading to various investigations.

P-91

Wunderlich syndrome, A rare and interesting case with its radiological presentation

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Wunderlich syndrome is a rare but potentially life-threatening clinical condition that presents as an atraumatic spontaneous hemorrhage into renal subcapsular and retroperitoneal region. Its clinical presentation includes a triad of symptoms known as Lenk's triad and comprises of acute onset flank pain, a palpable flank mass and hypovolemic state secondary to internal bleeding. We present the case of a 73-year-old non-compliant hypertensive patient who presented with left upper quadrant pain and vomiting and was found to have perinephric hematoma, secondary to active bleeding from aneurysms in a renal angiomyolipoma. She was managed with selective angioembolization. Post embolization clinical course was uneventful and patient recovered smoothly.

P-92

“Departmental audit on adherence to ACR BI-RADS on breast ultrasound”

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OBJECTIVE: Standardization of breast imaging reports is assured by classification devised by Royal college of Radiologists breast group, that all breast imaging reporting should include a numerical score. This five-point system is as follows: 1, normal; 2, benign findings; 3, indeterminate/probably benign findings; 4, findings suspicious of malignancy; 5, findings highly suspicious of malignancy. Additional 0 and 6 are also used for incomplete assessment and biopsy proven. Purpose of this audit is to assess whether all breast ultrasound reports of radiologists/sonologists in Shifa International Hospital are uniformly adhering to the ACR guidelines to assign one of the “seven” assessment categories of BIRADS.

METHOD: During the first cycle, 100 reports were recruited from radiology database from first three months of year 2023, from 1st January 2023 to 31st March 2023. The standard was all the breast imaging reports should have a numerical score according to classification devised by Royal college of Radiologists breast group. Target was set at 100% adherence to ACR guidelines of assigning BIRADS category. During second cycle, 100 ultrasound reports were again recruited from database for time period of 1st August to 14th October 2023. The data was overall summarized in the form of frequency tables, pie-charts and bar-charts.

RESULTS: During initial cycle, among the 100 cases, BIRADS was not given to 66 cases (66%) and 34 patients (34%) had BIRADS given. This was followed by small intervention session involving radiologist and sonologist for

sensitization with revision of ACR BIRADS. Second cycle came up with improved results with 51 reports (51%) having BIRADS characterization of findings and 49 reports (49%) with no BIRADS given.

CONCLUSION: Standardizing breast imaging reports is essential in understanding the disease better and preventing interpreter bias. Intervention is required for implementation and adherence to the given ACR BIRADS guidelines.

P-93

Primary paraspinal hydatid cyst with intraspinal extension. A rare case report

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Hydatid cyst is a zoonotic disease caused by *Echinococcus granulosus*. It rarely presents in the musculoskeletal system. Primary hydatid disease in paraspinal muscles is very rare. It can be discovered as an incidental finding in radiological imaging. Symptomatic patients are presented with usually symptoms secondary to the compression effect. It can cause dreadful consequences like erosion of adjacent bones, myelopathy, and cauda equine syndrome if left untreated. We present such a case of primary paraspinal cyst with intraspinal extension, and its radiological imaging findings, including X-ray, CT scan, and MRI.

P-94

Right atrial thrombus giving appearance of myxoma

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INTRODUCTION: Right atrial mass could be vegetation, thrombus or tumor. This diagnosis bear diagnostic difficulty and precise diagnosis is important in planning the right management. Although with current era of modern diagnostic tool availability differentiating intra-cardiac masses remain challenging at times specially in similar cases. However clinical presentation can lead to appropriate path of investigation and histopathology remain confirmatory. In cases where this dilemma may persist despite the guidelines clinical scenario to be strongly considered before final conclusion. In this cases report of young lady with history of shortness of breath and chest discomfort, she was admitted, diagnosed and underwent surgical excision of right atrial mass diagnosed as right atrial myxoma. In view of her extensive thromboembolic presentation, the case was reviewed including histopathology report and diagnosis of right atrial thrombus was confirmed.

REPORT: We report a 37-year- woman presenting with chest discomfort and shortness of breath. She was admitted to the hospital. Her Echocardiography demonstrated multi lobulated soft tissue echogenicity area with calcification seen in right atrium and extending into IVC. CT revealed intensely calcified area from right atrium extending into IVC, bilateral pulmonary embolism with extension into segmental and sub segmental branches as well as cavitating pulmonary infarcts in right lung. Discharge summary from surgery department revealed and histopathology showed. Post operatively patient had breathlessness for a period of time.

CONCLUSION: The diagnostic difficulty of RA mass might remain despite all investigation tools. RA thrombus should be considered in the differential diagnosis of right atrial mass. More precisely in clinical scenario of repeated episodes of repeated thromboembolic presentations. Patient should be evaluated for hyper-coagulable state. Similar cases should be evaluated for protein S&C deficiency.

P-95**Pediatric posterior fossa tumors - Tips and Tricks of imaging**

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OBJECTIVE: To study different pediatric posterior fossa tumors associated with clinical symptoms, radiologic features and pathological characteristics.

FINDINGS: Pilocytic astrocytoma is most common, slow-growing, benign tumor primarily affects children and young adults with cystic and solid component showing avid enhancement of solid component on post contrast images.

Medulloblastoma is one of the most common midline high grade posterior fossa tumors in children with heterogeneous enhancement after IV contrast. It requires aggressive treatment, including surgery, radiation therapy, and chemotherapy.

Ependymoma are typically slow-growing midline posterior fossa tumors and may have a better prognosis than medulloblastomas. It appears iso- to hypointense on T1WI and hyperintense on T2WI with heterogeneous enhancement.

Brainstem gliomas is one of the common pediatric tumors in the brainstem. The tumor is diffuse, infiltrative with expansion of the pons that usually crosses the midline.

Other tumors includes Atypical teratoid/rhabdoid tumor (AT/RT), epidermoid cyst, arachnoid cyst, metastasis and Type II neurofibromatosis.

AT/RT is a rare and aggressive tumor that can develop in the posterior fossa or other parts of the brain predominantly affecting very young children. NF2 is a rare genetic disorder characterized by the growth of tumors on nerves throughout the body. It is characterized by the growth of benign tumors, primarily on the nerves responsible for hearing (vestibular nerves) and balance called vestibular schwannomas or acoustic neuromas and can lead to hearing loss, balance issues, and other neurological symptoms. Metastasis are usually from primary tumors come from kidneys (Wilms tumor), lungs (neuroblastoma), bones (osteosarcoma), and other primaries.

CONCLUSION: Most of the pediatric tumors are located in posterior fossa with clinical complaint of headache due to raised intracranial pressure. Having sound knowledge of imaging features with child's age can lead us to achieve an accurate diagnosis.

P-96**A case of soft tissue swelling mimicking soft tissue sarcoma. A radiological and histopathological dilemma**

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We present here a case of 43 years old male, who initially presented with soft tissue swelling along the medial aspect of the right distal thigh for the last 6 months. There was an increase in the size of this swelling with associated pain and limping. Xray was performed, which showed a radiopacity in this region with no calcifications and the underlying bone was unremarkable. Because of the acute increase in size and no involvement of the underlying bone and intense pain ultrasound was advised keeping in mind an inflammatory/ infectious disease process. Ultrasound showed echogenic ill-defined lesion prompting the need for MRI which revealed an enhancing soft tissue lesion at the medial aspect of the thigh with intact muscles and no cortical breach of underlying femur. Differential were given including soft tissue sarcoma and biopsy was advised. To our surprise differentials were given, an extra skeletal myxoid chondrosarcoma or myoepithelial neoplasm without the typical MRI characteristics of chondrosarcomas or myoepithelial tumors.

P-97**Implications of false negative and false positive diagnosis of post-therapeutic colorectal cancer recurrence: ¹⁸F-FDG PET/CT vs. Contrast-enhanced computed tomography**

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OBJECTIVE: The objective of this study is to compare the implications of false-negative and false-positive results between ¹⁸F-FDG PET/CT and CECT to determine which imaging modality presents higher clinical utility in colorectal cancer follow-up.

METHOD AND MATERIALS: The cohort study was conducted at the Mehrunnisa, SIUT, which included 30 patients who had undergone treatment for colorectal cancer and subsequently underwent CECT and PET/CT scans for post-treatment follow-up. The data was collected over a period from 2021 to 2023.

RESULT: In our study, 30 patients who had biopsy-proven cases were included. Among these patients, 20 out of 30 (76.6%) were identified with local recurrence using standard reference modalities (PET/CT vs. CECT). While comparing the results of ¹⁸F-FDG-PET/CT with contrast enhanced computed tomography (CECT), it is observed that ¹⁸F-FDG-PET/CT out performed CECT in the detection of local recurrence. Results of PET-CT and CECT concurred in the detection of 14 true-positive (both PET/CT and CECT yielded positive findings) and 3 true-negative (both PET/CT and CECT yielded negative findings) cases. However, findings of PET-CT disagreed with CECT on 9 cases. It was notably false-negative (positive in PET/CT, negative in CECT) in 3 lesions and false-positive (negative in PET/CT, positive in CECT) in 6 operative bed recurrence. The level of agreement between PET-CT and CECT was approximately 70% indicating highly significant results of PET/CT.

CONCLUSION: This research provides valuable insights for clinicians, helping them select the most appropriate imaging- modality for post-treatment follow-up in colorectal cancer patients, where accurate detection of recurrence is essential for effective-management and improved patient outcomes.

P-98**Delleman syndrome: A rare congenital entity**

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Oculocerebrocutaneous syndrome, also known as Delleman syndrome, is a rare sporadic congenital syndrome with only around 40 cases reported globally, till date. It is characterized by features such as microphthalmia or anophthalmia, sometimes accompanied by cysts in the orbital area, focal skin anomalies, intracranial cysts, and the presence of skin appendages.

A 16 month old child was referred to our department with chief complaints of delayed milestones, fleshy cutaneous appendages predominantly on the right side of his face and dysmorphic right eye. An ultrasound was performed which revealed the internal cystic nature of facial appendages. The right eye did not exhibit normal globe morphology, rather an oblong septated cystic structure was observed in its expected location. Left eye showed normal globe anatomy. MRI of brain was performed under general anaesthesia which confirmed the sonographic ocular and cutaneous findings. Additionally, it revealed mild atrophy of right cerebral hemisphere with thickened gyri, thinning of corpus callosum with irregular contour of bilateral lateral ventricles, vermian hypoplasia with elongated superior cerebellar peduncles and relatively large posterior fossa. Considering the triad of multiple complex anomalies of CNS, eye and cutaneous defects; a diagnosis of Oculocerebrocutaneous syndrome/ Delleman syndrome was given and patient was referred to neurology department for management.

Delleman syndrome was first reported by Delleman and Oorthuys in 1981. The syndrome is extremely rare with very few cases reported till date. There are some concerns regarding potential cases left unreported or misidentification of such cases. Hence, a high suspicion should be kept in cases of skin appendages and ocular anomalies.

P-99

Antisynthetase syndrome in two quadragenarian females

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Antisynthetase syndrome is a rare autoimmune inflammatory systemic disease due to presence of antibodies against aminoacyl transfer RNA synthetase. Females are affected 2-3 times more than males. Clinical features include polyarthrititis, inflammatory myositis, Raynaud's phenomenon and interstitial lung disease.

We present imaging findings of two females that were referred for magnetic resonance imaging (MRI) of thighs to our department.

Both patients, aged 46 and 48 years, had increasing muscle weakness and muscle enzyme elevation. Characteristic MRI features in muscles of lower limb, particularly myofascial edema of iliotibial tract, were present in both. One of the patients had interstitial lung disease (usual interstitial pattern). Both fulfilled the diagnostic criteria proposed by Connors et al and Solomon et al. Cross-sectional imaging is crucial to diagnosis and management of this rare entity.

P-100

Neurofibromatosis II; An inherited disorder

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BACKGROUND: Neurofibromatosis type 2 (NF2) is a rare autosomal dominant neurocutaneous disorder (phakomatosis) manifesting as a development of multiple CNS tumors. Unlike neurofibromatosis type 1 (NF1), it is not associated with neurofibromas. Instead patients with this disease have:

- Intracranial schwannomas: mostly vestibular schwannomas, however sometimes patients may have spinal schwannomas
- Intracranial and spinal meningiomas
- Intraspinal-intramedullary ependymomas

The condition has been more accurately described by alternative names such as multiple inherited schwannomas meningiomas and ependymomas (MISME) and NF2-related schwannomatosis, but these are yet to gain general acceptance. The NF2 gene is located on the long arm of chromosome 22 (22q12) and encodes the merlin protein (also known as "schwannomin"). It plays a role in contact inhibition of growth and has tumor suppressor function at least in part according to this mechanism. Although variably expressed throughout the body during human development, merlin is highly expressed in adult neuronal cells, Schwann cells, and meningeal cells. Mutations in NF2 cause loss of protein function, resulting in a predisposition to tumor formation throughout the nervous system.

CLINICAL CASE: Fariha Bibi 8 years old female was referred to our department for CEMR Brain, with complains of anisocoria (left mid dilated pupil). Previous history of left sided proptosis and facial nerve palsy. Her CE MRI shows lobulated enhancing masses centered at the right facial and vestibulocochlear nerves, right hypoglossal nerve and left oculomotor nerve. An impression of multiple schwannomas involving bilateral facial nerves,

more on the right side, right hypoglossal nerve and left oculomotor nerve, findings were suggestive of neurofibromatosis type II.

CONCLUSION: Neurofibromatosis type 2 is a rare disease, with incidence of 1 in 33,000 to 40,000. The aim of this report is to present a case of sporadic NF2, in which diagnosis was established based on medical history, clinical symptoms and image findings on magnetic resonance (MR) imaging.

P-101

Elucidating the causes of small bowel obstruction on computed tomography

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Small bowel obstruction accounts for 80% of all mechanical causes of obstruction and is a substantial cause of morbidity and mortality. Early diagnosis helps in effective treatment plans.

- A 65-year-old woman with history of lymphoma showed small bowel obstruction with gas and fluid-filled small bowel loops. Transition point was seen with large calcified gall stone in the distal ileum, indicating gall stone ileus.
- In a 75-year-old man with persistent crampy abdominal pain, dilated fluid-filled small bowel and decompressed distal small bowel with transition point in short segment of small bowel showed thickening and increased attenuation with mucosal irregularity; neoplastic etiology.
- Contrast-enhanced CT scan of a 40-year-old woman presenting with abdominal distension revealed markedly distended stomach and small bowel loops with feces sign just proximal to the transition point of a small-bowel obstruction; bezoar.
- Imaging in a 50-year-old woman showed multiple dilated small-bowel loops out of proportion to gas in the colon with multiple air-fluid levels with abrupt transition to collapsed small bowel associated with focal kink and narrowing of lumen due to adhesions.
- Imaging in a 70-year-old woman showed multiple dilated small bowel loops and thrombosis of superior mesenteric artery resulting in diffuse hypoenhancement of small bowel. No wall thickening or mesenteric oedema was seen, signifying mesenteric ischemia.
- A 60-year-old woman showed multiple air-fluid levels in small bowel loops. Distally, there was extensive ileocecal intussusception extending upto transverse colon.

Imaging features of small bowel obstruction effectively communicate findings, estimate risk of complications, and provide recommendations for management.

P-102

Sequelae of inutero/early childhood impaired cerebral perfusion-Case series of Dyke Davidoff-Mason syndrome

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Dyke-Davidoff-Masson syndrome (DDMS) is a rare neurological condition of unknown frequency, with available literature mostly from case reports/series. Since its discovery, fewer than hundred cases have been reported. Most affected patients are among the pediatric population equally affecting both genders. It occurs due to in-utero or early childhood cerebral insults, leading to

hemocerebral atrophy/hypoplasia and contralateral hemiparesis. Congenital type occurs due to in-utero vascular occlusion of middle cerebral artery, unilateral cerebral arterial anomalies, coarctation of mid-aortic arch, or infections. Acquired variety results from birth asphyxia, prolonged febrile seizures, trauma, tumor, infection, ischemia, or hemorrhage.

Clinical features include seizures, trauma, mental retardation, facial asymmetry, contralateral hemiplegia or hemiparesis. Symptomatic treatment addresses convulsions, hemiplegia/hemiparesis or developmental delay. Hemispherectomy is rarely indicated. Differential diagnoses include Rasmussen encephalitis, Fishman syndrome, Sturge-Weber syndrome, linear nevus sebaceous syndrome and some brain tumors.

We present three cases of DDMS, who were referred to our department for magnetic resonance imaging (MRI) of brain. First patient is a 5-year-old male with hypoxic injury at birth and delayed developmental milestones. MRI showed encephalomalacia and gliosis of left parieto occipital region with left cerebral hemisphere volume loss. Right cerebral hemisphere was normal. Second patient, a 19-year-old male, had right-sided focal seizures and left-sided weakness. MRI showed right cerebral hemiatrophy with calvarial hypertrophy.

Third case is 2-year-old male child with delayed milestone child. Birth history was positive for prolonged labor and documented birth asphyxia and post-natal distress. Clinical diagnosis was of cerebral palsy. MRI showed right hemi-atrophy with overlying calvarial thickening.

MRI features of DDMS in the right clinical setting lead to correct diagnosis and optimum patient management.

P-103

MRI of female pelvis: Getting the right images through right technique

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INTRODUCTION: Cervical (13.6%) and endometrial (8.4%) cancers are second and third commonest malignancies in females after breast cancer (46.3%). Accurate imaging technique is vital for appropriate management. For imaging cervical and endometrial masses on magnetic resonance imaging (MRI), the technologist has to plan the oblique axial images on sagittal plane, keeping the position block at 90° to the long axis of the cervical or endometrial pathology. This will ensure accurate staging of malignancy by the reporting radiologist.

AIM:

- To perform the audit of technique for axial oblique MRI imaging in cervical and endometrial masses.
- To assess the improvement in adherence to guidelines after intervention in form of educating the technologists.

The standard

Correct imaging technique should be achieved in 100% of pelvic MRI scans performed for cervical and endometrial masses.

MATERIAL & METHODS: This audit was performed in the Radiology department of Foundation University, Islamabad, from Jan 2022 to Oct 2023. We included 50 female patients coming for MRI pelvis with cervical and endometrial masses through random sampling. Male patients and those scans with motion blur were excluded. Percentage of MRI pelvis scans with accurate oblique axial images was calculated. Results of first audit round were presented in the departmental meeting. Second round of 50 patients was carried out after education of technologists.

RESULTS: In the first audit, 06 % scans had correct axial oblique scan technique. This improved to 28 % in the second cycle after intervention.

CONCLUSION: After the two audit rounds carried out over 22 months, we were able to achieve 28% of imaging standards as compared to 06% obtained previously through this quality improvement project. This requires continuing efforts to achieve the required target.

Correct imaging technique by the MR technologist is vital step in patient management.

P-104

Radiological hallmark of pulmonary alveolar microlithiasis; Is HRCT chest enough?

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Pulmonary alveolar microlithiasis (PAM) is autosomal recessive genetic disorder caused by a loss of function of the SLC34A2 gene, causing widespread deposition of calcium-phosphate crystals in the alveolar space. Some patients remain asymptomatic for several decades. It has slow progression and can result in an end stage lung fibrosis requiring lung transplantation. Often it is an incidental finding, resulting in patients being referred to further examination after the discovery of classic radiological findings on x-ray.

We report case of 35-year-old woman who presented to orthopedic department for right limb swelling for over 1 month. MRI right leg showed right proximal tibiofibular joint degenerative & inflammatory arthritis with a large ganglion cyst extending into right leg.

As per-operative requirement, her chest x-ray was obtained which showed classic image of bilateral diffuse calcified reticular pattern, mainly in the middle and lower segments of the lungs. There were associated pleural calcification as well. Black pleura sign and sandstorm appearance can also be present, however it was not observed in our case.

Subsequent HRCT chest was done for confirmation of these findings which showed extensive calcification and thickening of inter and intralobular septas in both lungs. Calcified pleural thickening was noted bilaterally. Septal thickening with ground glass haze in lower lobe was giving crazy paving pattern. Innumerable subpleural tiny cysts & focal honeycombing were seen in upper lobes. Multiple tiny discrete ground glass nodules were also observed in apices where calcification was relatively less.

In conclusion, presence of aforementioned x-ray and HRCT chest findings are hallmark and sufficient to establish a diagnosis of PAM without any need for additional workup such as lung biopsy.

P-105

Radiological assessment of appendicitis: Insights from appendiceal diameter, WBC count and fat stranding

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BACKGROUND: Appendicitis diagnosis relies on radiological factors like appendiceal diameter, white blood cell (WBC) count, and peri-appendiceal fat stranding.

OBJECTIVES: Analyze 30 patient cases to understand these factors, assess appendicitis prevalence, and explore age-related differences.

SETTING: Sandeman Provincial Hospital Quetta at Radiology department.

METHODS: Retrospective study of patient data, categorized into "Appendicitis with Fat Stranding and increased WBC count" and "Increased Diameter, No Appendicitis, No Fat Stranding, and normal WBC count." Statistical tests used.

RESULTS: 40% showed appendicitis indicators; 60% had increased diameter without inflammation. Age influenced presentations.

CONCLUSIONS: Diagnosing appendicitis requires considering radiological and clinical factors, and age-related differences in presentation.

P-106

Diagnostic accuracy of doppler ultrasound for testicular torsion in young patients presenting with acute unilateral scrotal pain taking operative findings as gold standard

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INTRODUCTION: Testicular torsion is an emergent surgical condition originated by twisting of spermatic cord and its content. Prompt diagnosis and management of the condition is crucial to prevent vascular compromise. Doppler ultrasound plays important role in early detection of the condition however, results are highly operator dependent and need further research to be conducted in this regard. Therefore, this study is aimed to determine diagnostic accuracy of Doppler ultrasound for testicular torsion in young patients presenting with acute unilateral scrotal pain taking operative findings as gold standard.

OBJECTION: To determine diagnostic accuracy of Doppler ultrasound for testicular torsion in young patients presenting with acute unilateral scrotal pain taking operative findings as gold standard in terms of sensitivity, specificity, PPV and NPV.

MATERIALS AND METHODS: This Cross-sectional study is conducted in Department of Diagnostic Radiology, Hayatabad Medical Complex, Peshawar from 8th November 2022 till 8th May 2023. Patients with clinical suspicion of testicular torsion were enrolled. Presence of slightly decreased echogenicity and absence of blood flow on doppler ultrasound of testes was considered suggestive of torsion. Ultrasound findings were compared with operative findings. 2x2 table was used to draw diagnostic accuracy.

RESULTS: A total of 160 patients were enrolled. Age of the patients ranged from 18 to 40 years. Mean age of the patients was 29.68 ± 8.239 years. 85 (53.1%) patients were in the age group 18-30 years. The sensitivity, specificity, PPV and NPV of ultrasound for the diagnosis of testicular torsion observed were 77.7%, 96.5%, 89.7% and 91.7% respectively.

CONCLUSION: Ultrasound is non-invasive and easily available diagnostic modality for the diagnosis of testicular torsion with reasonable diagnostic accuracy in resource limited settings.

P-107

Comparative assessment of uterine and umbilical arterial Doppler in high-risk pregnancy management: A prospective observational study

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INTRODUCTION: Despite advances in antenatal care, preeclampsia remains a major cause of maternal and perinatal harm. Early screening for pre-eclampsia and fetal growth issues is essential for timely intervention. Uteroplacental blood flow alterations, often tied to pathologic spiral arteries during early

pregnancy, can signal these complications. Color Doppler assessment of uterine and umbilical artery velocity waveforms, identifying abnormal flow ratios or notches, offers a potential screening method.

OBJECTIVES: The objective is to evaluate the clinical significance and potential benefits of utilizing uterine and umbilical arterial Doppler measurements as diagnostic tools in the management of high-risk pregnancies within the Quetta population.

METHOD: This prospective study at a tertiary-level care center in Quetta included 250 high-risk pregnant women from rural and urban backgrounds. We assessed the predictive value of uterine and umbilical artery Doppler indices in identifying complications like preeclampsia, pregnancy-induced hypertension (PIH), and intrauterine growth restriction (IUGR). We collected demographic data, conducted Doppler ultrasounds, and calculated sensitivity, specificity, positive predictive values (PPV), and negative predictive values (NPV). The study received ethical approval, and data analysis was performed with SPSS Version 23.

RESULTS: Among 250 patients, 110 had abnormal Doppler findings. Specifically, 70 exhibited abnormal uterine artery Doppler, and 50 had abnormal umbilical artery Doppler. 10 patients had abnormalities in both. Of those with abnormal uterine artery Doppler, 20 had pre-eclampsia, 10 had pregnancy induced hypertension (PIH) and 25 had intrauterine growth restriction (IUGR). The S/D ratio and notch had a sensitivity of 60%, with positive predictive values of 33.3% and 37.5%, respectively. In the group with abnormal umbilical artery Doppler, 10 had pre-eclampsia, 15 had PIH, and 15 had IUGR. In uterine artery Doppler, a combination of parameters had the best sensitivity at 80%, followed by the notch and S/D ratio. In umbilical artery Doppler, a combination of parameters, S/D ratio, and Resistive index (RI) had a sensitivity of 40%, with specificities ranging from 91% to 96%. When both uterine and umbilical artery Doppler were abnormal (10 patients), all had both pre-eclampsia and IUGR.

CONCLUSION: Combining the assessment of uterine and umbilical artery Doppler measurements proves to be a strong predictor for the development of preeclampsia and intrauterine growth restriction (IUGR) in pregnant women. Hospitals can consider incorporating Doppler studies of both uterine and umbilical arteries into their standard protocols to identify patients at high risk, potentially reducing maternal and perinatal morbidity and mortality associated with these conditions.

P-108

Feasibility and desirability check between ⁶⁰Co and ¹⁹²Ir source for HDR brachytherapy: A multicenter study

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OBJECTIVE: To evaluate the feasibility and desirability of Co-60 and Ir-192 sources for HDR brachytherapy in the context of cancer treatment, considering physical, dosimetric, and economic factors, and to provide insights into their potential advantages and disadvantages, with a focus on radiobiological effectiveness and cost-effectiveness.

METHOD AND MATERIAL: Data was collected through an online questionnaire provided to designated individuals working at institutes where HDR brachytherapy is practiced, by virtue of Google Forms.

RESULT: This article explores the prevalent use of high-dose-rate (HDR) brachytherapy in cancer treatment within Pakistan, focusing on the radioisotope choices of Cobalt-60 and Iridium-192. A cross-sectional national survey was conducted among tertiary hospitals, revealing that 16 out of 34 radiation therapy centers in Pakistan offer brachytherapy, primarily for gynecological and prostate cancers. An exclusive of 4 institutes carry out interstitial brachytherapy, 11 other care to intracavity cancers while one treatment unit is used for managing eye conjunctivitis. Among these centers, 13 prefer Ir-192, while 3 opt for Co-60, driven by factors such as half-life, specific activity,

energy spectrum, dose distribution, and cost-effectiveness. The article reviews existing literature comparing the physical, dosimetric, and biological characteristics of Co-60 and Ir-192 in brachytherapy applications. It highlights the advantages of Co-60, including its extended half-life and uniform dose distribution for gynecological cancer treatment, making it a cost-effective and radiobiologically efficient choice.

CONCLUSION: The study underscores the significance of considering patient demand, cost-effectiveness, and radiobiological efficacy when selecting radioisotopes for HDR brachytherapy. While Ir-192 remains the preferred choice in most centers, Co-60 emerges as a promising alternative for specific cancer treatments, offering economic advantages and improved radiobiological outcomes in the context of limited resources in a developing healthcare environment like Pakistan.

P-109

"Addressing the shortage of technologists in nuclear medicine and radiation therapy: Challenges and implications in Pakistan's cancer treatment landscape"

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OBJECTIVE: The objective of this study is to quantitatively assess the shortage of technologists per machine in cancer facilities of Pakistan, identify contributing factors, its impact on patient care and treatment quality, evaluate existing training programs and propose recommendations to address this critical workforce challenge.

METHOD AND MATERIAL: Data for this study was gathered through Google Forms distributed to designated individuals employed at nuclear medicine and radiation therapy institutions across Pakistan.

RESULT: This article addresses a critical issue in cancer treatment facilities in Pakistan: despite the growing import of advanced machines for specialized services in cancer diagnosis and treatment, the limited availability of trained professionals poses a significant challenge. It explores the potential consequences of the staff shortage, compromised treatment quality, and increased workload for existing healthcare professionals.

The data analysis revealed 63 tertiary hospitals in Pakistan, where 34 of them have established facilities of nuclear medicine, radiation therapy or both with a concentration in Punjab and Sindh provinces. On average, 3 technologists are assigned per machine, ensuring efficient operation and patient care. Furthermore, the study identified 7 institutions in Pakistan that offer specialized courses in nuclear medicine and radiation therapy, serving as vital educational hubs for training future professionals in this field.

CONCLUSION: The article emphasizes the need for comprehensive training programs and workforce development strategies. These initiatives must incorporate specialized education components to effectively address the critical shortage of technologists in cancer treatment facilities throughout Pakistan. The urgency of this matter is paramount, as it directly impacts patient care, the maintenance of treatment quality, and the ability to meet the escalating demand for cancer treatments. It calls for collaborative efforts among healthcare institutions and educational institutions to address this critical workforce challenge.

P-110

Differentiation of bland thrombus from neoplastic thrombus of the portal vein in patients with hepatocellular carcinoma using triphasic CT scan

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BACKGROUND: Hepatocellular carcinoma (HCC) is a highly prevalent malignancy worldwide. Emphasizing the need for accurate characterization

and differentiation of HCCs in proper management plans. Triphasic CT imaging has emerged as a valuable tool in differentiation of malignant thrombus from bland thrombus in patient with HCCs, and providing important information about tumor enhancement pattern and improving the accuracy of histopathologic differentiation. Triphasic CT involves the imaging acquisition during the arterial phase, portal venous phase, and delayed phase and enabling the assessment of tumor thrombus enhancement pattern and recognition of particular features which are related with hepatocellular carcinoma. In this context, distinguishing between bland thrombus (BT) and neoplastic thrombus (NT) within the portal vein becomes a critical diagnostic challenge and triphasic CT have opened new path for distinguishing these thrombotic entities. This advancement significantly enhances both clinical knowledge and therapeutic approaches for patients with HCC.

METHODS: Data, including age, gender, thrombus type, and radiological graphs, were extracted from the institutional medical records of Bolan Medical Complex Hospital from February 2021 to February 2022. Patients were selected through non probability convenient sampling who were biopsy proven hepatocellular carcinoma, whose alpha fetoprotein levels are >1000ng/ml, and who underwent triphasic CT abdomen and assessment was on basis of enhancement patterns, tumor size and multifocality of tumor. The data was de-identified to strictly comply with the Institutional Review Board protocol approved by the institute.

RESULTS: Out of 55 patient studied: 37 patients diagnosed with malignant portal vein thrombus and 18 patients with bland portal vein thrombus in contrast enhanced CT. The discriminative factor between malignant thrombus and bland thrombus is enhancement of malignant thrombus in late arterial phase in patients with HCCs. The frequency of malignant portal vein thrombus is highest (67.2%) as compared to bland thrombus (32.7) in patient with multifocal HCCs.

CONCLUSION: The enhancement of the portal vein thrombus on the late arterial CT phase strongly suggests that the thrombus is a neoplastic thrombus from HCC rather than a bland thrombus and frequency of neoplastic thrombus is higher than bland thrombus.

P-111

Ultrasound analysis of patients with mastalgia with and without palpable mass

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OBJECTIVE: To determine whether mastalgia is a symptom to worry about, how frequently it is associated with breast lump and whether its work up is of any benefit when not associated with palpable abnormality.

MATERIALS AND METHODS: This was prospective cross-sectional study conducted from 2nd May to 1st July 2023, at Radiology Department, Khyber Teaching Hospital, Peshawar. Sample size was 246 taking 80% prevalence of mastalgia, 5% margin of error and 95% confidence level. All females referred after physical examination, to ultrasound breast, with complaints of mastalgia were included in this study.

RESULTS: Among 246 women with a mean age of 30.9 years presented with mastalgia, 17.5% (43) had breast lump. 69.2% (170) women had BIRADS 1, while 31% (76) had BIRADS 2. None had BIRADS 3,4 or 5. 37 (15.1%) had cyclic while 209 (85%) presented with non-cyclic mastalgia. Pathologies detected in women with lumps were abscess in 15 (34.8%), fibroadenoma in 14 (32.5%), mammary duct ectasia in 9 (20.9%), fibrocystic change in 4 (9.3%) and hematoma in 1 (2.3%) patient. Among 203 patients without palpable lump, 33 (16.3%) had positive sonographic findings, with mammary duct ectasia in 30 (91%), intramammary lymph nodes in 2 (6.1%) and fibroadenoma in 1 (3%) patient.

CONCLUSION: Sonographic findings of females with mastalgia were either normal or suggestive of benign lesions hence excessive use of ultrasound examinations may not be needed due to the fear of breast cancer.

P-112**Is it really ischemic stroke or an anarterial stroke MIMIC? Pictorial review of ischemic stroke and its MIMIC**

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BACKGROUND: Acute neurological deficit constitutes one of the most common emergency presentation. If acute ischemia represents the most common cause of acute neurological deficit, the diseases mimicking ischemic strokes represent upto one third of the cases. Ischemic stroke is usually a diagnosis of exclusion in the emergency room, usually supported by noncontrast computed tomography (NCCT), which is the first step in the evaluation of patients with acute stroke due to its widespread availability and relatively short imaging time. MRI has a better sensitivity in both identifying acute ischemia or other differential diagnosis to stroke.

OBJECTIVE: To correctly identify stroke mimics, which will significantly affect patient's management and long term morbidity.

METHODS: A retrospective pictorial review of different patients presenting to the radiology department of Shifa International Hospital with acute neurological deficit and suspicion of stroke who proceeded with MR brain from January 2020 till September 2023.

RESULTS: In addition to acute ischemia, following different mimickers were seen in these patients; 1. Hypoglycemia: in which MR showed T2 bright signal abnormality in bilateral basal ganglia. 2. Primary brain neoplasm: usually having chronic subtle symptoms but can be confused with acute infarct with patient present suddenly. Gliomas can be easily differentiated by presence of surrounding vasogenic edema, mass effect and post contrast enhancement. Low grade glioma without any significant vasogenic edema can be confused with an infarct however lack of diffusion restriction favours glioma in this case. 3. Encephalitis: MRI typically shows bilateral asymmetrical involvement of frontotemporal lobe often with internal hemorrhage. 4. Press: on MR we see bilateral symmetrical vasogenic edema within parieto-occipital lobes. PRESS changes are reversible as well. 5. Demyelinating disease: MS is most common demyelinating disease mimicking as stroke. MR show multiple oval finger like T2 and FLAIR post contrast enhancement in periventricular location and deep white matter with active lesion showing solid, complete or C shaped ring enhancement. 6. Hepatic encephalopathy: MR being a problem solving tool and showing hyperintensity on T1 pre-contrast in bilateral globus pallidus and MRS showing increase glutamine peak with choline and myoinositol peaks. 7. Intracerebral and subdural hemorrhage: MR features depend on the age of blood. 8. Cerebral venous thrombosis: MR shows T2 and FLAIR hyperintense lesion in non-arterial distribution often with a hemorrhagic component and sometimes presenting with isolated subarachnoid hemorrhage. 9. Epilepsy: There maybe area of cortical diffusion restriction on MRI with swelling on T2 and FLAIR. Sometimes, post ictal stage is seen on MR with bilateral pulvinar lesions and lesion of splenium of corpus callosum. 10. Others: tuberculosis, mets. reversible splenic lesion.

CONCLUSION: In case of acute neurological deficit, main aim of MRI reporting should not only to confirm or exclude the diagnosis of acute ischemia but also to correctly identify various stroke mimics.

P-113**Probing the depths of infertility: TRUS and scrotal ultrasound reveals**

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BACKGROUND: Male infertility is a critical concern, affecting couples worldwide. To better understand the causes and potential solutions for this

issue, medical professionals have turned to advanced diagnostic tools such as transrectal ultrasound (TRUS) and scrotal ultrasound. These imaging techniques allow for an in-depth examination of the male reproductive system, shedding light on structural abnormalities, varicoceles, and other factors contributing to infertility. This article delves into the critical role that TRUS and scrotal ultrasound play in diagnosing male infertility. By exploring their findings and implications, we aim to provide valuable insights for both medical practitioners and individuals struggling with infertility, offering hope and clarity on the path to parenthood.

AIM/OBJECTIVE: To determine different underlying causes of male infertility using TRUS and scrotal ultrasound.

RESULTS: In our study encompassing 127 male participants aged between 22 and 70 years (mean age 38.11), 121 individuals presented with primary infertility, while 6 exhibited secondary infertility. Transrectal ultrasound (TRUS) findings indicated a range of abnormalities, 20 unilateral seminal vesicle agenesis, 5 unilateral atrophic seminal vesicle, 5 bilateral seminal vesicle agenesis, 1 bilateral atrophic seminal vesicles, 4 seminal vesicle calculi, 2 vas deferens calculi, 2 testicular microlithiasis, 14 ejaculatory duct calculi, 1 ejaculatory duct stricture, 1 epididymal head cyst, 16 prostatic cysts, 6 prostatitis and 57 normal studies. Among the 121 patients, 51 underwent scrotal ultrasound which revealed 13 normal, 24 varicoceles, 2 hydroceles, 1 spermatocele, 9 epididymal cysts, 5 epididymitis, 4 atrophic testis, 1 epididymo-orchitis and 1 undescended testis.

CONCLUSION: Transrectal ultrasound (TRUS) and scrotal ultrasound emerge as valuable tools for diagnosing male infertility. These techniques provide crucial insights into structural and physiological abnormalities, enhancing the precision of clinical assessment. By leveraging TRUS and scrotal ultrasound findings, healthcare professionals can better guide infertility treatments and improve the prospects of achieving parenthood.

P-114**Renal venous topography in live renal donors: Mapping with multi-detector computed tomography**

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BACKGROUND: Pre surgical identification of anatomical vascular variants is always important to avoid complications during surgery. Venous vascular variants are fairly common in renal donors and various setups perform multi detector CT angiography on renal donors for better surgical planning.

AIM: To assess the prevalence and anatomical variations of renal venous anomalies in renal donors using CT imaging.

MATERIALS AND METHODS: After IRB approval total of 560 renal donors were included who underwent MDCT angiography as a routine protocol. The number, course and drainage patterns of renal veins were retrospectively observed from the scans. Anatomical variations of IVC and renal veins were assessed and classified. Multi planar reformations, maximum intensity projections and volume rendering were used for analysis.

RESULTS: Out of 560 healthy renal donors, 368 males(65.7%) and 192 females(34.3%) with a mean age of 36.29 years, the standard drainage pattern was seen in 499(89.2%) participants. Among 61(10.8%) participants with variant patterns, double supernumerary right renal veins were noted in 37(60.6%), triple right supernumerary veins in 7(11.4%), supernumerary left renal vein in 20(32.7%), leftretroaortic renal vein in 9(14.7%), left circumaortic renal vein in 1(1.6%) and double IVC draining single renal vein of its side in 1(1.6%).

CONCLUSIONS: Anatomical vascular variations if go unidentified before surgery can pose fatal threat on renal donors during nephrectomies. Computed tomography can easily identify these variants proving vital role of radiological imaging in surgical planning.

P-115**Ultrasound based transjugular intrahepatic portosystemic shunt (TIPS) malfunction criteria and outcomes; A single centre study**

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OBJECTIVE: The objective of this article is to present the criteria for TIPS assessment on ultrasound and the outcomes if malfunction occurs. This article will eventually help in imaging based diagnosis.

STUDY DESIGN: Retrospective study with explanatory research design.

PLACE AND DURATION OF STUDY: Radiology department, Shifa International Hospital, from 2020 to 2023.

METHODOLOGY: Different patients with post procedural TIPS were selected from the radiology database retrospectively from 2020 to 2023. Criteria was set on direct evidences including PVS of lesser than 90 cm/s, PSV greater than 190 cm/s or interval change in velocity of 50 cm/s. Other indirect signs included main portal venous pressure of less than 30 cm/s, splenomegaly or ascites in interval.

RESULT: Patients with aforementioned malfunctioned signs were red flagged and referred to IR department for evaluation. Most of the patients underwent venoplasty in whom suspicion of TIPS malfunction was raised.

CONCLUSION: This criteria should be used in performing regular grey scale and doppler scans of TIPS patient. Recognition of various malfunctioning signs on ultrasound imaging is necessary for making the accurate diagnosis and is helpful in the treatment plan.

P-116**Imaging beyond chest: Extrapulmonary manifestations of tuberculosis, a pictorial review**

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BACKGROUND: Tuberculosis (TB) in essence affects the pulmonary system, however its most catastrophic repercussions emerge due to its postient of this organism to advance into viscera and organ systems other than lungs. Extrapulmonary TB (EPTB) constitutes a small but significant percentage of the entirety of TB cases. Imaging findings are not always distinct and can imitate many other neoplastic and inflammatory processes; therefore, EPTB should be given due importance in the differential diagnosis, especially in a country like Pakistan where it is endemic particularly in patients with immune system disorders and other high-risk groups, including people with diabetes. Radiological assessments are critical for diagnosis and crucial in treatment planning and follow-up.

OBJECTIVE: To illustrate the diverse presentations of extrapulmonary tuberculosis (EPTB) using cross-sectional imaging to develop an understanding of how to recognize and differentiate this disease entity from other inflammatory and neoplastic processes that TB can mimic.

METHODOLOGY: Patients with proven extrapulmonary organ involvement by tuberculosis by either microbiology or tissue sampling were retrospectively included in this study from radiology information system from Jan 2017 to Sept 2023 who underwent CT/MRI imaging at Shifa International Hospital, Islamabad. Cases with extrapulmonary involvement of TB in the central nervous system, musculoskeletal, abdominal, genito-urinary, and pelvic regions were compiled.

RESULT: Different organ systems involved in this disease and their salient imaging features on CT and MRI modalities are presented.

CONCLUSION: Extrapulmonary tuberculosis (EPTB) is a complex variant of tuberculosis (TB) affecting organs beyond the lungs. Radiological modalities can be used isolatedly or in conjunction, depending on the affected organ and the extent of the involvement. Some radiological involvement patterns in EPTB are distinctive to this disease and can aid in prompt recognition. Knowing radiological features can avert unnecessary biopsy (such as brain biopsy) and interventions that may result in organ loss. By revealing the elusive aspects of EPTB through advanced imaging, this review underscores the importance of early diagnosis and informed treatment planning.

P-117**Diagnostic accuracy of anterior cruciate ligament injury at MRI, with emphasis on the secondary signs including the blumensaat angle, PCL angles and anterior tibial translation**

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BACKGROUND: ACL is the most prone ligament to injury and is paramount in maintaining the normal biomechanics of the knee. It courses obliquely within the intercondylar fossa which limits its assessment and pathology on MR. This study provides an insight into the secondary signs of ACL injury.

OBJECTIVE: To evaluate the sensitivity and specificity of secondary signs of ACL injury at MRI including:

Blumensaat angle of $>15^\circ$

Bowing of PCL: reduced PCL angle of $<107^\circ$ or bowing ratio > 0.39 and Anterior tibial translation of $>7\text{mm}$.

SUBJECTS AND METHODS: We prospectively collected data of cases with ACL injury (partial tear, complete tear or sprain) over the time period of two years in the department of Radiology Hayatabad medical complex and studied the secondary signs in these cases.

RESULTS: Total of cases 152 cases were studied, indirect signs were as follows: blumensaat angle of more than 15 degrees (sensitivity: 76%, specificity: 100%), PCL angle of less than 107 degrees (sensitivity: 50%, specificity:95%), PCL bowing ratio more than 0.39 (sensitivity:40%, specificity:99%)

CONCLUSION: Due to the high specificity, presence of secondary signs endorses the diagnosis of ACL tear. Due to the low sensitivity, absence of these signs does not eliminate the diagnosis.

P-118**Use of triphasic CT LI-RADS v 2018 in patients undergoing dynamic contrast-enhanced ct liver for hepatic lesion characterization**

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OBJECTIVE: To evaluate frequency of liver lesions and performance of major features in patients at risk for HCC using triphasic CT LI-RADS v2018 categorization.

METHODS: Retrospective cross-sectional observational study was conducted at the Radiology Department of Khyber Teaching Hospital in Peshawar from March 2021 to September 2022.

RESULTS: Out of 55 patients (80 observations) in our study, the mean age was 49 years ± 10 [range, 32-78 years] including 35 male and 20 female

patients. Out of 80 observations, 61 (76%) were classified as LR-5, 4 (5%) were LR-4, 7 (8.75%) were LR-TIV along with LR-5 lesions and 3 (3.75%) observations were assigned as LR-M (1 gastric carcinoma metastasis, 2 cholangiocarcinoma). LR-3 lesion {nodular transient hepatic attenuation differences (THADs)} and LR-2 lesion (wedge THADs) were noted in 1 (1.25%) patient each, while 3 (3.75%) observations were classified as LR-1 (cyst, fatty infiltration, hemangioma). No observation was found in 3 patients with cirrhotic liver. 2 patients had both LR-5 and LR-4 lesions.

CONCLUSIONS: LI-RADS establishes precise diagnostic criteria aiming to systematize nomenclature, assessment, and documentation of imaging findings in those with a predisposition to developing HCC.

P-119

Comparison between conventional sonography versus focused neurosonography for diagnosis of neural tube defects

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OBJECTIVE: To compare diagnostic accuracy of conventional ultrasound imaging approach with focused neurosonography for the detection of neural tube defects and impact of prenatal ultrasound conus medullaris position screening on detection of closed spinal dysraphism.

MATERIALS AND METHODS: This cross sectional validation study was conducted at Radiology department, Sandeman Provincial Hospital, Quetta for six months from 7th July 2022 to 6th January 2023. A total of 112 patients with neural tube defects were analysed. We compared the detection rare and accuracy before and after focused neurosonographic screening and pregnancy outcomes for neural tube defects. Findings were noted and were labelled as positive or negative (as per operational definition). Reports were assessed. Findings were recorded on a predesigned proforma and results were analysed by using the SPSS version 21 by descriptive and inferential statistics.

RESULTS: Comparing prenatal neurosonography with MRI reported a sensitivity and specificity of 72.2% and 100%, respectively, for US diagnosis of fetal CNS abnormalities, indicating that neurosonography offers a relatively sample (43.8%). The median gestational age at the time of detection for cranial dysraphism was 13.3 weeks, open spinal dysraphism was 22.0 weeks and closed spinal dysraphism was 22.6 weeks. All cranial dysraphism (n = 43) and open spinal dysraphism cases (n = 20)

CONCLUSION: Our study helps to improve early screening and prenatal diagnosis of neural tube defects and predicting pregnancy outcomes. Further more this study implies the use of fetal conus medullaris positioning as a marker of closed spinal dysraphism.

P-120

Assessment of mammographic density and BI-RADS category by the radiographers and its agreement with the radiologist

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OBJECTIVES: Our aim is to analyze the agreement between radiographer and radiologist assessment of breast density/BI-RADS category assessment and prevent unnecessary ultrasounds. We also aimed to assess the quality of acquired mammograms.

METHODS: 103 mammograms done throughout the year 2023 were randomly selected from the PACS database at Aga Khan University Hospital, Karachi. Three women imaging radiologists independently analyzed the mammograms and assigned a breast parenchymal density and BI-RADS category. An additional

independent reviewer then collected multiple data items for the selected sample size including the density/BI-RADS assigned by the radiographer and the radiologists. The data was processed using Microsoft Excel. Cohen's kappa statistic test was used to assess the interobserver agreement between radiologists and radiographers for parenchymal density and BI-RADS category. The quality of each mammogram was also assessed.

RESULTS: Out of the 103 records analyzed, there was a 74% and 72% agreement between radiologists and radiographers on BI-RADS scoring and mammographic density respectively. Cohen's Kappa Values for assessment of BI-RADS indicated near perfect and substantial agreement for BI-RADS 0 and 1 and BI-RADS 2 category respectively. Similarly, there was near perfect agreement for dense and heterogeneously dense categories whereas there was substantial agreement for the fatty and scattered fibroglandular categories. 63% of the mammograms were of optimal quality. The most common reason for suboptimal quality was posterior nipple line being discrepant by a distance being greater than 1 cm on approximately 26 out of 39 suboptimal mammograms.

CONCLUSION: There was significant agreement between the radiologists and radiographers for breast density/BI-RADS category assessment. Regular refresher courses and discussions can help maintain a uniform standard of care.

P-121

Stress of success

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INTRODUCTION: Professional burn-out can lead to physical and mental illnesses. With the rising impact of radiology in patient management, the radiologists are facing tremendous pressures due to work-place demands and challenges. Currently, our specialty ranks eighth out of 29 in burn-out rates world-wide.

AIM: To determine the frequency of burn-out in local radiologists.

MATERIAL AND METHODS: An online questionnaire was sent to doctors in different cities of the country. Those who were willing to fill the survey form were included; currently non-practicing doctors were excluded. Besides demographic details, presence or absence of burn-out, professional help sought for burn-out, working days in a week and reasons for professional burn-out were enquired. Statistical Package for the Social Sciences version 21 was used. P-value of ≤ 0.05 was taken as significant.

RESULTS: Total participants were 269; 110 were radiologists (trainees and consultants inclusive). Among radiologists, 98/110 (89.1%) had experienced professional burn-out in their career (p-value=0.053). Professional help to combat its signs and symptoms was sought by 20/98 (20.4%). Maximum were working 6 days a week (78/110; 70.9% with p-value=0.000). Female radiologists were 81/110 (73.6%). Majority belonged to fourth decade of life (48/100; 43.6%). Reasons for burn-out included long working hours, administrative tasks, production targets, insufficient compensation, passing examination, lack of recognition and autonomy, research and publication pressure, and difficulties in promotion.

CONCLUSION: There is high frequency of burn-out in local radiologists, being significantly related to number of weekly working days. Administrators and heads of departments should recognize this epidemic and take effective measures to teach and train radiologists about strategies to mitigate burn-out.

P-122**Bridging the communication gap: To hedge or not to hedge****Aasma Nudrat Zafar***Department of Radiology, Foundation University School of Health Sciences, Fauji Foundation Hospital, Rawalpindi, Pakistan.**E-mail: aasmarad@gmail.com*

INTRODUCTION: Radiology report is the main tool to document and communicate imaging findings to the clinicians. It must be accurate and meaningful, without ambiguity, for adequate communication to the multidisciplinary team.

OBJECTIVE: To carry out an audit to assess the frequency of hedging words and phrases in conclusion of CT scan, MRI and mammography reports of our department. To assess the improvement after intervention and carry out second and, when required, third audit round.

MATERIAL AND METHODS:

Place and duration: Department of Radiology, Foundation University, Islamabad from January to October, 2023. Radiological reports were randomly sampled for presence or absence of 'hedging' words or phrases in the impression. We included 20 reports each of CT and MRI scans and mammography. Our target was to achieve no hedging in conclusion of at least 90%. Results of the first round of audit were presented in the departmental meeting. Residents and consultants were educated through formal journal club. Second audit round was undertaken in next quarter. Due to inadequate results, clear instructions to avoid hedging were added in the reporting format of CT and MRI reports prior to the third round.

RESULTS: Mammography reports had hedging in 1/20 (5%) in first round, improving to no hedging at all after education of radiologists. First audit round for CT scan reports had hedging words in 7/20 reports (35%). This further declined to 10/20 (50%) in second and 8/20 (40%) in third audit. Regarding MRI reporting, hedging phrases were present in 9/20 (45%), improving to 7/20 (35%) in subsequent two rounds.

CONCLUSION: Hedging phrases in CT and MRI reports were present in majority despite intervention twice. Further efforts are required to achieve the target. Mammography reports had no hedging after the first audit round.

P-123**Bridging the health professionals' literacy divide: Lessons learned from a realms audit****Amna Mehboob**, Madiha Saeed Wahla, Salma Gul, Abeer Shahid, Atif Iqbal Rana, Khurram Khaliq Bhinder*Department of Radiology, Shifa International Hospital, Islamabad, Pakistan.**E-mail: amme781@gmail.com*

BACKGROUND: Analyzing errors and challenges is essential for refining practices and ensuring safety. When conducted in a supportive learning environment, it promotes the well-being of both service users and providers. The revised RCR Standards for Radiological Events and Learning Meetings underscores the educational significance of these gatherings, contributing to improved practices and service safety.

OBJECTIVE: To analyze the adherence of department and standardise our radiology events and learning meeting according to RCR guidelines.

PLACE AND DURATION OF STUDY: Radiology department, Shifa International Hospital.

METHODOLOGY: Data for the indicators was collected retrospectively for first cycle followed by presentation of audit and introducing standards. Re-audit was done after 3 months.

RESULT: In the first audit cycle (May 2023), assessing the previous 12 months of meetings against RCR guidelines revealed that only 60% of radiologists attended at least 50% of meetings. Organization, chair appointments, and case anonymity were in place. However, no record of case contributions

existed, and emails weren't sent to radiologists involved in cases. Attendance records were available for only 73.3% of cases.

In the second cycle (October 2023) 100% target was met with adequate attendance, Organization, chair appointments, case anonymity, attendance, and contribution records. Standard emails were consistently sent to radiologists involved in cases.

CONCLUSION: Our audit revealed substantial progress in meeting compliance with RCR guidelines. The first cycle identified areas for improvement, notably in attendance and record-keeping. The second cycle successfully addressed these issues, achieving full attendance and implementing standardized practices. This underscores the effectiveness of audit processes in promoting adherence to best practices and ensuring continuous improvement in radiology meetings.

P-124**"Epidemiology of non-traumatic acute abdominal pain in emergency department with CT as diagnostic modality"****Belqees Yawar, Namrah Khalid, Usama Shafiq***Department of Radiology, Shifa International Hospital, Islamabad, Pakistan.**E-mail: namrahk8@gmail.com*

OBJECTIVE: Acute abdominal/ flank pain counts for 7-10% of visits in emergency department. Use of diagnostic imaging is widely known for determining the cause. CT scan is commonly the imaging modality of choice for this purpose. Differential possibilities are often very wide ranging from benign happenings to life threatening conditions. The purpose of this study is to evaluate the varied epidemiology of patients presenting with acute abdominal pain with age and gender stratification.

METHOD: We conducted a retrospective descriptive study of consecutive patients who presented with acute abdominal pain and had undergone contrast or non-contrast enhanced CT scan. The setting was the emergency department of Shifa international hospital Islamabad for a period of 5 months from May 2023 to September 2023. The patients in the emergency department were assessed by emergency physicians and CT scans were analyzed by radiology specialists. Those who presented with traumatic abdominal injury or had prior history of known abdominal malignancies were not included.

RESULT: The mean age was 46 years. A total of 700 patients underwent contrast CT 348 (49%) and non-contrast CT scan 352 (51%). 439 (62%) patients among them were males and 261 (38%) were females with larger group younger than 65 years about 558 (80%). The commonest of the causes encountered were renal colic 229 (32%) and nonspecific abdominal pain 161 (23%). Among the other larger groups were patients with intestinal obstruction 67 (9.6%), appendicitis 54 (7.8%), hepatobiliary causes 35 (5%), pancreatitis 26 (3.8%) and other wider groups of infective/inflammatory causes 69 (9.8%) and miscellaneous 16 (2.2%).

CONCLUSION: CT scan is a reliable imaging modality for evaluation of patients with non-traumatic acute abdominal pain and it may decrease mortality and hospital admissions however use without a clear indication shouldn't be encouraged. The clinical assessment remains the foremost tool in patient's evaluation.

P-125**Evaluation of normal diameter of infra-renal aorta in a Pakistani population, coming to FFH using CECT****Hiba Hafeez**, Faryal Asmat, Muhammad Ibrahim, Faiz Ali Shah, Kiran Farooq*Department of Radiology, Fauji Foundation Hospital, Rawalpindi, Pakistan.**E-mail: hiba.awan@gmail.com*

INTRODUCTION: The standard diameter of an artery is important for clinicians, to recognize when artery has dilated pathologically. Pathological dilatation of the aorta can result in the formation of aneurysms and related

complications. However, to distinguish the normal from the enlarged aorta, it is necessary to standardize the values of 'normal' aortic dimensions. However, the literature on the association between body habitus and abdominal aortic diameter is unclear. Some studies have found significant associations with body weight whereas others have found significant associations only with height but not with weight.

There are few studies on the diameter of the abdominal aorta in Pakistani population. The commonest clinical conditions that arise as a result of pathological dilatation of the aorta are ectasia and aneurysm. The data from western studies suggested that a diameter exceeding 30 mm was well above the average (+2 SD) for both the sexes and was considered to be the dividing line between ectasia and aneurysms. Data from several trials suggest that men should be considered for surgery when the maximum aortic diameter reaches 5.5 cm or more; these limits were decided on the basis of the western data.

AIM: To analyse data to determine the size of the 'normal' average abdominal aortic diameter in the Pakistani population and to correlate it with age, height, weight, gender, body mass index (BMI) and body surface area (BSA). Also, it will initiate arguments to check whether management guidelines for abdominal aortic aneurysm (AAA) are also applicable to the Pakistani population considering the difference in body sizes.

MATERIALS AND METHODS:

Type and place of study

This cross-sectional study was conducted. The approval of the Ethics Committee was obtained prior to the commencement of the study. Subjects in this study were patients who were to be evaluated for any abdominal pathology by contrast-enhanced CT scan at Fauji Foundation hospital Rawalpindi using Aquilion 16 Slice CT scanner.

Sample size

A sample size of 66 was calculated using sample size calculators for designing clinical research. With margin of error 5 percent, confidence level 95 percent and correlation 0.338.

Inclusion criteria:

All patients in the age group 18–70 years undergoing CECT scan of the abdomen were eligible for the study.

Exclusion criteria:

Those excluded were subjects with a previous history of AAA or who had an AAA detected by CT scan (defined as infrarenal aortic diameter (IAD) = 3.0 cm), those with diagnosed cases of coronary and peripheral arterial disease and those known to be suffering from collagen vascular disorders such as Marfan syndrome or Ehler–Danlos syndrome.

All studies were performed on a real-time multislice CT scanner (Aquilion 16 Slice CT scanner) with a collimation of 1.25 mm, and anatomical coverage from the diaphragm through the pubic symphysis. In contrast-enhanced CT, imaging was performed during the arterial enhancement phase using an automated bolus-tracking technique after injecting i.v. bolus 100 mL of non-ionic contrast material with a power injector.

The abdominal aorta was measured just below the origin of renal arteries, straight anterior–posterior (sagittal) and transverse (coronal) planes using the estimated outer margins of the aortic wall.

One experienced radiologist evaluated all examinations. The inter- and intra-observer variability of the measurements was minimized by a repeat measurement by a second observer in 66 cases, after primary measurement. Aortic diameters (in cm) were presented as mean values with standard deviation (SD). Age, gender, height and weight, body mass index and body surface area were recorded in a questionnaire completed by all the subjects before the CT scan examination.

Statistical analysis

The correlation of abdominal aortic diameter with age, gender and body size was determined by univariate and multivariate linear regression using aortic diameter as the dependent variable. Continuous variables were presented as mean \pm SD. Categorical variables were expressed as frequencies (%). Correlation was performed between the variables such as age, gender, height, weight, body mass index and BSA. A p value of <0.05 was considered statistically significant. Statistical analysis was performed with SPSS version 21.

Both body mass index (BMI) and BSA formulas were used for body size. BSA was calculated in m^2 by Mosteller formula:

$[(\text{height in cm} \times \text{weight in kg})/3600]$.

For the final analysis, we separately grouped the subjects by gender, age, BMI and BSA. We calculated the mean aortic diameter, SD, and upper normal limit

(mean \pm 2 SD) for each group. We also used linear regression models to create BSA, age and gender versus aortic diameter.

RESULTS: In our study 66 patients were included. Out of which 8 were male and 58 female. The abdominal aorta was measured in anterior–posterior (sagittal) and transverse (coronal) planes using the estimated outer margins of the aortic wall. Mean anterior–posterior diameter was 1.4 cm \pm 0.26 SD and mean transverse diameter was 1.5 cm \pm 0.25 SD. Relationship of aortic diameter with variables like age, gender and body size was observed. Correlation of abdominal aorta with all variables like age, gender, BMI and BSA was significant.

CONCLUSION: Age, gender and body size have statistically significant effects on the mean abdominal aortic diameter. The abdominal aortic diameter increased with age, gender, height, weight, BMI and BSA. Vascular surgeons will benefit from our study while treating abdominal aortic aneurysms. This will provide a roadmap for formulating intervention protocol in Pakistani population.

P-126

An insight into the work ergonomics of radiology department at a tertiary care setup in Pakistan

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OBJECTIVE: The objective of this study was to see the incidence of back and neck pain among radiology workforce in Pakistan, and to assess their knowledge regarding work ergonomics.

METHODS: This cross-sectional survey was performed in the Department of Radiology, Liaquat National Hospital and Medical College during January to June 2023. Radiologists and radiology technicians were registered into this study. The sample size was calculated through Sample Size Calculator by Wan Nor Arifin keeping margin of error = 5%. The total calculated sample size was 381 patients. A proforma based on 24 questions was used to inquire the basic health hazards faced by the participants and their knowledge regarding ergonomics. This proforma was formulated using references from various studies and a pilot check was performed. SPSS version 21 was used to input the data for statistical analysis.

RESULTS: Majority participants were females (56.9%). Most of the participants were in age range of 20–30 years (52.9%). Most were practicing radiologists 47.1%, and about 17.6% were trainees. 41.2% of the participants suffered both neck and backache. Out of 400 participants, only 27.5% consulted a doctor for their symptoms. Only 37% participants took medications and 21% went for physiotherapy. Most 47.1% had a sedentary lifestyle. Majority of the participants were unaware of the spine hazards associated with prolonged sitting and wearing lead aprons about 49%. The interesting fact was that the knowledge of hazards to spine due to workplace environment increased with increasing years of training 69.2%.

CONCLUSIONS: According to the survey, participants were suffering from several health issues due to their work environment and significantly underinformed about work ergonomics specifically during the early years of training.

P-127

Role of MRCP in post cholecystectomy pain

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AIM: To find the incidence of different causes of post cholecystectomy pain on magnetic resonance cholangiopancreatography.

METHODOLOGY: This study is conducted in duration of Jan 2021 till Dec 2022 in radiology department of Rehman medical institute, Peshawar This is a prospective study of 74 patients with post-operative complain of post-cholecystectomy symptoms. Their ages ranged from 20 to 70 years. Patients with liver transplant were not included. MRCP was performed on 1.5 tesla GE machine at radiology department of our hospital. MRCP images were assessed for bile duct diameters and the presence of strictures and stones. A common bile duct (CBD) diameter of < 8mm was considered normal, whereas > or = 9mm was considered abnormal. Findings were correlated with LFTs and clinical findings.

RESULTS: Our results showed that 86.4%cases with post cholecystectomy pain had positive findings on MRCP. The commonest finding was biliary stones in 37.8 % cases. Post-cholecystectomy biliary complications included retained CBD stones in 28 patients (9 intrahepatic, 18 extra-hepatic and 1 in cystic duct stump), biliary duct injury in 4 patients (2 cases with biliary duct ligation and 2 cases with biliary leakage. Stricture was detected in distal CBD in 9, in CHD in 4 cases, at ampulla in 2, at hilum in 9 and in 9 at anastomotic site of choledochoeneterostomy site. In 10 of our cases, MRCP was negative for any finding.

CONCLUSION: We conclude from our results that that 86.4%cases with post cholecystectomy pain had positive findings on MRCP and the most common cause of post cholecystectomy pain was biliary stones seen in 37.8%. The use of breath-hold 3D-SSFP MRCP is essential in evaluation of post-laparoscopic cholecystectomy biliary complications and in planning for management regimens.

RECOMMENDATION: MRCP should be performed in patients with post cholecystectomy pain. If the CBD on ultrasound is > or = 10mm and no cause is identified, MRCP is necessary. However, the availability of LFTs raises the diagnostic value of imaging.

P-128

The silent intruder: A unique case of cerebral fat macroembolism

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Cerebral fat embolism is a rare and challenging neurological complication resulting from the embolization of fat droplets into the cerebral circulation. It typically occurs as a consequence of long bone fractures, orthopaedic procedures, or severe trauma. It poses a diagnostic dilemma due to its variable and often nonspecific clinical presentation, which includes altered mental status, seizures, focal neurological deficits, and sometimes coma.

We present a case of one-year-old male child with history of pulmonary atresia, PDA and VSD. He presented with multiple episodes of generalised tonic clonic fits for 1 day and was admitted with suspicion of meningitis. Surprisingly patient did not give any history of surgery or trauma. CT brain with contrast showed fat macro emboli in right MCA and cortical branches with fullthickness MCA infarct.

Very few cases have been reported in literature with such explicit imaging appearance of cerebral fat macroemboli. Our case underscores the essential diagnostic role of advanced imaging, particularly CT, in identifying cerebral fat embolism in paediatric patients. This potentially life-threatening condition demands timely recognition, emphasizing the need for vigilance among healthcare providers and interdisciplinary management to optimize outcomes, especially in very young children.

P-129

Breast demoid fibromatosis uncovered: A case study and literature review

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A 21-year-old female presented with a short history of a palpable lump in her left breast. On examination, an ill-defined lump was palpable at the 5 o'clock position, accompanied by puckering of the overlying skin. The patient was referred for a breast ultrasound, which revealed an indistinct, ill-defined hypoechoic area without internal vascularity and some posterior shadowing corresponding to the palpable abnormality. The patient underwent an ultrasound-guided biopsy with clip placement. The histopathology of the biopsy specimen revealed benign breast parenchymal tissue with foci of adenosis, stromal sclerosis, and a small intraductal papilloma. There was no evidence of ductal carcinoma in situ or invasive malignancy in the available biopsy specimen. The patient underwent wide local excision under general anesthesia. The patient remained stable postoperatively. The histopathology of the excised specimen revealed a benign spindle cell lesion with morphological features favoring desmoid fibromatosis.

Breast fibromatosis, alternatively termed as an extra-abdominal desmoid tumor of the breast or mammary fibromatosis, represents an uncommon stromal tumor, comprising less than 0.2% of all breast tumors. Desmoid-type fibromatosis of the breast is a rare yet distinct condition. It represents a non-metastasizing, benign stromal tumor that exhibits local invasiveness. Nevertheless, the likeness between aggressive fibromatosis and invasive breast cancer in both imaging and clinical presentations can prompt comprehensive clinical and surgical evaluations. It is imperative for all medical practitioners to recognize this specific disease. In cases where there is incongruity in clinical, radiological, and pathological assessments of any breast cancer symptoms, further discussion and investigation should be pursued. Although desmoid tumors do not possess metastatic potential, the consequences of delayed treatment due to their local aggressiveness can be devastating.

P-130

“Evaluation of treatment response to concurrent chemoradiation therapy in patients with esophageal carcinoma using pre - and post treatment F¹⁸FDG PET/CT”

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AIM: The aim of the study is to assess the role of fluorine-18-fluorodeoxyglucose PET/computed tomography for the evaluation of concurrent chemoradiation therapy response in esophageal carcinoma

METHODS: A total of 70 esophageal cancer patients from January 1, 2019 to September 31, 2023 with biopsy proven esophageal cancer were retrospectively analyzed. 32 were females and 38 males with mean age of patients was 49 years. All patients underwent baseline scan and post treatment scan. On the pre-treatment FDG PET/CT images, the maximum standardised uptake value (SUV_{max}) within the primary tumour was identified. By computerised methods, the images of pre- and post-treatment FDG PET/CT were registered.

RESULTS: Out of 70 patients 45.7% were females and 54.2% were males with the mean age of 49 years. The number of patients with tumours of esophagus at upper, middle, and lower third were 6, 25, 39 respectively. There were 1 (1.4%) patient with Tx disease, 8 (11.4%) with T2, 53 (75.71%) T3, and 8 (11.4%) with T4 Stage according to the American Joint Committee on Cancer 7th staging system. Following the completion of treatment 16 (22.5%) were complete responders, 36 (50.7%) exhibits partial response, 2 (2.8%) with no response and 11 (23.9%) with disease progression.

CONCLUSION: The findings of this study emphasize the potential of fluorine-18-fluorodeoxyglucose PET/computed tomography as a valuable diagnostic tool in monitoring treatment response. Identifying complete responders is crucial, but the presence of partial responders and non-responders highlights the need for personalised treatment strategies. Further research and clinical application of this imaging modality can contribute to more precise treatment planning and better outcomes for esophageal cancer patients.

P-131

Pulmonary artery aneurysm: A rare case report

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Pulmonary artery aneurysm is a rare entity involving aneurysmal dilatation of the main pulmonary artery. It is associated with structural cardiac anomalies, structural vascular abnormalities, pulmonary artery hypertension, vasculitis and infection. In some cases, it can also be idiopathic. Clinical presentation may vary in different patients and are nonspecific. Treatment is usually surgical intervention once diagnosed. We have presented one such case of a patient whose CT scan showed a large aneurysm of descending branch of pulmonary artery.

P-132

Lower cranial nerves schwannoma; A rare case report

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A schwannoma, also known as a neurilemoma, is a tumour that arises from Schwann cells, which are responsible for the formation of the myelin sheath covering peripheral nerves. Schwannomas typically present as single, benign tumours of the nervous system. They are most commonly found in the head and neck region, particularly along the eighth cranial nerve (vestibulocochlear nerve) in the internal auditory canal.

However, in some cases, Schwannomas can present in multiple forms. This condition is known as multiple schwannomas or schwannomatosis. It is less common than a single, isolated schwannoma. In these cases, tumours can arise from various points along the peripheral nervous system, including cranial nerves, spinal roots, brachial and lumbosacral plexuses, or major peripheral nerves.

We have an unusual case involving bilateral Schwannomas that are likely originating from the lower cranial nerves on right side with involvement of hypoglossal canal and on the left side, it's suggested to be originating from the trigeminal nerve.

P-133

Post traumatic pseudo-aneurysms from a branch of thyro-cervical trunk and external carotid artery with concomitant arteriovenous fistula-A rare entity and diagnostic challenge in interventional radiology

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Pseudo-aneurysms from branches of thyro-cervical trunk and external carotid artery lie in deep tissues of the neck. Iatrogenic and post traumatic cases are

the most common cause. Pseudoaneurysm with concomitant arteriovenous fistula present a great challenge for interventional radiologists. The chances of other small co-existing pseudo-aneurysm is also possible in such cases and they may be masked by the larger out pouching making the management even more complex and therefore the interventional radiology team needs to be vigilant while dealing with such cases. We report a case of a 30 year old male with two pseudo-aneurysms arising from a branch of thyro-cervical trunk and external carotid artery with concomitant arteriovenous fistula following stab wound injury to the left side of neck.

P-134

Fundal placenta accreta in early gestation

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Generally, placental adherence is screened in high-risk patients who have low-lying placenta covering a previous cesarean scar, however, in non-previa it is usually not suspected and might experience serious adverse outcomes. Therefore, thorough assessment of placenta, regardless of its location, should be done looking for abnormal ultrasound features or vascular patterns that are usually associated with placenta adherence.

Morbidity adherent placenta refers to abnormal invasion of the placental villi into the myometrium due to deficient decidua basalis. Low lying placenta with prior c-sections is the major risk factor while others include advanced maternal age, multiparity, prior uterine surgeries and Asherman syndrome. Uterine fundus is a rare site for placental adherence and unfortunately such cases go un-noticed prenatally and encountered in the postpartum period as retained placenta and hemorrhage at attempts for its manual removal. We report a case of 29 year old female, G3P2 with prior 2 c-sections, who came to ER with pv bleeding at 11 weeks of gestation. Intrauterine gestational sac was seen on ultrasound without fetal pole. Placental tissue was noted in the region of fundus and along anterior wall away from the scar site associated with thinning of the retroplacental myometrium. Extensive low resistance vascularity was noted involving the interface with at-least two vessels traversing the uterine-bladder interface. MRI showed numerous T2 flow voids and loss of normal retroplacental T2 hypointense myometrial rim, suggesting placenta increta. She was diagnosed with accreta intraoperatively and managed with evacuation of uterus and uterine tamponade under general anaesthesia. Patients with non previa placenta should be searched for the common ultrasound features and abnormal vascularity pattern during first or second trimester to reduce dismal outcome of these serious cases.

P-135

Radial scar - masquerading as a malignancy

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The Radial scar (RS) manifests as an architectural distortion with long thin spicules radiating from a radiolucent central area which mimics malignancy and is difficult to differentiate from tubular carcinoma and therefore surgical excision has been generally recommended.

RS is an idiopathic lesion of breast not related to previous trauma or surgery. The cause is postulated to be a localized inflammatory reaction or chronic ischemia with subsequent slow infarction. Its incidence on image-guided biopsy ranges from 0.6 to 3.7%. 0.1-2.0 per 1,000 screening mammograms and 1.7-14% on autopsy specimens. Diagnosis is confirmed on histology which shows central fibro-elastic core with radiating spokes of ducts and lobules.

A 50-year-old female had right sided mastalgia and was advised diagnostic mammogram which showed indistinct lesion with surrounding extensive architectural distortion in upper outer quadrant of left breast while the right sided mammogram was unremarkable. It was labelled as BIRADS IVC lesion. Ultrasound was then done which showed an ill-defined hypoechoic area at 12:00 with mild internal vascularity corresponding with the asymmetric mammographic density and subsequently biopsy was advised.

Patient then underwent biopsy, with clip insertion, which revealed usual ductal hyperplasia on histopathology. This report was considered discordant and after considerable deliberation patient underwent elective wide local excision with sentinel lymph node biopsy.

Final histopathology report revealed radial scar, sclerosing adenosis and usual ductal hyperplasia. The sentinel node was negative for malignancy.

Although most radial scars are detected during histologic examination of breast tissue, the increasing frequency of screening mammography has led to the discovery of an increasing number of these lesions on imaging.

P-136

Spinal metameric arterio-venous malformation

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Spinal cord arteriovenous malformation (SCAVM) is a rarerly described vascular disease that can result in hemorrhage and neurological deficits. Spinal arteriovenous metameric syndrome (SAMS) is a subtype of SCAVM in which both extradural–intradural components are seen with involvement of spinal cord, bone, soft tissue, muscle or skin derived from the same metameric spinal artery.

It happens during embryogenesis while differentiation into sclerotome, myotome, and dermatome there is mutation of mother cells which may cause multiple malformations in parts of similar somatomeic distribution, including the central nervous system, skeleton, muscles, soft tissues, and skin.

We present case of a 20-year-old young male presented with right lower limb weakness from past 3 months. On examination, generalized increased tone and reduced power in right lower limb was appreciated. MRI spine was performed which revealed extensive perimedullary flow voids throughout the subarachnoid space predominantly on the dorsal aspect with intramedullary nidus at T5-T6 level associated with cord oedema and possible aneurysm formation at this level. Subsequently DSA was performed which confirmed a large metameric spinal AVM at mid dorsal levels showing perimedullary and paravertebral components with major feeding by intercostal arteries and extensive uphill and downhill venous drainage via paraspinal veins into the IVC. 80% of embolization of only perimedullary part of the AVM was achieved and patient was discharged in stable condition.

Such lesions are rarely encountered. A detailed understanding of the vascular anatomy of the spinal cord is required to manage these lesions. The accurate depiction of its site and angioarchitecture with MRI and DSA are the key to plan the endovascular treatment.

Given the rarity and the complexity of these lesions, patients should be referred to a tertiary hospitals and benefit from a multidisciplinary team including interventional neuroradiologists, vascular neurosurgeons, and vascular neurologists.

P-137

"Role of USG in acute scrotal pain, our experience in DHQ Gahkuch Gilgit ER department"

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AIMS: Review the most common causes of acute scrotal pain that present in the ER and discuss ultrasound features of acute scrotal pathology.

DISCUSSION: Acute scrotal pain is a common reason for emergency department visits and requires a rapid and accurate diagnostic evaluation. Ultrasound has become the imaging modality of choice in the assessment of acute scrotal pain due to its high sensitivity and specificity in diagnosing a wide range of pathologies. Ultrasound assessment can quickly and accurately identify potentially life-threatening conditions such as testicular torsion and guide prompt surgical intervention, which is critical for testicular salvage. It can also detect other differential diagnosis of scrotal pain also includes epididymitis and/or orchitis, testicular trauma, testicular abscess, hydrocele, varicocele, among others.

Ultrasound can be performed rapidly and non-invasively in the emergency department, which helps to expedite diagnosis and treatment. It is an easily accessible and safe imaging modality, particularly in cases where radiation exposure needs to be minimized. Ultrasound is the gold standard imaging modality for the evaluation of acute scrotal pain and plays an essential role in the clinical care of these patients.

This e-poster showcases a visual overview of the ultrasound findings associated with the most prevalent pathologies causing acute scrotal pain. The review is based on a retrospective analysis of cases that have presented in our emergency department.

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"Challenges in diagnosing and managing Morquio syndrome in resource-limited settings: A case from DHQ Gahkuch, Gilgit-Baltistan"

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Morquio Syndrome, a rare genetic disorder known as Mucopolysaccharidosis Type IV (MPS IV), presents unique diagnostic and management challenges, particularly in resource-limited healthcare facilities. This abstract spotlights an exceptional case of Morquio Syndrome diagnosed in a seven-year-old male patient at DHQ Gahkuch, Gilgit-Baltistan, Pakistan. It emphasizes the significant role of limited diagnostic resources and the need for creative clinical assessments.

CASE PRESENTATION: The patient, born to non-consanguineous parents, hailed from a region where access to advanced diagnostic tools was constrained. With no family history of this condition, the child's initial presentation included dwarfism and conspicuous skeletal abnormalities. Clinical examinations at DHQ Gahkuch revealed a pigeon-chest deformity, bowing of the lower extremities, truncal dwarfism, and abdominal distension. With limited resources, only X-ray imaging was available, which showing anterior central vertebral body beaking, goblet shaped iliac wings and widened acetabular angles. There were short tubular proximal phalanges with wide metacarples with pointed proximal ends. Due to constraints, enzyme analysis to confirm the diagnosis was unattainable.

CONCLUSION: This unique case from DHQ Gahkuch underscores the intricate diagnostic challenges faced when limited to X-ray imaging for diagnosing Morquio Syndrome in resource-limited settings. The absence of advanced diagnostic tools and the financial constraints of the patients necessitate creative clinical assessments and clinical diagnoses based on characteristic clinical findings and X-ray imaging.

While advanced therapies such as enzyme replacement therapy remain costly, this case serves as a poignant reminder of the urgent need to improve healthcare infrastructure and accessibility to accurate diagnostic tools in resource-limited regions like DHQ Gahkuch, Gilgit-Baltistan.

P-139

Diagnostic accuracy of transthoracic ultrasound in detection of pneumothorax in blunt chest trauma patients taking thoracic computed tomography as gold standard

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OBJECTIVE: To find the diagnostic accuracy of transthoracic ultrasound in the detection of pneumothorax in blunt chest trauma patients taking thoracic computed tomography as gold standard.

MATERIAL AND METHODS: This descriptive cross sectional study included 203 patients of either gender who presented with respiratory problems with a history of blunt chest trauma and were between the ages of 18 and 55 years. Patients with abnormal vital signs and with emergency signs of chest tube insertion were not included in the study.

RESULTS AND CONCLUSION: Mean age of the patients was 38.08 ± 10.05 years. 61.4% were males and 38.6% were females. Taking the rate of 30.65% for pneumothorax as a result of blunt chest trauma, the sensitivity and specificity of transthoracic ultrasound in detecting pneumothorax was 80% and 89% respectively with an absolute precision of 10%.

P-140

Magnetic resonance (MR) imaging appearance of Creutzfeldt-Jakob disease (CJD): Report of two cases

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Creutzfeldt-Jakob disease is a rare degenerative condition which is invariably fatal brain disorder caused by a pathogenic prion protein. Creutzfeldt-Jakob disease is characterized by rapidly progressive dementia, myoclonus, cerebellar, pyramidal, extrapyramidal, visual symptoms, psychiatric manifestations, and eventually death. CJD is classified into four types: sporadic (sCJD), familial or genetic (fCJD), iatrogenic (iCJD), and variant form (vCJD). Several factors contribute to its challenges in diagnosis. For example, delayed and variable presentations, low awareness of the disease, limited testing sites, and the need for tissue pathology for confirmatory diagnosis. Magnetic Resonance Imaging (MRI) aids in diagnosis with patterns that can guide or confirm clinical hypotheses. We report two cases presented to our facility.

A 46 years old lady with a three-month history of forgetfulness, low mood, behavioral and personality changes for which she was started on antidepressant by some psychiatrist. The patient mental status worsened over time and presented to our facility with irrelevant talks, drowsiness and unwilling movements of right upper limb. Another 53 years old lady presented with unwilling movements of both upper and lower extremities, walking instability and amaurosis. Magnetic resonance imaging reveals restricted diffusion in cortical grey matter of both cerebral hemisphere and basal ganglia. They are reported to draw attention to CJD.

P-141

Megalencephalicleukoencephalopathy with subcortical cysts; Report of a rare case

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Megalencephalicleukoencephalopathy with subcortical cysts is a hereditary autosomal recessive condition characterized by distinctive MRI findings and a varied but mild clinical course. Frontal and temporal subcortical cysts are the distinguishing features. It is typically accompanied with pyramidal and cerebellar symptoms. Megalencephaly is frequently discovered at an early stage. Seizures may occur, although they are normally readily managed. We present a case of 4 years old child who presented with weakness of both legs with delayed milestones and unable to move legs. He could not speak properly and could not sit without support. Paediatric department referred to radiology for MRI brain. Bilateral extensive deep white matter T2 hyperintensity were seen involving the subcortical white matter as well as the subcortical U-fibers with relatively large subcortical cysts of CSF signal intensity were seen in bilateral anterior temporal lobes. The lesions were seen sparing the basal ganglia as well as both thalami. Mild to moderate dilatation of the ventricular system as well as prominent cortical sulci and basal cisterns. Subtle similar changes were noted in cerebellum. Pons, mid-brain and medulla oblongata appeared normal. No evidence of intra-cerebral, sub-dural / extra-dural bleed was noted. Cavernous, sagittal, straight and transverse sinuses appeared normal. Pituitary gland was normal in size with central infundibulum. The vestibulocochlear nerve complexes appeared normal on both sides. No aggressive osseous lesion was reported. Findings were in favor of megalencephalicleukoencephalopathy with subcortical cysts. Patient was advised to have CSF analysis to see glycine peak but patient lost to follow up. We believe that distinctive MRI characteristics combined with a surprisingly mild clinical history are the key to detecting this illness in practice.

P-142

Dolichoectasia; A rare cause of trigeminal neuralgia

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Dolichoectasia is angiopathy characterized by dilation and elongation of cranial arteries. Etiological factors include hypertension and congenital causes. Dolichoectasia mostly involves the vertebrobasilar system. Simultaneous involvement of the carotid system is rare. In majority of the cases it is asymptomatic and is diagnosed incidentally. However clinical manifestations in symptomatic patients are ischemia, intraparenchymal hemorrhage, compression of cranial nerves or brainstem resulting in trigeminal neuralgia and hemifacial spasms. Vertebrobasilar dolichoectasia is a very rare cause of trigeminal neuralgia. The incidence has been recorded to be 0.05%.

CASE REPORT: We report case of a 55 year old male patient who presented to our outpatient department with uncontrolled hypertension and left sided excruciating facial pain sensitive to touch and aggravated by chewing food. Neurological examination revealed left sided trigeminal neuralgia. Rest of the neurological examination including cranial nerve examination was within normal limits. CT brain with contrast was performed which showed dilated and tortuous bilateral vertebral arteries and basilar artery running along the pons and cerebellopontine angle on the left side. Similarly the internal carotid arteries appeared dilated bilaterally. A subsequent MRI brain with contrast revealed laterally displaced left trigeminal nerve by a dilated and tortuous basilar artery.

The diagnosis can be made readily by MRI. The treatment of trigeminal neuralgia caused by vertebrobasilar dolichoectasia is medical and surgical. Medical treatment includes carbamazepine. Surgical treatment consists of microvascular decompression and is the definitive treatment.

P-143**Gall bladder ascariasis - A rare case report**

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Ascariasis is the most frequent helminthic infection which most often lives in the intestinal lumen. Migration of the worm may occur in the biliary tree, however, invasion of the gall bladder is very rare due to the narrow and tortuous appearance of the cystic duct. We report a case of a 13-year-old girl presented at our OPD department with diffuse abdominal pain. There was no history of fever, vomiting, nausea, weight loss, or jaundice. No laboratory investigation was available. An abdominal ultrasound evaluation exam was requested and revealed a distended gall bladder with long hyperechoic structures inside, with hypoechoic center lines, without posterior acoustic shadowing, creating a tubular coiled appearance. There was mild thickening of the gallbladder wall, however, no evidence of pericholecystic fluid was seen. There was mild intra and extra-hepatic biliary dilatation. During the examination, these structures were seen to be mobile. The imaging findings were compatible with gall bladder ascariasis. Radiological findings of gall bladder ascariasis using ultrasound highlight the importance of managing the patient who presents a diagnostic challenge, to achieve the best patient outcome.

P-144**Crossed testicular ectopia - A case report**

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Testicular ectopia is rare congenital anomaly where one of testicle descent from abdominal cavity through a path other than its normal path of descent, to settle in location other than its relative scrotal sac. The commonest sites are superficial inguinal pouch, perineum, femoral triangle/upper thigh and contralateral scrotum. In addition to these the rare sites are preperitoneal and extra corporeal. The associated genitourinary abnormalities include hypospadias, seminal vesicle cysts, renal dysgenesis, pyeloureteral obstruction etc, the other most common associated abnormality is inguinal hernia. The ectopic testis differ from cryptorchidism (undescended testis) in its path of descent. The treatment of choice is transseptal orchidopexy or orchidopexy, depending upon location of testicular ectopia. There is risk of malignancy and decrease fertility if left untreated. In this study, we report a case of crossed testicular ectopia of right testis on ultrasound at Radiology department Khyber Teaching Hospital Peshawar, Pakistan.

P-145**"Easy pick, easier missed: intracranial hypotension, an underdiagnosed cause of orthostatic headaches"**

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Middle-aged male presented to our hospital with postural headaches, tinnitus and vertigo. He was managed along the lines of occipital neuralgia and underwent cervical blood patch placement. He presented 2 weeks later with vomiting and altered sensorium raising suspicion of spinal leak. Imaging revealed bilateral subdural hematomas with no spinal leak. He was conservatively managed and discharged.

MRI performed after one month revealed characteristic features of intracranial

hypotension. Patient developed incontinence, falls and irrelevant speech. Repeat CT showed increase in size of subdural hematomas and development of cerebral edema. Microcraniotomy was performed. Final imaging showed improvement in signs of intracranial hypotension. Patient was discharged home in stable condition.

Intracranial hypotension is an easily missed entity in young to middle aged patients presenting with postural headaches resulting in longstanding reduced quality of life. Poster will cover important teaching points relevant to our case including definition and diagnostic criteria of intracranial hypotension, types, epidemiology, pathophysiology, associations, radiologist's guide to choosing correct imaging pathway, pictorial review of qualitative and quantitative imaging signs and exclusion of major differentials.

P-146**Role of Doppler ultrasound in detecting vascular complications in recipients of living donor liver transplant (LDLT)**

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OBJECTIVE: To determine the role of Doppler ultrasound in the detection of vascular complications in recipients of living donor liver transplant, keeping contrast-enhanced computerised tomography of abdomen as the goldstandard.

METHOD: The retrospective study was conducted from February 16 to April 1, 2022, at the Pakistan Kidney and Liver Institute and Research Centre, Lahore, Pakistan, and comprised data of living donor liver transplant recipients who had undergone contrast-enhanced computerised tomography of abdomen within 24 hours of Doppler ultrasound between January 2021 and January 2022. For the diagnosis of hepatic vascular complications, the diagnostic values of Doppler ultrasound parameters were derived by correlating Doppler ultrasound findings with contrast-enhanced computerised tomography results. Data was analyzed using SPSS 20.

RESULTS: Of the 35 patients, 24(68.6%) were men and 11(31.4%) were women. The overall mean age was 45.86±13.8years. For hepatic artery thrombosis, the use of Doppler ultrasound criteria yielded a sensitivity, specificity, positive predictive value, negative predictive value, and accuracy of 100%, 96.6%, 83.3%, 100%, and 97.1% respectively. For hepatic artery stenosis, overall sensitivity, specificity, positive predictive value, negative predictive value and accuracy of Doppler ultrasound was 100%, 96.8%, 75%, 100% and 97.1% respectively. Doppler ultrasound parameters resulted in a sensitivity, specificity, positive predictive value, negative predictive value and accuracy of 100% each in detecting portal vein and hepatic venous outflow tract thrombosis. Overall, Doppler ultrasound sensitivity, specificity, positive predictive value, negative predictive value and diagnostic accuracy was found to be 100%, 88.8%, 89.4%, 100% and 94.2% respectively.

CONCLUSION: Doppler ultrasound was adequate to document vascular complications after living donor liver transplant in majority of the cases with high accuracy and sensitivity.

P-147**Radiological audit for correct use of reporting workstation**

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PURPOSE / AIM: This study is directed to review the use of reporting workstations in ways to minimise health risks to radiologists keeping RCR

and HSE UK guidelines as reference.

METHODS: A survey was conducted at Radiology department involving 29 radiology residents. It contained questions regarding eye sight check-ups, breaks from work and display screen, posture habits, use of adjustable seating and use of variable ambient lighting. Results were compared to standard RCR and HSE UK guidelines, departmental audit meeting and awareness presentations were arranged with radiology residents. Workstation setups were reviewed and guidelines were displayed at prominent places. A re-audit and survey was performed which showed significant change in routine practices and attitude towards workstation usage.

RESULTS: Residents involved in this audit showed changed attitude in their daily work on reporting workstations, they showed willingness to get an eyesight check-up, take regular breaks from work, sit according to standard guidelines, use adjustable seating and variable ambient lighting. They also showed willingness to teach these guidelines to the new incoming staff/trainees.

CONCLUSION: In comparison to standard guidelines some inconsistencies were found in the use of reporting workstations and sitting postures. This was attributed to lack of apprehension to set guidelines. The improvement and changed attitude was achieved to minimise health risks due to incorrect use of reporting workstations and suboptimal postures.

P-148

"Concerns and perceptions of Pakistani radiology residents on AI's role in radiology"

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AIMS/OBJECTIVES: This research aims to understand how Pakistani radiology residents feel about AI being used in their field. We wanted to know if they worry about AI replacing their jobs and how they think AI might affect their work.

MATERIALS AND METHODS: We asked 185 radiology residents in Pakistan about their thoughts on AI. We wanted to know if they know about AI, if they're worried about it, and how they think it might change their jobs. We also looked at their ages and genders to see if that made a difference in their views.

RESULTS: Our survey showed that 60% of radiology residents are concerned about AI taking over their jobs. They think AI might be better at reading images than humans. About 48% worry about losing their jobs, and 37% think they might need to learn new things. Also, 23% are concerned about how AI makes decisions. Interestingly, younger residents (25-29 years old) are more worried (72%) than older residents (30-35 years old) at 52%. Both male and female residents share similar levels of concern (58% and 62%, respectively).

CONCLUSIONS: Many radiology residents in Pakistan, especially younger ones, have concerns about AI affecting their careers. They worry that AI might do their job better and that it could lead to job loss or needing to learn new skills. It's important to address these worries by providing education about AI and making sure AI benefits patients and is used ethically.

P-149

Advancing radiography quality in chest x-rays: A retrospective audit

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INTRODUCTION: This retrospective audit at DHQ Gahkuch examined the clinical and processing quality of chest X-rays taken between June 2022 and

December 2022. The study aimed to evaluate the impact of interventions and clinician awareness on radiograph quality.

METHODS: This retrospective audit at DHQ Gahkuch analyzed 175 chest X-rays obtained between June and December 2022 from 12 clinics and 18 clinicians. Two experienced radiologists assessed image quality using a scale from 1 to 3, guided by established criteria. Questionnaires collected data on clinician experience and quality control measures. Data were statistically analyzed, ensuring ethical standards were maintained throughout the study. Limitations include potential biases and limited generalizability. These methods enabled the evaluation of chest X-ray quality and its enhancement through clinician interventions and awareness

RESULTS: Of the 175 chest X-rays, 88% scored 1, indicating high quality, 10% scored 2, signifying moderate quality, and 2% scored 3, representing lower quality.

DISCUSSION: Enhanced clinician awareness and interventions were instrumental in achieving this significant improvement in chest X-ray quality, benefiting patient care and treatment planning.

CONCLUSION: This audit highlights substantial advancements in chest X-ray quality at DHQ Gahkuch, confirming the positive impact of increased clinician awareness and interventions.

P-150

Unraveling the uncommon: Vertebral dolichoectasia as an atypical trigger for trigeminal neuralgia - A case report

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OBJECTIVE: Trigeminal neuralgia is a debilitating neurological disorder that causes excruciating facial pain. Often referred to as the "suicide disease" due to its agonizing pain, trigeminal neuralgia disrupts daily life and can lead to emotional distress. While its exact cause is not always clear, the condition can result from compression of the trigeminal nerve, making effective treatments such as medications or surgical interventions crucial for those affected by this challenging condition.

Vertebrobasilar dolichoectasia is an abnormal elongation and dilation of the vertebrobasilar arteries in the brain. These arteries are essential for supplying blood to the posterior part of the brain, including the brainstem and cerebellum. When they become elongated and dilated, they can exert pressure on nearby structures, potentially leading to a range of neurological symptoms, including headache, facial pain, cranial nerve compression, and sometimes more serious conditions like stroke or brainstem compression.

CASE REPORT: A 64 year old housewife was referred to our department with complaints of long standing right trigeminal neuralgia. An MRI brain performed showed dilated tortuous and elongated left vertebral and basilar arteries, signifying vertebrobasilar dolichoectasia. Left vertebral artery was seen crossing the midline to unite with right vertebral artery forming the basilar artery on the right of midline. Superiorly, it traversed on the right of brainstem related to the course of right trigeminal nerve likely compressing it. Dilated basilar artery was compressing upon the right cerebellar peduncle, right medulla oblongata and right hemi-pons.

Vertebrobasilar dolichoectasia is an uncommon however potentially treatable cause of trigeminal neuralgia. It should be considered a possibility in these cases and ruled out on MRI brain

CONCLUSION: This case underscores the importance of considering vertebrobasilar dolichoectasia as a potential cause of trigeminal neuralgia. Recognition of this uncommon vascular anomaly in the diagnostic process can lead to more effective treatments and improved patient outcomes. Clinicians should remain vigilant in their assessment and include vascular factors in their considerations for comprehensive patient care.

P-151**Interventional radiology and pain management for abdominal cancers****Shahzad Karim Bhatti***Department of Radiology, Mayo Hospital/King Edward Medical University, Lahore, Pakistan.**E-mail: shahzadkbhatti@gmail.com*

INTRODUCTION: Interventional radiology is rapidly growing super specialty of radiology resulting in accurate results with reduced hospital stay. Interventional pain management is another area in which IR can help patients with targeted treatments which are mostly done blind without image guidance. Need for pain management in the gastroenterology cancers has increased as greater number of patients suffering from liver, gall bladder, pancreatic, upper and lower GI malignancies. Procedures like coeliac axis, superior hypogastric and ganglion impar blocks for cancer pains can be done using ultrasound, fluoroscopic and CT guidance with increased accuracy and least complications making quality of patient's life better.

OBJECTIVES: The study aims to highlight the effectiveness of interventional radiology in pain management under image guidance in abdominal cancer patients showing increased accuracy with decreased complications as compared to a routine approach.

METHODS: The study was done in interventional radiology department of Mayo Hospital, Lahore, using ultrasound, angiofluorosuite and 168 slice CT scanner. Study type was descriptive. Sample size of 148 patients was estimated by using 95% confidence level, 8% absolute precision with expected percentage pain control on 56 %. Study duration was 18 months after ethical approval. Pain was assessed on VRS (Verbal rating scale) with increasing intensity of pain range from 0 to 10.4

RESULTS: Out of 148 patients, 78 were female and 70 were male. 70 % patients were referred from oncology department. 30% from other departments and from different hospitals. 85% percent patients had significant pain reduction. 10% has moderate reduction in pain and 5% showed mild decrease in pain intensity. No serious complication was faced. Only 7 patients experienced orthostatic hypotension that resolved after IV fluids.

CONCLUSION: Image guided pain management procedures are targeted and very precise since every movement of the needle is being observed visually resulting in minimal chances of soft-tissue or vascular injury. Interventional pain management can be a useful companion in palliative as well as curative treatment in cancer patients.

P-152**To determine the accuracy of ureteral jet detection of Doppler ultrasonography in diagnosing ureteral obstruction in suspected patients with obstruction of ureter taking non-contrast CT (NCCT) as gold standard****Ahsan Ali, Pooja Devi, Syeda Nuzhat Zehra, Sukaina Jafri, Dua Alam***Department of Radiology, Sindh Institute of Urology and Transplantation (SIUT), Karachi, Pakistan.**E-mail: ahsan.rad@hotmail.com*

INTRODUCTION: Ureteric obstruction is a very common problem in our population. There are many causes for ureteric obstruction; the ureteric stone being one of the most common cause. Obstructed ureter appears dilated in most cases; but at it may appear normal in acute cases. In such situation observing the ureteric jet is a very valuable sign for patency of ureter.

OBJECTIVE: To determine the accuracy of ureteral jet detection of Doppler ultrasonography in diagnosing ureteral obstruction in suspected patients with obstruction of ureter taking non-contrast CT (NCCT) as gold standard.

STUDY DESIGN: Cross-sectional Validation study.

SETTING: Indoor Department of Radiology, SIUT Karachi

DURATION OF STUDY: 31-December-2021 to 30-June-2022

MATERIAL AND METHOD: A total 213 patients with diagnosis of ureteral obstruction having age 10 to 50 years were included. Doppler ultrasound was done in patient for determination of ureteral jet. After that all patients were referred for NCCT imaging for confirmation of diagnosis of ureteral obstruction. Sensitivity, Specificity, PPV, NPV and accuracy of ureteral jet on Doppler ultrasonography taking NCCT reporting as gold standard was calculated.

RESULTS: Mean age of patients was 31.84+11.32 years. There were 140 (65.73%) males and 73(34.27%) female patients. Ureteral jet on doppler ultrasonography (DU) was detected in 120 (56.34%) patients. Ureteric obstruction on non-contrast computed tomography was diagnosed in 114 (53.52%) patients. Ureteral jet on doppler US had a sensitivity of 94.7%, specificity of 87.9% and positive predictive value of 90.0% and negative predicted value of 93.5%.

CONCLUSION: Ureteral jet evaluation on Doppler ultrasonography is a highly sensitive and specific tool for diagnosis of ureteral obstruction and can be used as a first line tool of ureteral obstruction.

P-153**“An audit of acquisition parameters of 2D digital full field mammogram relative to those in 3D breast tomosynthesis”****Ahsan Ali, Syeda Nuzhat Zehra, Sukaina Jafri, Dua Alam***Department of Radiology, Sindh Institute of Urology and Transplantation (SIUT), Karachi, Pakistan.**E-mail: ahsan.rad@hotmail.com*

OBJECTIVE: The aim of this study is to assess the patient dose resulting from the use of the 3D technique involving many projections relatively to the 2D technique by comparing the exposure factors in order to establish an optimization program for reducing patient doses keeping the same diagnostic quality.

METHODS: The AGD is calculated from the exposure parameters of 100 conventional 2D mammograms and 3D mammograms, patients examined with the digital mammographic system Hologic Selenia Dimensions. The breast glandular tissue content was estimated by the Hologic R2 Quantra automated volumetric breast density measurement tool for each patient from right craniocaudal (RCC) and left craniocaudal (LCC) images in 2D imaging mode and 3D imaging mode and right and left mediolateral oblique in 3D imaging mode. The image detector of this unit is based on direct-capture amorphous selenium technology and has a detector pixel pitch of 70µm. In 2D imaging mode, an anti-scatter high transmission cellular (HTC) grid is used which automatically moves outofthefield of viewwhen 3D imaging mode is selected. During breast tomosynthesis the system acquires 15 projection images in increments of approximately 1° starting at -7.5° and ending +7.5°, with the breast in standard compression. 3D breast tomosynthesis is possible in CC and MLO projections.

Only patients who underwent both 2D and 3D mammogram between 2017-2019 in a University hospital are included (in this study). During a mammographic procedure mostly two images (CC and MLO) were acquired for each breast of a patient.

RESULTS: The dose values delivered in breast DBT (3D imaging) are higher than in FFDM (2D imaging) mode. Hence DBT (3D imaging) has superior AGD increment to that of FFDM (2D imaging). DBT (3D imaging) only can use for diagnostic program in order to minimize the AGD.

CONCLUSION: According to the results mean average glandular dose to the breast from DBT was significantly higher than that for FFDM. It was evident that AGD from DBT was higher than that for FFDM.

P-154**Diagnostic accuracy of color Doppler ultrasound for the diagnosis acute renal transplant rejection by taking histopathology as gold standard in patients presenting at tertiary care hospital, Karachi**

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INTRODUCTION: Kidney transplantation represents the best available treatment for patients with end-stage renal disease. Still, full benefits of transplant are undermined by acute rejection. Despite the introduction of new immunosuppressive agents, the incidence of allograft rejection after renal transplantation is still high. The diagnosis of AR ultimately relies on transplant needle biopsy. Most imaging techniques, like contrast-enhanced ultrasound and magnetic resonance, exploit the fact that blood flow is significantly lowered in case of AR-induced inflammation. Color Doppler sonography (CDS) is the imaging technique which is safe for the evaluation of a renal allograft.

OBJECTIVE: To determine the diagnostic accuracy of color Doppler ultrasound for the diagnosis of acute renal transplant rejection by taking histopathology as gold standard in patients suspected of acute renal transplantation rejection at tertiary care hospital, Karachi. Descriptive cross-sectional study. Study was conducted at Department of Radiology, SIUT, Karachi.

METHODS: Prospectively collected data from after consent. 30 suspected acute renal transplantation rejection who met the diagnostic criteria were included. Quantitative data presented as simple descriptive statistics giving mean and standard deviation and qualitative variables was presented as frequency and percentages. Sensitivity, specificity, positive and negative predictive values and diagnostic accuracy was calculated. P-value of ≤ 0.05 as significant.

RESULTS: Mean age in our study was 51.12 ± 7.57 years. 18 (60%) were male and 12 (40%) were female. Moreover, sensitivity, specificity, positive predictive value, negative predictive value and diagnostic accuracy of color US Doppler for diagnosis of acute renal transplantation rejection by taking histopathology as gold standard was found to be 92%, 80%, 95.8%, 66.7% and 90%.

CONCLUSION: Color Doppler sonography (CDS) is an accurate test for diagnosis of acute renal transplant rejection. A non-invasive and helps to avoid unnecessary surgeries in such patients and is important for its early and accurate management in resource poor settings.

P-155**Assessment of the effectiveness and safety of the bundle wrapping technique in neonate MRI Scans**

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BACKGROUND: Magnetic resonance imaging (MRI) is a non-invasive and safe method for examining the human brain. However, the success of MRI scans in neonates is highly dependent on their ability to remain still during the procedure. In the context of neonatal MRI, a widely used approach involves "feed and wrap" or "feed and bundle" techniques. These methods often include using a specialized vacuum fixation immobilizer to securely swaddle the newborn without the need for anesthesia. This technique is primarily applied to infants under three months of age.

MATERIALS AND METHODS: A randomized controlled trial was conducted to evaluate the effectiveness and safety of the bundle wrapping technique in neonate MRI scans. The study took place in a (NICU) and a hospital within

the Aga Khan University Radiology department during the period from January 2022 to February 2023. Participants were selected randomly.

RESULTS: A total of 139 patients were included in the study, with 73 neonates in the bundle wrap group and 66 patients in the group without bundle wrap. The results showed that 53% of neonates in the bundle wrap group had positive outcomes, while 47% of those without bundle wrap had positive outcomes. This suggests that the bundle wrapping technique had a significant positive impact on neonate MRI scans, enhancing their overall effectiveness and safety.

CONCLUSION: In conclusion, the study findings indicate that the bundle wrapping technique is a valuable addition to neonatal MRI procedures, particularly in a hospital setting. This technique demonstrates its effectiveness and safety, offering a promising approach for improving neonate MRI outcomes.

P-156**Cerebral flow diverter: Pioneering insights from a tertiary care hospital in a developing nation**

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OBJECTIVE: Worldwide, cerebral aneurysms are a major source of illness and mortality. There are several methods for aneurysm embolization. To manage difficult and wide-necked aneurysms, cerebral flow diverters (CFDs) have nevertheless become a cutting-edge endovascular therapy option. However, the utilization of CFDs and their effectiveness at tertiary care hospitals in third-world nations are still limited. The purpose of this study is to record the early experience and results of CFD utilization in a tertiary care hospital in a third-world nation.

METHODS: In this study, patients who received CFD installation for cerebral aneurysms at our tertiary care hospital from 2017 to 2022 are retrospectively analyzed. The demographics of the patient, the characteristics of the aneurysm, the specifics of the procedure, and the immediate results were gathered and examined. Aneurysm occlusion rates, complications, and clinical results at follow-up were the main outcomes.

RESULTS: A total of 19 patients underwent CFD placement during the study period. Most patients were female (57%), with a mean age of 41.7 years. Most common locations for aneurysms were the anterior circulation (89%) and posterior circulation (11%) The mean aneurysm size was 18.4 mm, and 73% of aneurysms were classified as wide-necked. The procedural success rate was 100%, with the successful deployment of the cerebral flow diverter achieved in all the cases. Initial and short-term follow-up angiograms showed complete occlusion rate of 87.5% and a partial occlusion rate of 12.5%. On late MRI follow-up, the overall complication rate was 15.7%, which included distal vessel occlusion, stent leakage, and aneurysm wall enhancement. All patients had excellent clinical outcomes at the most recent follow-up.

CONCLUSION: Our research provides valuable insight into the early use of CFDs for the endovascular treatment of cerebral aneurysms in a third-world tertiary care hospital. Despite limited resources, our center has achieved favorable clinical outcomes, aneurysm occlusion rates, and procedural success. This study highlights the potential for additional research and optimization of CFD utilization in similar healthcare settings in order to improve patient outcomes and reduce the burden of cerebral aneurysms in resource-constrained environments.

P-157**MRI of ACL graft and its complications**

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OBJECTIVE:

- To highlight normal postoperative appearance of ACL Graft.
- To evaluate commonly encountered complications after ACL graft.

MATERIAL & METHODS: Thirty-nine patients with ACL reconstruction coming to the department of radiology for MRI Knee from January 2010 till June 2023 were included in the study. Radiographs and MRI scans were reviewed retrospectively for the assessment of integrity of the reconstructed ligament and presence of related complications. Our study demonstrates the role of MRI in evaluation of ACL reconstructions and its complications such as abnormal tibial and femoral tunnel positioning, partial and complete graft tears, laxity of graft, arthrofibrosis, roof impingement, iliotibial band friction syndrome, tunnel cysts, hardware related complications and infection. Data was entered in SPSS v 26 and presented as frequency percentages.

RESULTS: Out of 39 patients 35 (89%) were male and 4 (10%) were female. Age group ranges from 20-62 with mean age of 36. Tibial tunnel was anteriorly placed in 13 patient (33%), posteriorly placed 2 patients (5%) and optimal in 24 patients (62%), femoral tunnel was anteriorly placed in 14 patient (36%), posteriorly placed in 2 patients (5%) and inferiorly placed in 1 patient. There was complete graft tear in 4 patients (10%), partial graft tear and 7 patients (18%) and laxity of graft was found in 24 patients (62%). Anterior drawer sign was positive in 10 patients (26%), equivocal in 4 patients (10%). Among other common complications, arthrofibrosis was presenting 10 patients (26%), roof impingement and 12 patients (31%), tunnel cysts in 4 patients (10%), iliotibial band friction syndrome and 4 patients (10%) and infection was in only one patient. There were no hardware-related complications in any of the patient.

CONCLUSIONS: It is important for radiologists to be familiar with the different reconstruction surgeries, normal post operative appearance of ACL graft and their common complications.

P-158**Adverse reactions to contrast media in radiology, A review of literature**

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INTRODUCTION: Intravenous contrast media are used in a variety of medical procedures, such as computed tomography (CT) scans and magnetic resonance imaging (MRI). While the risk of adverse reactions to contrast media is low, it is important to be aware of the signs and symptoms so that you can seek medical attention if necessary.

OBJECTIVE: The objective of this study was to review the literature on the incidence, risk factors, and management of adverse reactions to contrast media.

METHODS: A literature review was conducted to assess the incidence, risk factors, and management of adverse reactions to contrast media. The following databases were searched: PubMed, EMBASE, and Cochrane Library. The search was limited to english-language articles published from 2010 to 2023.

RESULTS: The most common adverse reactions to contrast media are mild and include nausea, vomiting, itching, and hives. More serious reactions, such as anaphylaxis, are rare but can be life-threatening. The risk of adverse reactions to contrast media is higher in patients with certain medical conditions, such as allergies or kidney disease. Patients who have had an adverse reaction to contrast media in the past are also at increased risk.

CONCLUSION: Adverse reactions to contrast media are a rare but serious complication of medical imaging procedures. By understanding the risk factors and signs and symptoms of adverse reactions, radiologists can help to ensure the safe administration of contrast media.

P-159**“Improved patient outcomes”: Optimizing CTPA with lower extremity indirect CT venography**

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INTRODUCTION: Pulmonary embolism and deep venous thrombosis are different aspects of the same disease entity; thromboembolism, mostly consequence of deep venous thrombosis. The diagnosis of pulmonary embolism and its underlying cause remains challenging, despite availability of multiple modalities. Combined CT protocol (CT pulmonary angiography & indirect CT venography) is used to examine both the pulmonary arteries and the deep venous system of the legs. The purpose of our study is to establish the time delay for maximum enhancement of the deep venous system of the lower extremities following conventional CT pulmonary angiography.

MATERIAL AND METHODS: Retrospectively, 25 patients were included in our study, who underwent CTPA for suspected pulmonary embolism within the last 06 months. We assessed venous enhancement at the level of the greater trochanter in patients. These readings were taken at 30-second intervals right after the CT pulmonary angiography. Time-density curves were drawn.

RESULTS: Time to peak venous enhancement was variable and the range of peak venous enhancements was 45 to 120 HU. Because of the venous time-density broad shape of the curve, near peak enhancement could be achieved in most patients at 2 min after CT pulmonary angiography.

CONCLUSION: Our study revealed that conducting a CT scan of the deep veins in the lower limb following standard CT pulmonary angiography, while considering optimal timing, can significantly enhance venous system visualization in the majority of patients. Importantly, this enhancement is achieved without any alterations to the established CT pulmonary angiography (CTPA) protocol.

P-160**MRI with chemical shift imaging in diagnosis of hepatic siderosis**

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OBJECTIVE: To assess role of MRI and chemical shift imaging and different sequences in diagnosis of hepatic siderosis.

METHODOLOGY: This is to assess the local practice of MRCP and chemical shift imaging in Radiology department of Rehman Medical Institute, Peshawar. Cases presented to the gastroenterology department with complaint of abdominal pain and had several blood transfusion were included in the study (n=30), who were referred between 20-08-2021 to 20-08-2022 to radiology. MRI was done on 1.5t GE MR. The total 30 scans were selected from PACS and clinical histories were acquired from central database HIMS. The images were viewed through PACS workstation using Synapse® (FUJI DICOME VIEWER). For each scan performed, findings were assessed. Microsoft excel 2016 was used in entering and analysis of data.

RESULTS: We took 30% patients who did MRCP and chemical shift MR imaging had T1, T2, dual echo and T2 fat sat sequences. Decreased signal on in-phase images compared to out-of-phase images (due to increased T2* effect on the in-phase images, which usually have longer echo times). Patients with

hemosiderosis have low T2 signals on MRI as compared to muscles. In hemochromatosis, the liver on in-phase sequence (which is usually obtained second, and thus more susceptible to T2* effects) demonstrates low signal, whereas the out-of-phase sequence demonstrates higher signal.

CONCLUSION: We concluded from our results that for siderosis dual echo sequence plays most important role, followed by T2 sequence. T2 fat sat sequence has no role in diagnosis iron overload.

P-161

Iatrogenic “Buffalo chest syndrome”; at Rawalpindi institute of cardiology - A case report

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Buffalo chest syndrome is a rare type of simultaneous spontaneous bilateral pneumothorax (SSBP) which refers to the detection of pneumothorax bilaterally at the same time. It is estimated that it comprises approximately 1.6% of all spontaneous pneumothorax cases. It is commonly a result of rupture of bilateral blebs/bullae. Rarely it is caused by interpleural communications most commonly due to invasive mediastinal surgery. To date SBSP due to suspected pleuro-pleural communications has been described in a total of 9 patients, and among them confirmed pleuro-pleural communication has been demonstrated in 4 patients, highlighting the rarity of this case. We present a case of a 70 years, non-smoker lady, who complained of sudden chest pain and shortness of breath on her 2nd POD of CABG. Examination revealed bilateral decreased chest movements, hyper-resonance with decreased breath sounds, suggestive of bilateral pneumothoraces. Chest X-ray PA view confirmed the presence of bilateral pneumothoraces and extensive subcutaneous emphysema along anterior and posterior chest and abdominal walls. A computed tomography of the chest was done to look for blebs or other causes of secondary pneumothorax. The CT revealed bilateral pneumothoraces, pneumomediastinum, extensive subcutaneous emphysema and sternal wires from recent surgery. Intercostal tube drainage of left hemithorax led to the resolution of pneumothoraces of both the sides pointing toward the presence of a connection between the pleura of the two sides. Repeat CXR showed resolution of the pneumothoraces. A repeat CT done after 6 days, at the time of discharge, showed resolution of the pneumothoraces and pneumomediastinum. On the axial sections, there seemed to be a communication between the two pleural sacs at the level of anterior junction line? However, it could not be confirmed with video-assisted thoracic surgery (VATS), as in this case patient responded well to unilateral intercostal drainage tube placement and conservative management.

P-162

Level of radiation safety awareness among non radiology staff

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BACKGROUND: Diagnostic radiology has become an essential part of today's health care system. The non radiology staff working in the departments can be exposed to ionizing radiations which can have hazardous effects on biological tissues. So it is important the non radiology staff must have basic knowledge about radiation protection and safety. The aim of this study was to assess the level of radiation safety knowledge among the non radiology staff.

MATERIALS AND METHODS: A questionnaire based survey was conducted

among the non radiology staff of RMI Peshawar. The questionnaire made to check the awareness level on non radiology staff. The questionnaire consist of demographic section and questions related to the harmful effects of radiations and various safety/protection measures that can be taken to avoid unnecessary exposure to radiation. Total of 30 non radiology staff members were included in the study, mostly belonging to the age group between 20-40 years.

RESULTS: Although 89.5% of staff members were aware of the fact that ionizing radiation can have harmful effects on the body tissues. The overall level of safety and protection awareness of the non radiology staff was below average almost less than 40%. 45.6% agree to fact they should wear apron and protective glasses in the x rays and CT scan rooms at the time of scanning. 30% were aware of the various indicators and symbols used in the department for avoiding accidental exposure to radiations.

CONCLUSIONS: The overall level of radiation safety awareness of the staff members was below average. factoring the small sample size, still it necessitates the fact that there should be some sort of training of non radiology staff members on basic radiation protection and safety measures.

P-163

Adequacy of request for CT abdomen

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OBJECTIVE: The purpose of the study was to reduce unnecessary radiation exposure to patient and audit the computed tomography (CT) scan request forms.

METHODS: We scrutinized 50 CT scan request forms received at the tertiary care center, RMI Peshawar. We checked the adequacy of filling of different fields in the request forms like clinical and surgical history, and the name of required examination. The results were analyzed using Microsoft Office Excel Worksheet (Microsoft Corporation, NM, USA).

RESULTS: 50 scan requests analyzed, 33 were adequately completed according to the criteria set and the CT finding is also positive 17 were considered inappropriate.

CONCLUSION: The information provided in the CT scan request forms was inadequate. The practice of filling these forms needs to be improved to protect the patients from unnecessary radiation exposure.

P-164

Value of CT for accessing severity of liver cirrhosis and its correlation with volume of ascities

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OBJECTIVE: To assess the value of abdominal CT for assessing severity of liver cirrhosis and its correlation with volume of ascities.

METHODS: Retrospective study was performed in radiology department of RMI from 10th august to 18th August 2023. A sample of 50 patients were carried out. Out of 50, 24 were males and 26 were females who were clinically diagnosed with chronic liver disease. Each patient underwent dynamic abdominal CT imaging with 128 slice Multidetector computed tomography. CT findings were reviewed. The parameters included liver volume index (posterior segment of the right lobe, medial and lateral segments of the left lobe), spleen volume index, ascites, porto systemic collaterals patients, contour irregularities of liver and confluent fibrosis within the liver.

RESULTS: Our result is totally based on parameters mentioned as standard included liver volume index (posterior segment of the right lobe, medial and lateral segments of the left lobe), spleen volume index, ascites, porto systemic collaterals patients, contour irregularities of liver and confluent fibrosis within the liver. We conclude from our result that out of 50 patients 30 patients (60%) have mild ascites. 14 patients (28%) have moderate ascites and 6 patients (12%) have gross ascites.

Among 50 patients 14 patients (28%) have all positive finding.

Among 25 patients (50%) have varices and 25% have no varices.

Among 50 patients 15 patients (30%) have splenomegaly and 70% have normal spleen.

Among 50 patients 12% are hepatitis B positive and 30% patient are hepatitis C positive.

Among 50 patients 20 patients (40%) have raised AFP and 20% patients have derange LFTS.

CONCLUSION: CT helps in quantitative analysis of radiology findings having cirrhosis and its associative finding in correlation with clinical findings.

P-165

Subjective assessment of contrast enhancement patterns in cirrhotic liver on MRI

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OBJECTIVE: To subjectively assess the enhancement pattern in cirrhotic on MRI and potential correlation of these changes with disease severity.

METHOD: A retrospective analysis of 50 patients with chronic liver disease was performed. The patients in study were referred to radiology department RMI between the dates of 16-01-2019 to 25-08-2023. MRI was done on 1.5T GE MR using T1, T2, T2W1, Dual Echo, Moderately Weighted T2, Heavily weighted T2, T2 FATSAT and post contrast dynamic images. The total 50 scans were selected from PACS and clinical database were acquired from central database HIMS. The images were viewed through PACS workstation using Synapse®. These images were analyzed by experienced radiologists. They classified the contrast enhancement patterns into homogenous, heterogeneous and rim-like patterns. The dynamic enhancement patterns were analyzed across arterial, portal venous, and delayed phases.

RESULTS: Among the 50 patients 24 had cirrhotic livers. Among the cirrhotic livers 80% had nodular margins and 20% had serrated margins. The subjective assessment of the radiologists showed substantial interobserver agreement. The patterns of enhancement among different phases were as follows: In cirrhotic liver heterogeneous hyper enhancement in arterial phase, heterogeneous enhancement in portal venous phase, and prolonged enhancement in delayed phase. While in Normal liver there is homogenous intense enhancement in arterial phase, gradual-moderate homogenous enhancement in portal venous phase and gradual washout enhancement in delayed phase. Also patients with portal hypertension had higher prevalence of heterogeneous and rim-like enhancement patterns.

CONCLUSIONS: We conclude that subjective assessment of enhancement patterns are reliable and they correlate with disease severity. Contrast enhanced MRI provides adequate phase-wise information for cirrhotic liver enhancement patterns and its differentiation from a normal liver. Thus subjective assessment of these patterns offer a potential non-invasive technique for evaluation of CLD patients and further guiding its treatment plans.

P-166

Audit of ultrasonography findings in cases of abnormal MRCP

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OBJECTIVE: Aim of audit is to correlate pre-MRCP ultrasound findings with abnormal MRCP.

METHOD: An observational cross sectional study was performed in Rehman Medical Institute, Peshawar from July 2022 to July 2023. 60 patients were prospectively analyzed. These patients were then advised MRCP by the primary physician, on the basis of their ultrasound and lab findings. In-patients and out-patients were recruited. The MR Cholangiopancreatography results were then interpreted by consultant radiologists who were blinded by ultrasound imaging findings to know cause and level of obstruction.

RESULTS: The results showed that out of a total of 60 cases performed, 43 were females and 17 male patients. Among 60 patients 8 patients had biliary dilatation on USG, 27 patient had cholelithiasis on USG. 16 out of 60 patient had biliary dilatation due to impacted calculi, stricture and malignant disease.

CONCLUSION: In conclusion MRCP serves as a more sensitive, specific and accurate diagnostic modality when compared to ultrasound. However ultrasonography can be used as a screening tool for detecting presence of intrahepatic duct dilatation. Thus helping to shortlist the patients for MRCP examination.

P-167

Adapted anatomical image criteria for PA chest radiography

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OBJECTIVE: To assess the adequacy of adapted anatomical image criteria for PA erect chest radiography.

METHODS: A cross sectional study was conducted with sample of 100 consecutive PA erect. Chest X-rays were taken over a period of 2 days from July 17, 2023 to July 18, 2023. All the X-rays were performed on digital radiography X-ray machine with 70kv, 200mA and 18mAs at the department of Radiology, Rehman Medical Institute, Peshawar. PA erect chest radiographs should meet the following criteria. It should be performed at full inspiration, symmetrical reproduction of the thorax, medial borders of scapulae to be outside the lung fields, appropriate exposure. Visualization of both apices, whole rib cage above the diaphragm and lateral costophrenic angles. Image annotations should not obscure lung fields and appropriate collimation.

RESULTS: Out of 100 cases 48 were female and 52 were male, 74 from OPD and 26 from IPD. 44 out of 100 cases met the criteria for chest radiograph with OPD cases of 32 and IPD cases of 12.

CONCLUSION: As evident from our results majority of the cases did not meet the criteria for chest radiograph. In order to aid in accurate diagnosis all chest radiographs should meet the criteria set by The American of Radiology (ACR) and European Commission (EU).

P-168

Hysterosalpingographic pattern of infertility in women of reproductive age

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OBJECTIVE: The objective of the study is to evaluate the spectrum of

findings in structural abnormalities of the uterus and fallopian tubes in infertile women undergoing hysterosalpingography (HSG).

METHOD: The study was conducted in Radiology department RMI from Jan 2021 to June 2023. 30 patients were assessed. Average age of patients was 26. Data analyzed using Microsoft Excel and SPSS version 22.

RESULTS: Our results are based on standard parameters. We assessed 30 patients. Average age of patients was 26. Among 30 patients 22 (73.3%) had normal uterine tubes with no positive findings while 8 (26.6%) had positive findings of blocked uterine tube. Among 30 patients 19 (63.3%) suffered from primary infertility while 11 (36.6%) came with complaints of secondary infertility.

CONCLUSION: We concluded from our study that major of our patient had normal uterine tube.

P-169

Hepatic lesions on MRI : Discrimination of benign lesions from malignant lesions with heavily and moderately T2-weighted fast spin-echo images

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OBJECTIVE: To describe role of combined use of heavily and moderately T2-weighted images in differentiation of benign from solid malignancies and to discuss diagnostic ability of T2-weighted images along with dual echo and diffusion weighted sequences.

FINDINGS: Vast majority of focal liver lesions are hyperintense on T2-weighted images. Lesions showing fluid bright signals on heavily weighted T2 with a TE > 100 are almost mostly benign (cysts, hemangiomas). Lesions which are hyperintense on T2 but do not depict fluid like bright signals should be correlated with dynamic MRI sequences to rule out malignancy. Malignant lesions (non-necrotic, solid) are mostly iso to slightly hyperintense on moderately weighted T2 (TE < 100) and isointense on heavily weighted T2.

CONCLUSION: T2 weighted imaging is useful for distinguishing benign from malignant lesion. The conjunction of other MR imaging findings and their integration in the clinical setting may allow a correct diagnosis in a considerable proportion of cases. There is role of value of TE in T2 weighted images.

P-170

Duodenal papillitis: A rare entity

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A 62-year-old male with a history of biliary colic, bladder outlet obstruction due to benign prostatic enlargement, and cholelithiasis, who had previously undergone laparoscopic cholecystectomy and transurethral resection of the prostate, presented with a one-month history of epigastric pain at Aga Khan University Hospital. The patient's clinical examination revealed stable vital signs and unremarkable systemic findings.

Laboratory investigations demonstrated deranged liver function tests, with elevated total bilirubin, direct bilirubin, GGT, SGPT (ALT), SGOT (AST), and alkaline phosphatase levels. These findings raised suspicion of hepatobiliary pathology.

Radiological investigations, including an abdominal CT scan and magnetic resonance cholangiopancreatography (MRCP), revealed interval non-

visualization of the gallbladder with cholecystectomy clips, common bile duct dilatation, and an edematous, enlarged duodenal papilla, suggestive of duodenal papillitis.

The differential diagnosis included duodenal papillitis, ampullary neoplasm, choledocholithiasis, and pancreatitis. Ultimately, the patient was diagnosed with duodenal papillitis, leading to common bile duct obstruction.

Conservative management included intravenous antibiotics, analgesics, and temporary endoscopic stent placement to alleviate the biliary obstruction. The patient exhibited improvement in symptoms, as confirmed by a follow-up ultrasound abdomen showing normalized biliary structures.

This case underscores the significance of timely radiological assessment in diagnosing and managing duodenal papillitis, an uncommon condition with potential clinical implications.

P-171

Posterior tibial plateau fractures: From reporting area to the operating room

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The incidence of posterior tibial plateau fractures ranges from 28-70%. They are known to be associated with worsening prognostic outcomes including post-traumatic osteoarthritis. The conventional fracture classification systems including the Schatzker system lack the lexicon to describe fractures in the coronal plane including the posterior tibial plateau. There are 38 available classification methods available for tibial plateau fractures. However, very few focus on the posterior tibial plateau with no real emphasis on the fracture morphology.

Radiography is the first preoperative imaging modality in tibial plateau fractures. However, the degree of articular depression and posterior column involvement is poorly depicted on plain radiographs. This can potentially lead to underestimation of injury and poor surgical outcomes in the event of improper fixation. Two and three dimensional CT offer multiplanar visualization of the articular surface, leading to accurate classification of the fracture and improved surgical approach.

The three column classification system introduced in 2010 uses the multiplanar CT findings and offers better understanding of the injury patterns. It is also associated with a higher degree of interobserver agreement as compared to conventional classification systems. It divides the tibial plateau into medial, lateral, and posterior columns. Hence, the tibial plateau fractures can be classified into zero, one, two and three column injuries.

The radiologist should also describe additional morphological features such as metaphyseal-diaphyseal fracture displacement distance, presence of angular deformity, articular surface depression and/or intra-articular displacement, open fracture and ipsilateral tibial shaft or fibula fracture. It is also important to shed light on associated soft tissue injuries.

The extent of accurate surgical management and optimized patient care is directly linked to the accuracy of the radiologist's report. It is, therefore, vital for any radiologist to clearly delineate the fracture morphology and key soft tissue injuries.

P-172**MRI features of Glioblastomas: A pictorial review**

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OBJECTIVE: Glioblastomas are highly aggressive and the most common type of primary malignant brain tumors in adults. They can have overlapping imaging appearances on the MRI scans with metastasis, lymphomas, infections and radiation necrosis. This pictorial review will educate the radiologists and treating physicians about the characteristic MRI appearances of glioblastomas, pattern of spread and disease progression on conventional and advanced MR Imaging.

METHOD: In this retrospective pictorial review, 5-10 biopsy proven Glioblastoma cases will be selected with their characteristic MRI features in their pre-treatment and post-treatment MRI scans. This review will emphasize on their unique imaging appearances, pattern of spread and post treatment change for radiologist and clinicians to understand.

RESULT/DISCUSSION: Glioblastomas often have thick, irregularly enhancing margins and a central necrotic core, which may also have a hemorrhagic component. They are surrounded by vasogenic-type edema, which in fact usually contains infiltration by neoplastic cells.

Multifocal disease, which is found in up to 20% of cases, is where multiple areas of enhancement are connected to each other by abnormal white matter signal, which represents microscopic spread to tumor cells.

CONCLUSION: The MRI features of glioblastomas are characteristics. The recognition of these features will help the radiologists and treating physicians to understand the pattern of spread and progression of disease.

P-173**Diagnostic accuracy of ultrasonography in detection of urinary tract calculi taking unenhanced CT KUB as gold standard**

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INTRODUCTION: Acute renal colic is a common urological emergency characterized by severe flank pain caused by urinary tract stone disease. Accurate and timely diagnosis is essential is crucial for guiding appropriate management and improving patient outcomes. The diagnosis of renal calculi is made on the basis of history, physical examination, and imaging modalities. The commonly employed imaging modalities for evaluating acute renal colic are ultrasound and computed tomography of the kidneys ureters and bladders (KUB).

Ultrasound is a noninvasive imaging technique that uses sound waves to produce images of the kidneys and other organs. It has many inherent advantages, which includes lack of radiation, universal availability, in expensive and non-invasive. Stones on ultrasound are characteristically demonstrated as highly echogenic foci with distinct acoustic shadowing. The greatest challenge with regard to ultrasound is the identification of ureteral calculi, particularly in its abdominal and upper pelvic course. This limitation of US is due to its inability to scan retro peritoneum due to overlying bowel loop, and bony structures.

CT scan is considered as gold standard in diagnosing nephrolithiasis but due to its unavailability at primary health children and high centers, ionizing radiations, contradiction in pregnant females and children and high and operative and maintenance cost makes it less suitable to be used as initial diagnostic modality.

OBJECTIVE: To determine the diagnostic accuracy of ultrasonography in detecting urinary tract calculi, keeping plain CT KUB as gold standard.

MATERIAL AND METHODS:

STUDY DESIGN: Cross-sectional retrospective study

SETTING: Imaging records of 164 patients, who underwent plain CT KUB and ultrasound KUB at Radiology Department of Fauji Foundation Hospital, Rawalpindi from June, 2023 to September 2023 were included.

INCLUSION CRITERIA: All patients above 18 years who undergone both ultrasound KUB and plain CT KUB.

EXCLUSION CRITERIA: Patient below 18 years of age who undergone only ultrasonography or CT KUB.

RESULTS: Among total of 164 patients, 64% (n=105) were females and 36% (n=59) were males. Mean age was 46.5 ± 5.91 years. The sensitivity, specificity, positive predictive value, negative predictive value and diagnostic accuracy of ultrasonography in urinary tract calculi as calculated as 65.27%, 44.5%, 55.5%, 55.36% and 67.83% respectively. Frequency of urinary tract calculi on CT KUB was recorded in 100% (n=164).

CONCLUSION: Ultrasonography is an acceptable substitute for detection of urinary tract calculi in absence or contraindication of CT scan. However ultrasonography has limitation in identification of ureteral calculi due to operator dependency and overlying bowel loops in scanning retro peritoneum.

P-174**Assessment of segmental hepatic fat distribution using magnetic resonance proton density fat fraction MR-PDFF in non-alcoholic fatty liver disease (NAFLD)**

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OBJECTIVE: To determine the heterogeneity of hepatic fat distribution across different liver segments and both lobes in patients with non-alcoholic fatty liver disease (NAFLD).

MATERIALS AND METHODS: This cross-sectional descriptive study was conducted at Pakistan Kidney and Liver Institute and Research Center, Lahore after approval from the institutional review board. We included 35 patients of NAFLD who qualified for the inclusion and exclusion criteria. MR-PDFF sequence was then performed on these patients after obtaining informed consent. Two regions of interest (ROI) were drawn at the periphery of each of the hepatic Couinaud's segments and their mean was taken as the fat fraction for that segment. Across all 35 patients, we calculated mean values, ranges, and standard deviations for individual segments, both lobes and the entire liver. Data was analyzed using SPSS version 20. Pearson's correlation was used to assess the relation between MR-PDFF and MR-PDFF variability (taken as the standard deviation for a segment/lobe/liver). Paired sample t-test was utilized to compare the means of the right and the left lobe of the liver.

RESULTS: The fat fraction in segment I was the lowest and in segment VII the highest. Segments IV and VIII had the second lowest and second highest fat fractions respectively. The right and left lobes showed a significant difference in fat fraction with values of 14% and 11.4% respectively (paired sample t-test, $p < 0.005$). The left lobe showed a greater MR-PDFF variability than the right lobe (1.9 vs 1.6%). In all patients, the right lobe had a higher fat fraction than the left lobe, with a mean difference of 2.6%. The whole liver fat content ranged from 6% to 35.1% with a mean of 12.7%. The variability ranged from 1.2% to 4.6% with a mean of 2.3%. The MR-PDFF variability and MR-PDFF showed a very weak positive correlation (for entire liver $r = 0.09$).

CONCLUSION: In patients with NAFLD, segments VII and VIII show the greatest while segments I and IV show the least fat infiltration. Hepatic fat preferentially gets deposited more in the right lobe of the liver.

P-175**Computed tomography liver volumetry in living donor liver transplantation: Influence of the slice thickness on the volume calculation**

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OBJECTIVE: Use of thinner CT slices can improve the precision of pre operative liver volumetry but it also is more time consuming and results in larger workload. The purpose of this study is to evaluate the effect of slice thickness on multidetector computed tomography based pre operative liver volumetry and comparison of time consumed during volumetry on thin and thick slices.

MATERIALS AND METHODS: This cross-sectional descriptive study was conducted at Pakistan Kidney and Liver Institute and Research Center, Lahore after approval from the institutional review board. Thirty potential liver donors (20 male, 10 females, mean age 26, range 19-44 years) underwent CT with a 128-channel multidetector-row CT scanner. Two sets of images having slice thickness of 0.625 mm and 5 mm were obtained. Liver volumetry was done on thick (5mm) and thin (0.625mm) slices by two radiologists and consumed time was calculated. The graft volume calculated on thick and thin slices was then compared to the actual per operative graft volume of the liver donors. The statistical analysis was performed on SPSS version 20 and paired-samples T-test was applied.

RESULTS: The mean estimated total liver volume calculated on thick (5mm) slices was 1137.87 ± 165.14 g and that on thin slices (0.625mm) was 1184.13 ± 15.52 g. The mean estimated graft volume on thick (5mm) slices was 663.57 ± 169.44 g and that on thin slices (0.625mm) was 693.70 ± 174.78 g. The time taken to calculate estimated graft volumes on thick slices was 7.29 ± 0.97 min and that on thin slices was 44.07 ± 4.78 min ($P < .001$). The mean actual per operative volume was 612.67 ± 174.62 which is closer to volume calculated on thick slices.

CONCLUSION: There was no significant difference between the volumes calculated on thicker (5 mm) images and the volumes calculated on thinner (0.625-mm) images in comparison with the marked difference in total time taken between thick and thin slice volumetry. Thus, estimated liver volumes calculated on thick slices can reduce the workload and time without significant change in volume estimation.

P-176**Malrotation of mid gut associated with intussusceptions and horseshoe kidney: Presenting as a mass in epigastrium**

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INTRODUCTION: Mid gut malrotation may present later in life with chronic gastro intestinal complaints. It occurs due to malrotation around the superior mesenteric axis, and may be associated with renal fusion anomalies which has similar etiology of fused renal isthmus being trapped under the inferior mesenteric artery axis.

REPORT: We report a 32-year-old woman presenting with intermittent abdominal pain. Ultrasound demonstrated a soft tissue mass in epigastrium. CT showed absence of a retro mesenteric (retro-peritoneal) D3 segment of duodenum with abnormal superior mesenteric artery (SMA) to superior mesenteric vein (SMV) relationship, i.e., SMA seen on right side of the SMV suggesting small bowel malrotation. There were two intussusceptions, one duodeno-jejunal giving false impression of epigastric mass on ultrasound, and

another proximal jejuno-jejunal. Incidental finding of pelvic horseshoe kidney was also identified with bilateral mild pelviureteric junction obstruction.

CONCLUSION: Horseshoe kidney may coexist with midgut rotation and intussusceptions.

P-177**Accuracy of computed tomography in detecting bowel thickening as malignancy keeping histopathology as gold standard**

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INTRODUCTION: Computed tomography (CT) scans are commonly used for evaluating bowel wall thickening (BWT), but their diagnostic accuracy in detecting BWT, with histopathology as the gold standard, requires assessment. This study aimed to determine the diagnostic accuracy of CT scans in detecting BWT by comparing CT findings with histopathological results.

METHODS: Patients who underwent both abdominal CT scans and subsequent histopathological / colonoscopic assessment of bowel wall samples were included. CT scans were independently reviewed by radiologists blinded to histopathological results. Sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), and accuracy of CT in detecting BWT were calculated.

RESULTS: A total 70 patients were included in the study. The sensitivity of CT in detecting BWT was 100%, with a specificity of 60%. The PPV and NPV were 29% and 100%, respectively. The overall accuracy of CT in detecting BWT was 93.48%.

CONCLUSION: CT scans demonstrate 100% sensitivity and 60% specificity in detecting BWT, using histopathology as the gold standard. While CT can be a valuable tool in identifying BWT, its diagnostic accuracy should be considered in the clinical context. Further research and clinical evaluation may refine the role of CT in diagnosing BWT and guide patient management.

P-178**Enhancing precision in lung lesion biopsy with PET CT guidance. Outcome and challenges**

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CT-guided transthoracic core-needle biopsy (CNB) stands as a conventional and dependable approach for diagnosing uncertain lung lesions, particularly when surgical intervention is not a feasible option. Numerous studies have consistently demonstrated the high accuracy of CNB and its minimal complications. It has also proven to be an effective method for diagnosing malignant lung tumors. Nonetheless, CNB may fail to detect some cancers, particularly in the case of large, intricate lesions or those featuring cysts and necrotic areas. This limitation arises from the fact that CNB samples only a small segment of the lesion, and the presence of collapsed lung or pneumonia in proximity can hinder the acquisition of a representative sample.

To overcome these challenges, functional and metabolic imaging techniques such as ^{18}F -FDG PET/CT can be employed. PET/CT scans can identify areas with heightened metabolic activity, aiding in making informed treatment decisions. Nevertheless, it's important to exercise caution with PET/CT scans, as they can sometimes yield misleading results, showing elevated uptake in benign conditions. This can lead to inaccuracies in staging and treatment choices.

P-179**Diagnostic accuracy of ultrasound in the detecting of malignant thyroid nodule using histopathology as gold standard at a tertiary care hospital, Karachi**

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This study aims to determine the diagnostic accuracy of ultrasound in differentiating benign from malignant thyroid nodules. Thyroid nodules are common clinical presentations to the clinic in Pakistan; hence, accurate identification of potential malignancy will have a great impact on patient management. Despite the highlighted advantages in ultrasound imaging, the evidence is not conclusive in predicting thyroid malignancies. Hence the diagnostic accuracy of ultrasound imaging needs to be evaluated by comparing with the results of a gold standard test. It is important for utilize the ultrasound imaging techniques optimally, especially to decide on cases necessitating surgical interventions. Therefore data from this study would help in establishing the accuracy of ultrasound as a quick, easy, non invasive and useful imaging modality in detection and early diagnosis of malignant thyroid nodule. Thereby preventing patients undergoing unnecessary biopsy procedure and would provide a more affordable approach for screening patients at risk.

OBJECTIVE: To determine the diagnostic accuracy of ultrasound in the detection of malignant thyroid nodule using histopathology as gold standard at Tertiary care hospital, Karachi.

MATERIALS AND METHODS: Sample size: Sample size was calculated by taking sensitivity 87.9% and specificity 58.7%. Margin of error $d=10\%$ and confidence interval 95%. Therefore sample size was taken as 163 patients.

Sampling technique: Non-probability consecutive sampling.

Inclusion Criteria:

- Patients undergoing ultrasound thyroid for suspicious nodule on physical examination of thyroid for more than one month will be included.
- Either gender.
- Age 30 to 60 years.

Exclusion Criteria:

- Non-consenting.
- Patients with history of diffuse goiter or multinodular goiter.
- Patients with history of hyperthyroidism or hypothyroidism.
- Patients with history of malignancy.
- Patient with uncontrolled hypertension.
- Patients with history of diabetes mellitus type II.
- Pregnant patients assessed by history and confirmed by dating scan.
- Patient with history of stroke, renal impairment and chronic obstructive pulmonary disease, asthma will be included.

P-180**"Frequency of pulmonary embolism in unexplained dyspnea among COPD patients"**

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Managing patients with suspected acute pulmonary embolism (PE) has advanced significantly in recent years. However, diagnosing PE in the context of chronic obstructive pulmonary disease (COPD) exacerbation remains a formidable challenge. COPD and PE often share similar clinical presentations, making it difficult to distinguish between them.

Post-mortem studies have revealed a startling finding – approximately 21% of COPD patients have PE. This underscores the urgent need to improve PE detection in COPD exacerbation, as it significantly increases mortality within

a year. Despite this pressing issue, the clinical probability of PE and the utility of non-invasive tests to rule out PE in COPD patients have not been adequately explored.

Acute exacerbation of chronic obstructive pulmonary disease (AECOPD) can mimic various conditions, including congestive heart failure, pneumonia, pneumothorax, pleural effusion, and PE. This diagnostic complexity prompts the need for heightened suspicion for PE in AECOPD patients with unclear origins. Studies by Jindal et al. reported an 18% frequency of PE in unexplained AECOPD cases, emphasizing the importance of specific clinical indicators.

Li et al. reported a 10.3% frequency of PE among 522 AECOPD patients, identifying several associated factors. These findings underscore the diagnostic complexity and multifaceted nature of PE diagnosis in AECOPD.

Our study aims to determine the frequency of PE in AECOPD patients with unexplained dyspnea. By shedding light on the true prevalence of PE in this population, we hope to empower clinicians to make informed decisions about diagnostic testing and treatment strategies.

In conclusion, our research seeks to bridge the knowledge gap surrounding the frequency of PE in AECOPD patients with unexplained dyspnea. This investigation may significantly impact clinical practice by raising awareness, increasing suspicion for PE, and ultimately contributing to early diagnosis, improved patient outcomes, and a deeper understanding of PE epidemiology in this challenging clinical scenario.

P-181**Malignant melanoma of the anal canal: A case report**

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Malignant melanoma of the anal canal is a rare disorder. Patients often present with local symptoms similar to benign diseases.

This article (Poster) is one case report of 49 year-old woman diagnosed with malignant melanoma of the anal canal. Initially presented with bleeding per rectum and clinical diagnosis of hemorrhoids was made then treated with local excision, followed by imaging and excisional biopsy. On imaging it was suspected to be neoplastic lesion with melanoma like features then on histopathology it came out to be malignant melanoma. Patient underwent V-Y advancement flap with local wide excision of tumor and colostomy. Patient is now discharged and further workup will be planned on coming follow ups.

P-182**Lady Windermere syndrome: A case report from Rawalpindi institute of cardiology (RIC)**

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CASE PRESENTATION: A 43 year old lady presented with productive cough and progressive shortness of breath over a period of 4 years. She was previously treated for tuberculosis and took a course of anti-tuberculosis treatment for 09 months, but her condition did not improve. On examination there were bilateral crepitations on chest auscultation. Chest radiograph showed bronchiectatic changes and reticulo-nodular shadowing in right middle lobe and lingula. Computed tomography revealed extensive bronchiectasis involving right middle lobe and lingula. Multiple discrete and coalescent centrilobular nodules were also seen in right middle lobe, lingual and left lower lobe. Sputum analysis and gene expert were negative for mycobacterium tuberculosis.

Lady Windermere syndrome refers to a pattern of pulmonary Mycobacterium avium complex (MAC) infection seen typically in elderly women who chronically suppress the normal cough reflex out of politeness. This cough suppression habit results in accumulation of the secretions in middle lobes of lungs resulting in MAC colonization. Imaging features are typical of nodules and bronchiectasis predominately in the right middle lobe or lingual or both. The patient was treated on the lines of non-tuberculosis mycobacterial infection and her condition is steadily improving on follow ups in pulmonology outpatient.

P-183

Remote cerebellar hemorrhage, as a complication of pediatric cardiac surgery: A case report

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CASE PRESENTATION: A 09 month old baby girl lady presented with cyanosis and symptoms of congestive heart failure. On examination there were bi-basal crepts. Chest radiograph showed cardiomegaly with right para-tracheal haze and opacity. Echocardiography and cardiac computed tomography revealed supra-cardiac total anomalous pulmonary venous return (TAPVR). Patient was operated and re-routing surgery was performed for correction of TAPVR. When patient was recovering from anesthesia, she stayed drowsy and developed posturing. CT brain was performed due to neurological symptoms. CT brain showed diffuse cerebral edema, remote cerebellar hemorrhage (RCH) and subarachnoid bleed.

Remote cerebellar hemorrhage is layering of blood amongst folia of cerebellum giving zebra sign. Remote cerebellar hemorrhage is a known complication of supratentorial surgery. Exact etiology is unknown. This iatrogenic phenomenon may also occur following spinal surgery, excessive cerebrospinal fluid (CSF) drainage intra-operatively, possibly due to break in dura resulting in cerebellar sagging, occlusion of venous flow, and pathogenesis of RCH.

We report first case of remote cerebellar hemorrhage after a pediatric cardiac procedure, possibly due to proximity of structures in 9 month old baby.

P-184

Congenital absence of sternum in infants, at Rawalpindi institute of cardiology - A case report

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A rare abnormality of the chest wall known as congenital absence of the sternum occurs when the midline mesenchymal strip fails to fuse during embryonic development.

Patients with complete sternal absence are more likely to experience mediastinal trauma, hypothermia, increased insensible fluid losses, cyanosis, and recurrent chest infections. With increasing age, surgical correction becomes difficult due to a decrease in compliance of the chest wall necessitating early surgical correction in the neonatal period. It may be associated with Cantrell's pentalogy, PHACES syndrome and Poland syndrome.

We present a case of 2 infants born to non-consanguineous parents, with congenital absence of sternum. These babies were brought to cardiac surgery department of RIC for reconstructive surgery. Their CT chest with contrast was performed. One of the patients had partial absence with a V-shaped cleft in superior chest, and the other patient had complete absence of sternum. In both patients the pericardium was seen abutting the anterior chest wall and there was no evidence of ectopic aortic. No gross cardiac malformation was noted. Reconstructive surgery was performed by primary closure using combined periosteal and muscle advancement flaps and sliding osteochondroplasty. Both babies had uneventful recovery.

P-185

Multi-detector CT imaging in transcatheter aortic valve implantation (TAVI screening)-how to interpret

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TAVI is an alternate to surgical valve replacement in aortic stenosis patients. Angiography of aortic root, aorta and its bifurcation upto femoral vessels is required to select suitable candidates, to select appropriate valve sizing and to assess details regarding vascular access route and geometry of aortic valve and aortic root. We will discuss various parameters on CT which are required in pre TAVI CT evaluation.

METHOD: 30 patients scheduled for TAVI underwent CT angiography of aorta upto femoral bifurcation. We analysed aortic annulus maximum and minimum dimension, perimeter, LVOT size, maximum size of ascending aorta, sinus of valsalva width, coronary heights, cross sectional measurements of minimum and maximum luminal vessels diameter, presence and extent of calcification. Valve sizing was decided by the annular perimeter

CONCLUSION: Pre procedural TAVI CT is the mainstay imaging modality in the valve/prosthesis sizing and extensive workup needed to plan and perform every TAVI procedure.

P-186

Diagnostic efficacy of dual energy CT for differentiating intracerebral hemorrhage from iodinated contrast material stain

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OBJECTIVE: To evaluate the efficacy of dual energy CT in early differentiation of intracerebral hemorrhage from iodinated contrast material staining.

MATERIALS AND METHODS: Patients with acute stroke who had undergone mechanical thrombectomy with iodinated contrast material were evaluated post procedural on dual energy TOSHIBA AQUILION one 640 slice, to differentiate areas of hyperattenuation secondary to contrast material staining from those representing haemorrhage. A dual energy scanner was used for imaging at 80 and 130KV. Mixed images, virtual unenhanced images and iodine overlay images were obtained. Follow up imaging after 24 and 48 hours on conventional CT were used as the standard of reference. A hyperattenuation only seen on VNC image was classified as hemorrhage. A hyperattenuation only seen on iodine map was deemed as contrast. True positive, true negative were calculated.

Inclusion criteria: All post MT patients of any age, male or female, with or without co morbidities, will be included in the study

Sample size: 50 (calculated from WHO calculator?)

RESULTS: Dual energy CT has sensitivity and specificity in early differentiation of bleed from contrast material staining. Early differentiation of bleed versus contrast will aid in early administration of required medication/management.

P-187**Complete duplication of urinary bladder in saggital plane along with type 3 urethrel duplication: Rare case report**

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Urinary bladder duplication along with urethral duplication is a rare congenital abnormality. It is usually associated with various other congenital anomalies of anorectal and spinal cord. As our knowledge, at least 300 cases were reported in the literature. It is affecting predominately males and mostly diagnosed in childhood or adolescence. We are reporting rare case presentation of renal transplant patient, come to know just after transplant due to lack of association with other congenital anomalies.

P-188**A rare case of pediatric Takayasu in a 9-year-old girl**

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INTRODUCTION: Pediatric Takayasu is a rare disorder presenting with nonspecific symptoms hence diagnosis may be delayed up to months or years.

REPORT: We report a case of 9-year-old girl known asthmatic, with history of atopic dermatitis responding to topical steroids, presenting with severe palpitations and signs of left ventricular failure. Echocardiography raised suspicion of abdominal coarctation. CT aortogram revealed ectatic ascending aorta, multiple tiny saccular aneurysms from origins of innominate and left common carotid artery and from descending thoracic, dissecting aneurysm of proximal left subclavian artery and mid thoracic aortic long segment stenosis. Peri-osteitis of right 2nd rib was also observed. Correlating with labs and clinically, patient was labelled as Type IIB Takayasu arteritis and was proceeded for TNF antagonist therapy in combination with steroids.

CONCLUSION: Main aim of early recognition of pediatric Takayasu arteritis is to control active inflammation and prevent vascular damage by timely appropriate medical treatment, surgical treatment reserved for fibrotic vascular stenotic segments.

P-189**Occipital pachygyria: A rare genetic autosomal recessive condition causing occipital cortical malformation**

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INTRODUCTION: Occipital lissencephaly-pachygyria is a rare entity which results due to mutated molecular mechanisms of neuronal migration and development.

CASE REPORT: We report case of two siblings presenting with myoclonic fits, developmental and intellectual delay and abnormal eye movements with squints. Both were females and they were aged 2.5 and 3.5 years respectively. Both children had unremarkable birth and past history. The elder girl had mild

muscular weakness. MRI brain of both siblings showed smooth flat bilateral occipital and posterior parietal lobes mainly the lateral surfaces, characterized by reduced cortical sulcation with loss of secondary and tertiary gyri and with gliosis of the underlying white matter depicted by T2W and FLAIR hyperintensity and mild ex-vacuo dilatation of occipital horns of lateral ventricles. MRS demonstrated choline peak with mildly raised choline to creatinine ratio and raised NAA peak. Such MRI appearance is rare genetic disease and literature suggests it is caused by LAM 3 mutations.

P-190**Radiology before pathology**

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Carotid body tumor is a rare type of neoplasm, occurring in about 1 in 30,000 people. It is potentially life-threatening entity that presents challenges in diagnosis and management. Prioritizing diagnostic imaging for highly vascular carotid body masses instead of biopsy is of core importance. Imaging can detect lesions before clinical signs appear.

A 49-year-old normotensive female presented with a painless, gradually growing mass on left side of neck since past 13 years. Physical examination revealed a palpable, pulsatile, mobile mass in horizontal planes which was immobile on vertical planes. Patient was vitally stable hence vanillylmandelic acid was not done. On ultrasound, a highly vascular mass in left carotid space encasing the carotid vessels was noted. CT angiography confirmed the diagnosis of chemodectoma with positive Lyre sign; an intensely enhancing mass encompassing, common carotid its bifurcation and tributaries. Carotid body tumor excision was done successfully. Histopathology report was consistent with carotid paraganglioma. Patient remained vitally stable and had uneventful recovery without any neurological deficit.

Non-invasive radiological diagnosis of chemodectoma is vital before any other intervention due to risk of life-threatening bleeding during biopsy.

P-191**Metastatic chronicles: A unique radiological tale of malignant retroperitoneal solitary fibrous tumor**

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INTRODUCTION: Solitary fibrous tumors (SFTs) account for less than 2% of all soft tissue tumors and can originate at any site of the body. Abdominal SFTs are seen mainly in the retroperitoneum, and more frequently in the pelvis. To our knowledge, only a handful cases of malignant retroperitoneal SFTs have been reported, with metastasis being an even rarer occurrence. We present a unique case of malignant retroperitoneal SFT with widespread metastasis over the course of 6 years.

CASE OUTLINE: A 44-year-old man presented with a history of recurring abdominal pain. Computed tomography (CT) showed a large heterogeneously enhancing retroperitoneal mass with mass effect on the adjacent structures. Angioembolization of the feeding arteries was done, followed by surgical

excision of this mass. Histopathology confirmed that it was a malignant SFT. After two years of being disease-free, the patient presented with multiple bone metastatic deposits. He underwent chemotherapy; however, post-therapy PET/CT and subsequent CT scans revealed a variable response to treatment. Two years later, the patient reported abdominal numbness and a loss of strength in both lower limbs. The lesion at the C7-T1 vertebral bodies had spread into the neural foramina and spinal canal, compressing and dislocating the spinal cord. This lesion was surgically removed, followed by radiation therapy. Histopathology of the excised mass confirmed it was metastasis from the malignant SFT.

Despite additional chemotherapy and radiation over the next 9 months, serial imaging showed widespread disease progression. Hence the patient was discharged on request with a suggestion for palliative care.

CONCLUSION: Radiologists should consider solitary fibrous tumors as a possible differential of retroperitoneal neoplasms. Presurgical angioembolization can help reduce bleeding during surgery and improve surgical outcomes. This case underlines the need for vigilant radiological monitoring and prompt intervention for new metastatic lesions.

P-192

All those liver masses are not necessarily from the liver: A rare case of giant renal cyst mimicking hepatic lesion in a CLD patient.

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Massive renal cysts are rarely reported. Smaller cysts are usually asymptomatic however larger cyst may become symptomatic by causing mass effect on surrounding structures. We report a rare case of 61 years old woman who presented to our outpatient department with diffuse abdominal pain. Pain was mild, intermittent and localized to right upper quadrant. There was no associated vomiting, nausea or fever episodes. Her previous medical history was only positive for hepatitis B. She denied taking any medications for that. On clinical examination the patient's temperature was 39.6°C, blood pressure was 118/82 mm Hg, and heart rate was 85 beats per minute. No pertinent laboratory data was available.

She was referred to radiological department for abdominal ultrasound. Mildly undulating hepatic margins were seen with caudate and left lobe lateral segment hypertrophy along with mild splenomegaly and upper abdominal collaterals. Incidental finding of a large well-defined, lobulated, anechoic area was seen arising from the upper polar region of the right kidney measuring up to 11.4 x 9.5 x 12.2 cm (AP X TRV X CC) (volume of 700 mL). The aforementioned cystic lesion had internal calcification showing posterior acoustic shadowing and measuring up to 2.2 mm. Few internal septations were noted. No definite internal vascularity was seen on Doppler images. This mass was closely abutting the left lobe of liver with inseparable fat planes. Patient loss to follow up when referred to surgery for evaluation.

Incidental finding of cyst of the renal origin mimicking as a hepatic lesion in a CLD patient is seldom reported till date. Determining the origin of cyst preoperatively can sometimes be challenging and needs accurate diagnosis as this can be misinterpreted keeping in view other findings.