

**Abstracts presented at the 38th Annual Conference
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38th Annual Conference 2022
Radiological Society of Pakistan
ABSTRACTS

INVITED LECTURES (I)

I-1

Imaging of acute abdomen in pregnancy

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The diagnosis of sudden abdominal pain during pregnancy is quite difficult. The use of standard imaging techniques is constrained due to hazards to the foetus, the vast range of potential diagnoses, and the challenges of clinical assessment. Delays in diagnosis can result from this, which raises the danger to the mother and the foetus. Imaging methods without ionising radiation should be preferred. Sonography is still the primary method, but anatomical visualisation may be limited because the pregnant uterus pushes aside nearby structures. MRI offers superior cross-sectional imaging examination of the abdomen's and pelvis' soft tissues, and no research has yet revealed measurable negative effects on the foetus at any gestation, although there is still potential risk of tissue heating from radiofrequency pulses. A wide range of diseases can however be evaluated using limited protocols. The greatest amount of ionising radiation is exposed to the foetus during computed tomography; however, it might be required in some circumstances, especially in instances like trauma/pulmonary embolism. The patient needs to be updated and any possible dangers to the patient or foetus should be described in detail. In this review talk, a radiological guide regarding imaging selection to confirm the underlying cause of acute abdomen in pregnancy will be presented. Moreover, utilising concrete examples from literature, the benefits and drawbacks of each imaging technique will also be discussed.

I-2

PAS disorders: When and how to image?

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PAS disorders were first defined by Luke *et al* in 1966 to include both abnormally adherent and invasive placentas. Three categories are now considered: (1) adherent placenta accreta, also described by pathologists as "placenta creta, vera or adherenta" when the villi simply adhere to the myometrium; (2) placenta increta, when the villi invade the myometrium; and (3) placenta percreta when villi invade the full thickness of the myometrium including the uterine serosa and sometimes adjacent pelvic organ.

The term PAS disorders proposed by Luke *et al.* provides standardized terminology, which covers the depth of villous invasiveness, lateral extension of accreta placentation, and the possible combination of different depths of invasiveness in the same placenta accreta. Thus, for the purposes of simplicity and clarity, the present guidelines use PAS disorders to describe the different pathological forms of accreta placentation.

Ultrasound imaging is the most commonly used technique to diagnose PAS disorders prenatally. There are a vast number of studies reporting on sonographic markers of PAS. However, the terminology employed to describe the different categories of ultrasound signs is heterogeneous and complex. The use of transvaginal ultrasound is key unless there is an absolute contraindication.

Ultrasound features of PAS may be present as early as the first trimester. In the second and third trimesters, multiple ultrasound findings have been described for diagnosis of PAS. Tertiary centres are also using MRI in problematic cases, for preoperative diagnosis and surgical planning.

There is increasing evidence that the management of women with PAS disorders by multidisciplinary teams in centers of excellence decreases maternal morbidity and mortality when compared with standard obstetric care. Adequate multidisciplinary team management of PAS disorders can only be arranged when the diagnosis is made prenatally and the involvement of pelvic organs and tissues around the uterus has been accurately defined.

I-3

Congenital uterine anomalies: What a radiologist needs to know?

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Müllerian duct anomalies are congenital abnormalities that occur when the Müllerian ducts do not develop correctly. This may be as a result of complete agenesis, defective vertical or lateral fusion, or resorption failure. Despite these anomalies being common, the majority is asymptomatic. Obstruction of the Müllerian duct may occur, and patients present with an abdominal mass and dysmenorrhea. Delayed treatment may result in severe consequences and potentially infertility. Patients may also present with recurrent miscarriages. The objectives of this review are: to understand basic embryology and classification of mullerian duct anomalies and its associations; to identify the role of imaging and to learn the reporting lexicon for mullerian duct anomalies.

I-4

First trimester anomaly scan in identification of major structural anomalies and the role of aneuploidy markers

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Fetal structural malformations are seen in 3 to 5% of all pregnancies. Detection of malformation is tremendously improved with improvement in imaging technology such as transvaginal sonography and 3D ultrasounds. In majority of countries, second trimester scan between 18 and 22 weeks remains the standard of care for fetal anatomical assessment; however, most recent literature shows a significant improvement in detection of fetal abnormalities in first trimester of pregnancy. Besides nuchal abnormalities a wide range of central nervous system, heart, anterior abdominal wall, urinary tract, and skeletal abnormalities can be diagnosed between 11 and 14 weeks of scan. The clear benefits of first trimester ultrasound are early detection and exclusion of major congenital anomalies (not compatible with life or followed by severe handicap), reassurance, and relatively easier pregnancy termination if required. This review lecture highlights the scope of first trimester anomaly scan apart from its conventional role in detection of chromosomal abnormality

I-5**Role of radiology in living donor liver transplant**

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Liver transplant patients can have a variety of complications in the immediate post operative period as well as later. Diagnostic modalities are an important tool to investigate problems such as peri graft collections, arterial thrombosis, venous thrombosis. Ultrasound is used as primary screening or diagnostic tool with CT used whenever further confirmation on any finding is required. MRI is used occasionally in the immediate post op period but gains importance in late period to assess biliary stenosis, one of the most common post-transplant complications. We will review role of radiology modalities to diagnose some of the common complications after liver transplant and also review role of interventional radiology to treat some of these entities.

I-6**GI case based interactive session**

Saleha Anwar

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Gastrointestinal radiology is very vast and diverse. In this session we would try to encompass some interesting GI pathologies using a wide variety of modalities, including X-Ray, CT Scan and MRI. Some tips about how to interpret an abdominal scan would also be shared. This would be KAHOOT based interesting learning experience. The attendees are advised to download Kahoot app on their smart phones or laptops for this new learning experience.

I-7**Defecating proctography and colonic transit time**

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Defecating proctography also referred to as evacuation proctography or voiding proctography, has been established as a particularly useful fluoroscopic examination for patients with defecation difficulties because it enables a functional, real-time assessment of the defecation mechanics in a physiologic setting. Indications are constipation, incomplete evacuation, incontinence and perineal pain or discomfort. Structural and functional alterations can be observed which include rectocele, internal rectal intussusception, external rectal prolapse, enterocele and pelvic floor dysfunction or dyssynergia.

The normal Colon Transit Time in healthy volunteers is 35 hours with an upper limit of 72 hours. The presence of >20% of ingested radio-opaque markers is an abnormal finding. If markers are distributed throughout colon it suggests hypomotility or inertia. If markers are mainly distributed in the recto-sigmoid region the patient has functional outlet obstruction.

I-8**MRI liver in focal lesions**

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This review talk on magnetic resonance imaging (MRI) of focal liver lesions provides an overview of liver MRI protocol, diffusion-weighted imaging,

dynamic contrast enhanced sequences and chemical shift imaging. The aim is to discuss the most commonly encountered benign and malignant lesions with emphasis on imaging appearance and the diagnostic performance of MRI. The learning Objectives included describing:

- 1) ideal imaging technique and sequences for MRI Liver.
- 2) imaging appearance of commonly encountered liver lesions on MRI.

I-9**Sustainable workforce development**

Tania Vanburen

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This review talk on Clinical Radiology training provides an overview of career pathway options and their positive impact on workforce development.

The aim is to discuss the importance to workforce growth and service delivery of high-quality Clinical Radiology education.

The learning objectives are to describe:

- 1) why Clinical Radiology should be the model of choice in training to support building the workforce?
- 2) how world class education, training and mutual learning, coupled with high quality services, can enhance patient care?

I-10**The dramatic impact of COVID-19 on radiology training in the UK**

Stephen Harden

*University Hospital, Southampton, UK.
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COVID-19 has had a dramatic impact on Radiology training. Now we have become used to living and working with the virus, we can review the major changes that were introduced to ensure Radiology training could be maintained. This presentation will review the important opportunity we currently have to analyse the traditional training methods and the newer digitally focussed techniques, to determine which combination works best. This gives us an insight into how radiology training will look in future.

Learning objectives:

- 1- To understand how the pandemic has changed Radiology training
- 2- To start to think about how Radiology training can best be delivered in future

I-11**Certificate of eligibility for specialist registration (CESR) process**

Robin Proctor

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This session will review the process for gaining GMC specialist registration in radiology through application for a Certificate of Eligibility for Specialist Registration (CESR). The focus will be on understanding the process in order to guide applicants. CESR is already a large amount of work and a greater page count in the submitted bundle does not necessarily improve the chances

of success, hence the session will give practical tips on how to maximize the utility of what is submitted in order to save work while maximizing the chances of a successful application.

I-12

Learning from errors without blame or shame

Jonathan Smith
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Every radiologist makes mistakes. This lecture will emphasise the importance of developing a positive culture when looking at our discrepancies.

Learning objectives:

1. Identify the available resources from the Royal College of Radiologists (RCR) which include: guidance on running a departmental Radiology Events And Learning Meeting (REALM); the quarterly Radiology Events And Learning (REAL) newsletter; the national RCR REAL conference held each year in a different UK city.
2. Understand the benefits of learning from experts. Once common patterns of errors have been identified, targeted pitfallsteaching can have a positive effect on individual and group performance.
3. Show how REAL chairs can demonstrate compassionate leadership and improve morale by Acknowledging and Celebrating Excellence (ACE). A "good spot" can deliver the same learning points as a "bad miss" in a more positive way.

I-13

Importance of research in radiology

Imran Syed
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The talk is aimed at stressing the need for all Radiologists to understand the significance of Research in professional and educational development and the development of a CPD profile which is self-fulfilling.

Learning objectives:

1. Defining scope of research opportunities
2. Determining purpose, direction and weighting of research studies and the academic team that is thus created to support and sustain research projects.

I-14

Ultrasound guided foot and ankle intervention

Syed Babar Ajaz
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Ultrasound has been a major player in diagnosis of various sports and orthopedic injuries for a long time. This has been used both on and off the field for acute and chronic conditions. However, over the last decade we have seen emergence of the therapeutic use of imaging in sports and musculo-skeletal medicine. This use involves use of ultrasound guidance in various injections. Image guided injections are accurate and precise in delivering the drugs to the intended target point.

There is a whole armamentarium of drugs available to the radiologists in management of various injuries. This includes steroids, visco-supplement

agents for joints and tendons and the use of blood and platelet rich plasma (PRP) for management of various tendinopathies. One should be familiar with the technique, mechanism of action, indications, contra-indications, technique and various post procedure complications associated with the use of these agents.

I-15

MRI of the ankle

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The objectives of this review talk are to:

- 1- outline the normal MRI anatomy of the ankle, identify key structures and common MRI techniques,
- 2- highlighting pathologies of the Achilles' tendon, plantar fascia, and flexor and extensor tendons,
- 3- focus on ligamentous anatomy and common injuries to the main ligaments
- 4- evaluate common injury mechanisms and patterns of MRI findings in inversion and eversion injuries,
- 5- explain various coalition patterns and
- 6- grade and describe Osteo-chondral defects, Tarsal tunnel and sinus tarsi syndromes.

I-16

Ultrasound of the foot and ankle

Robin Proctor
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This session will review as to how ultrasound can be used to aid diagnosis and treatment of pathologies in the foot and ankle. It will offer practical hints and tips for imaging of tendons, ligaments, joints, lumps and other lesions. Delegates will gain an appreciation of the role of ultrasound and other modalities in imaging the foot and they will also become familiar with imaging techniques and the appearance of common and less common pathologies on ultrasound.

I-17

Role of weight bearing cone beam CT in the management of foot and ankle pathology

Sajid Butt
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Radiological assessment of foot and ankle pathology is more accurate when performed in a weight bearing posture. Whilst the plain radiographic techniques allow this assessment, the imaging obtained is subject to accurate and reproducible radiographic techniques. The images are seen in a 2-D format and have lesser sensitivity and specificity when compared to CT scan images. Conventional CT scan imaging provides greater detail but is obtained in a non weight bearing posture. Cone beam CT combines weight bearing imaging with CT scan imaging. Radiation dose imparted is lesser than the dose of conventional CT. At the RNOH Stanmore we have been using this modality since 2008. We have data of around 6000 patients and the foot and ankle surgeons find the details extremely useful.

I would share our experience of using this modality in the radiological assessment of complex foot and ankle lesions.

I-18**CMR assessment of cardiac masses with cardiac MRI**

Stephen Harden
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This is an educational presentation on the important role cardiac MRI has in assessing cardiac masses. It will review recommended imaging sequences, combining functional imaging, tissue characterising sequences and the critical importance of post contrast imaging including first pass perfusion, post gad TI scout and late enhancement sequences. The typical appearances of benign and malignant tumours, as well as non-neoplastic masses, will be presented, together with a logical approach for reaching a conclusion.

Learning objectives:

To understand the importance of cardiac MRI in imaging cardiac masses
 To recognise common cardiac masses by their MRI imaging characteristics
 To understand the thinking required to develop a confident MRI diagnosis

I-19**Visceral Artery Stenting - Pearls and pitfalls**

Sakib Moghal
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With a particular focus on the technical considerations and lessons learned from our local practice, the learning objectives include:

- 1) Understanding the indications and evidence base in the management of visceral artery stenosis.
- 2) Appreciating the procedural steps involved in endovascular stenting.

I-20**A diagnostic and systemic approach to identify mediastinal pathologies on imaging**

Nasreen Naz
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The mediastinum contains essential vascular and nonvascular organs and other structures. A wide range of neoplasms and other abnormalities that may originate from this anatomic region of the chest, the division of the mediastinum into distinct compartments facilitates communication between healthcare professionals in a multidisciplinary setting, aids in the planning of biopsy and other surgical procedures, and also helps to narrow down the differential diagnosis of mediastinal abnormalities seen on imaging studies. Mediastinal abnormalities initially identified at conventional radiography. Chest radiography is a very common examination, and radiographic identification of an unexpected mediastinal mass is important. The Objectives of this talk are: To outline the normal anatomical landmarks of mediastinum on CXR/ CT, to build a diagnostic and systemic approach to identify mediastinal abnormalities, to understand different, lines. Stripes and mediastinal signs, to identify the radiographic features on different mediastinal compartment that help in narrow down the differential diagnosis, o characterize the lesion as solid/ cystic/fat containing on CT, to Recognize and describe imaging features of common Mediastinal pathologies.

I-21**A site-specific MDT board**

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A Radiologist plays a pivotal role in site specific multidisciplinary team (MDT) Tumor Boards. Our country is going through the phase of establishment of these MDT Tumor Boards. One of the prime examples is the establishment of City Tumor Board in March 2010, which is an independent Non-institutional Tumor Board. As per international standards of MDT final management recommendations cannot be made without a thorough peer reviewed expert radiological input. We are witnessing a very positive change in our Pakistani Cancer patients care and management via skill development in MDT Tumor Boards. Dr Fahad Haroon and Dr Shayan Seerat will highlight opuscule with talk delivered by Prof. Ahmed Nadeem Abbasi . The session will address and highlight the importance of expert Radiological input for a high quality patient centered recommendation coined in a site specific multidisciplinary team (MDT) Tumor Board.

I-22**Updates in multiparametric prostate MRI**

Imran Syed
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This is an overview of Prostate Imaging and the current best practice sequences and newer techniques in aligning multi-parametric Imaging with the needs of the Urologist.

Learning objectives:

1. Understanding the significance of fusion studies
2. Improving the morphological description of Prostate lesions through these techniques.

I-23**GU interactive case based session**

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I-24**Neurodegenerative disorders - Interactive case based session**

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Neurodegenerative diseases are growing cause of cognitive impairment and morbidity particularly in elderly age group and include a diverse group of entities. Although they have different clinical manifestation and have heterogeneous underlying physiology, they may have features, which are often similar and may overlap.

The aim of this case based interactive session is to present typical neuro imaging features in selected uncommon neurodegenerative disorders and to provide a practical approach to imaging findings useful in every day clinical practice.

I-25**How to interpret & report imaging as clinical radiologists**

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Crafting a radiology report is an artisanal, reflective, and creative process. It is the most important communication from a radiologist to help direct patient care. This talk provides an opportunity to discuss how to report an imaging clinically considering patient's past history, symptoms and results of other clinical investigations. We will talk about the expectations of patients and referring teams from a good report i.e., a diagnosis or a list of pertinent differentials along with the suggestions of further appropriate imaging or other investigation. The learning objectives included discussing the:

- 1) expectations of a referring clinical team and patients
- 2) important and key components of a good clinical report
- 3) various reporting styles
- 4) importance of urgent communication and a structured way to establish it
- 5) standards and guidelines for reporting set out by RCR, RANZCR and ACR.

I-26**Skull base imaging**

Timothy Beale

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I-27**Interactive case based review on neuroimaging**

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I-28**MRI spine: Basics revisited**

Anwar Ahmed

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In the 1980s, magnetic resonance imaging (MRI), a revolutionary new diagnostic technique, launched a brand-new era of medicine. Radio waves, Magnet are used in sophisticated MRIs to scan the spine's bones and soft tissues for lesions and anomalies. This imaging technique offers a noninvasive completely new way to search for anomalies that could be the source of leg pain/numbness, sciatic, or low back discomfort.

If we know anatomy, clinical background where to look, it's fairly simple to comprehend how to read an MRI of the spine, and we radiologists make it extremely simple.

I-29**US of oropharynx & oral cavity**

Timothy Beale

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I-30**Oncology reporting: The importance of being on one page!**

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Oncological imaging is a highly specialized field where the implications of accurate reporting are critical in determining the treatment pathway the patient will follow. As radiologists we need to know what implications our report will have on the therapy and prognosis of the patient. We also need to be certain that what we intend to say and what the clinician understands are the same thing. We will discuss the importance of structured reporting of oncology scans and describe how to construct a good oncology report and how general radiologists can make their report comprehensible and useful to the oncologist. The importance of using the proper lexicon and standardized staging and follow up vocabulary will be stressed.

I-31**Imaging in Prostate cancer**

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Serum PSA estimation remains mainstay for the screening of carcinoma prostate. Imaging has played a minor role in the initial diagnosis and has been used for staging of advance stage diseases. However Multiparametric magnetic resonance imaging (mpMRI) has emerged as the imaging method, best able to detect clinically significant prostate cancers and to guide biopsies.

I-32**FDG PET-CT based metabolic response assessment in solid tumors**

Maseeh uz Zaman

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Tumor response may be evaluated on basis of anatomical or metabolic metrics. Anatomical changes although appear late and having limitation of reproducibility, RECIST is the most commonly used criteria globally. Metabolic changes which appear quite early in phase of the treatment are more sensitive than morphological changes. ¹⁸FDG uptake has a strong correlation with viable tumor burden and change in ¹⁸FDG uptake has significantly high diagnostic accuracy for predicting tumor response. PERCIST criteria must be used for a precise and early prediction of tumor response. However, lack of standardization in PET/CT imaging protocols is the fundamental reason of dearth of its popularity. For ¹⁸FDG avid lymphomas, Deauville 5-PS is the most reliable response evaluation criteria which are being used for both Hodgkin and Non-Hodgkin lymphomas worldwide. It is imperative that all existing PET/CT facilities must work together to adopt same imaging protocols to make subtle changes in ¹⁸FDG tumor uptake more meaningful for better disease outcome.

I-33**Classification of vascular anomalies and radiological imaging spectrum**

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Vascular anomalies are categorized into two main varieties, Vascular Tumors (benign, locally aggressive or borderline and malignant) and vascular malformations.

Vascular malformations are further characterized into capillary malformation (CM), lymphatic Malformation (LM), venous malformation (VM), arteriovenous malformation (AVM), arteriovenous fistula (AVF). combined malformation have two or more vascular malformations in one lesion. Vascular malformation may be associated other anomalies and genetic abnormalities such as Klippel-Trenaunay syndrome (CM + VM ± LM + limb overgrowth *PIK3CA*), Parkes Weber syndrome (CM + AVF + limb overgrowth *RASA1*),

Servelle-Martorell syndrome (limb VM + bone undergrowth), Sturge-Weber syndrome (facial + leptomeningeal CM + eye anomalies ± bone and/or soft tissue overgrowth *GNAQ*), Maffucci syndrome (VM ± spindle-cell hemangioma+ enchondroma *IDH1 / IDH2*).

The Radiological diagnosis involves plain radiography, grey scale and color Doppler Ultrasound, MRI with contrast and in some cases CT Angiography. The main diagnosis depends upon correlation of ultrasound and MRI findings, which both are having no radiation hazard in paediatric population. Usually these anomalies have the genetic abnormalities *PIK3CA*, *RASA1 / EPHB4*, *STAMPB*, *GNA11*, *GNAQ*.

I-34

Enlarged CSF spaces of posterior cranial fossa

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Cystic malformations within the posterior cranial fossa are common findings in pediatric neuroimaging. Differentiating the various diseases associated with extra- and intra-cerebellar cystic malformations is essential in terms of diagnosis, management, prognosis, and counselling of the affected families. The objectives of this talk are: to review of normal anatomical landmarks of posterior fossa, to learn a quick systemic approach for cystic spaces of the posterior fossa and to review the main cystic pathology based on proposed system approach.

I-35

Neonatal cranial ultrasound

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The cranial ultrasound in neonate in is now being commonly used to assess the brain & its adjacent structures. It is part and parcel of NICU and pediatric department with sub-specialty of pediatric radiologist.

It is the most valuable tool to evaluate with confidence the germinal matrix, intracerebral as well as intraventricular hemorrhages along with inflammation, hypoxic ischemic encephalopathies, infarcts as well as hydrocephalus. It can help in treatment and its follow-up with response to treatment along with prediction of outcome and sequelae of the pathology, anatomy, technique, pathologies and the limitations due to instrumentation as well operator dependency will also be discussed. The talk will cover the aims, advantages and disadvantages of the examination along with the technique of performing ultrasound. The emphasis on anatomy and technique of neonatal brain on ultrasound in different planes and levels with different approaches will be made. This will also include a large atlas and good quality images of common intracranial pathologies with a brief description. So at the end of the presentation the audience will be able to have some idea of as how to make the best use of the neonatal cranial ultrasound how and when.

I-36

Pearls, pitfalls and mimics in pediatric neuroimaging: Learn from mistakes

Marya Hameed

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Children present with a wide spectrum of neurological pathologies, that differs from adult population with characteristic findings. Mimicry is often, confusing when analyzing scans leading to a discrepancy in the diagnosis and thus altering the patient's management. Imaging pitfalls creates diagnostic dilemma, their thorough knowledge and its avoidance is considered as basic pillar of high class radiology services. In this review, we discuss various conditions such as brain tumors, myelination process, and pathologies of perivascular spaces, extra-axial spaces and the effects of different treatment option on brain. Discrepancies in imaging and clinical presentation must be treating with caution and warrant further investigations to exclude other possibilities. This review would serve as a vital educational resource and guide for radiologists across all levels of experience, focusing importance of clinical information along with key radiological findings for accurate image interpretation.

I-37

Risk stratification of adnexal masses according to MRI ovarian-adnexal reporting and data system (O-RADS)

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The objective of this talk is to learn how to grade the adnexal lesions based on the imaging parameters on MRI pelvis according to the American College of Radiologists (ACR) Ovarian and Adnexal Reporting and Data System (O-RADS). This is intended to determine their nature, with the aim to avoid unnecessary investigations and delay in referrals while managing these patients. Consistent application of MRI O-RADS while reporting pelvic masses provides a standardized and reproducible assessment of adnexal lesions. Risk stratification scoring through this system aids in considerably accurate differentiation of malignant from benign lesions and helps the gynaecologists in expeditious referral of these patients to oncologist for further management.

I-38

Chemical shift imaging in pelvic MRI

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Chemical shift imaging has now become essential tool in routine body MRI. Its basic function is that it allows unambiguous separation of lipid and water signals. Useful images include In / opposed-phase, water / fat-suppressed images and FAT, which can be obtained with spin-echo or gradient-echo methods. Chemical shift techniques can also be used to reduce artifacts and to expand dynamic range, this quality has benefits of visualization of pelvic pathologies.

In this educational talk, the aim is to emphasize the role of chemical shift MRI in different pelvic MRI protocols, to understand the need of chemical shift images and gain the maximum from the obtained images during the process.

I-39**Coronary artery disease reporting and data system: A comprehensive review**

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The Coronary Artery Disease Reporting and Data System (CAD-RADS) is a standardized reporting method for coronary computed tomography angiography (CCTA). It summarizes the findings of CCTA in 6 categories ranging from CAD-RADS 0 (complete absence of coronary artery disease) to CAD-RADS 5 (total occlusion of at least one vessel). It is applied on individual lesion basis for the highest grade of the stenotic lesion. The CAD-RADS also provides category-specific treatment recommendations, helping patient management. The main objectives of the CAD-RADS are to improve the consistency in reporting, facilitate the communication between interpreting and referring clinicians, recommend the best course of patient management, and produce consistent data for quality improvement, research and education. However, CAD-RADS has many limitations, resulting into the misclassification of the observed findings, misinterpretation of the final category, and misguidance for the treatment based upon the single score. In this review, the authors discuss the CAD-RADS categories and modifiers, along with the strengths and limitations of this new classification system.

I-40**Doppler ultrasound in renal hypertension**

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I-41**Artificial intelligence in radiology: What should we know?**

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This study aims to review the basis for artificial intelligence (AI) in Radiology, its difference from traditional radiology reporting and incorporating its evolution in future practice.

AI is adding value to imaging interpretation. In radiomics, AI can aid the analysis of the features and help other omics data. Preparing Imaging Biobanks would become an important infrastructure to organize and share the data in order to train AI models. AI can be used as a tool to assist technologists, post graduate registrar and radiologists in patient's setting protocol, dose parameters and estimation of radiation risks. Coupled with CDS, improve decision process and optimize radiological workflow by linking words, images and quantitative data.

I-42**HRCT temporal bone in the diagnosis and management of cholesteatoma**

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The objectives of this talk includes, how to precisely determine the characteristic HRCT findings in patients with suspicion of cholesteatoma to identify early

and advanced cases providing a surgical road map to the ENT surgeon. This will enable excellent surgery with no residual lesion or operative complications. Complex anatomy and small area makes it a difficult anatomical region to assess demanding high clinical and radiological expertise. This leads to good patient outcomes and satisfaction. The importance of HRCT imaging lies in the early detection of cholesteatoma leading to prompt surgical intervention for disease management and avoid possible complications. This is further consolidated with rich experience and skill set of the radiologist, importance of MDT meetings and teamwork leading to excellent patient outcomes and satisfaction.

I-43**Lung cancer screening**

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Lung cancer screening with low-dose CT (LDCT) is an imaging strategy that is beginning to be adopted for high-risk patients. Lung cancer is the most common cause of cancer death worldwide, and there is accumulating higher level evidence that a mortality benefit exists with the screening of carefully selected patients. Two large randomized trials have shown that screening with LDCT reduces lung cancer mortality in patients at risk due to current or past smoking.

The Lung-Rads screening classification is used for the purpose of standardising follow up and management. The presentation will share the salient features of this classification and also discuss steps taken to set up and implement the screening program in our setup.

I-44**Post breast cancer treatment imaging appearances - Is it really a dilemma?**

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The objective of this talk is to discuss the conventional imaging findings after breast conservative surgery and radiation therapy and to understand the normal findings and permit the early detection of recurrence. Imaging the post treatment breast is really challenging due to its reduced compressibility, anatomical alterations and overlapping features of benign post treatment changes and tumor recurrence. Understanding the evolution of benign findings on imaging like breast edema, skin thickening, architectural distortion, fluid collections and fat necrosis is of paramount importance in reducing the unnecessary investigations and follow up and early detection of recurrent lesion.

I-45**Benign mimickers of breast cancer: Imaging appearances and clinical management**

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Various benign breast entities have clinical presentation and imaging features that can closely mimic breast cancer. These benign breast diseases may be associated with suspicious imaging appearances resulting in difficulty to

differentiate them from breast cancer. Frequently, biopsy is required for confirmation of diagnosis in these cases; however radiologic-pathologic correlation can be specifically challenging in certain specific contexts. The purposes of this review are to:

- 1- demonstrate various benign entities of the female breast that can have malignant imaging features.
- 2- review mammography, ultrasound and MRI findings with pathology correlation.
- 3- to reinforce importance of radiologic- pathologic correlation for these lesions,
- 4- avoid delay in their appropriate management and
- 5- obviate unnecessary surgical intervention.

I-46

Contrast enhanced mammography - A new emerging technique

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Contrast-enhanced mammography (CEM) is helpful in resolving equivocal findings detected at conventional breast imaging examinations. It can be used for the preoperative staging of breast cancer to evaluate the extent of disease. Screening CEM could be performed as an alternative to breast MRI in women who are at an increased risk of developing breast cancer.

We will present our initial experience at AKUH of a few cases of CEM done after diagnostic mammograms and biopsy proven malignancy to rule out multifocal and multicentric disease. These cases show that CESM has comparable efficacy to that of MRI.

I-47

Protocols of breast cancer imaging and interventions: Case based review

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The objective of this case-based review talk is to ascertain the importance of proper work up and techniques utilizing different breast imaging modalities in a diagnostic or screening setting for breast cancer. It emphasizes as to how the radiologist can help women and clinicians in proper diagnosis, extent of disease, localization of cancers and choosing the best treatment options. A well-trained breast radiologist is crucial for the proper management of breast cancers.

I-48

A personalized breast care pathway

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Breast cancer represents an urgent global priority. Incidence and mortality rates for Breast cancer are rising globally. However, significant disparity related to, cancer stage at presentation, exists between regions. Access to

healthcare is a contributing factor. Looking differently at breast care with a personalised approach enables early detection of disease. Early detection of breast cancer significantly improves patient outcomes. The objective of this review to explore the breast care pathway with the latest Ultrasound AI innovations.

ORAL PRESENTATIONS (O)

O-1

Placenta accreta and beyond!

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OBJECTIVE: To evaluate the diagnostic accuracy of ultrasound and MRI in assessing placental topography in placenta accreta spectrum disorders for antenatal diagnosis in high risk patients.

METHODS: An observational study was done at Radiology Department of Jinnah Postgraduate Medical Centre including all patients referred for imaging with suspected diagnosis of Placenta Accreta Spectrum with Ultrasound gray scale and Color Doppler imaging. MRI Pelvis was reserved in cases with inconclusive ultrasound findings in complex cases. MRI Pelvis plain study was done on 1.5T MR using FASE, (Fast Advanced Spin Echo) sequence to reduce maternal and fetal motion artifacts. T2W breath holding was also performed as an additional sequence in cases where possible. Grading of myometrial invasion on MRI was reported according to the specific signs i.e. placental heterogeneity, and bulge with irregular contour, thinning or loss of retroplacental zone, disorganized vascularity and dark intraplacental bands.

RESULTS: 35 patients were evaluated in the age range of 25-47 years over a period of 6 months. Ultrasound detected placental invasion in 28 out of 35 cases whereas it was confirmed on MRI Pelvis in 18 out of 35 cases. Operative findings later confirmed them in 16 cases. MRI achieved specificity, sensitivity and accuracy of 100%, 72 % and 83.3% respectively.

CONCLUSION: Ultrasound is a reliable imaging modality in diagnosing cases of Placenta Accreta Spectrum. However, in cases where the results of US are equivocal, magnetic resonance imaging (MRI) is the next-level imaging modality.

O-2

MRKH syndrome on MRI: Patterns of uterine bud blossoming

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OBJECTIVE: To characterize the MRI anatomical features in clinically suspected cases of Mayer-Rokitansky-Küster-Hauser (MRKH) syndrome undergoing workup for primary amenorrhea/ infertility and correlate them with patterns of uterine involvement.

METHODS: A hospital-based cross-sectional study was conducted in Rehman Medical Institute from July 2019 to July 2022. Patients presenting for diagnostic workup of primary amenorrhea and primary infertility with clinical suspicion of Mayer-Rokitansky-Küster-Hauser (MRKH) syndrome were included in the study. An experienced Women Imaging Radiologist and a senior resident retrospectively reviewed their pelvic MRIs and clinical records. Patient subgroups were consolidated based on uterine morphology into uterine agenesis, unilateral rudimentary uterus, bilateral rudimentary uteri, uterine volume, presence of endometrium, location of the ovaries and extra pelvic radiologic manifestations if any.

RESULTS: 10 patients were included with age ranges from 15-39 years. Out of these 5 (50%) had unilateral uterine remnants, 04 (37%) had bilateral uterine rudiments. Complete uterine agenesis was noted in one patient. Mean uterine volume was 30 ml (20-38 ml) for unilateral uterine remnants, and 19 ml (3-

11 ml) for bilateral uterine rudiments. The buds had an average long-axis diameter of 2.9 ± 0.75 cm. Bilateral buds were connected with fibrous band-like structures. All 09 rudimentary uteri (100%) showed endometrium. Distal vagina was visualized in all patients with a mean length of 2.6 cm (1.6-4.5 cm). 09 (88%) cases showed bilateral normal ovaries near the uterine buds. 01 patient had left suprapelvic ovary. No extra pelvic abnormality was seen.

CONCLUSION: MRKH patients may have different patterns of uterine involvement and differentiated anatomical features.

O-3

Clinical outcome of uterine artery embolization for uterine fibroid

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OBJECTIVE: To evaluate patient's symptoms relief and satisfaction for uterine artery embolization for symptomatic fibroid.

METHODS: This retrospective study reviewed the records of uterine fibroids treated in the Interventional Radiology suite in Liaquat National hospital from January to July 2021. The study protocol was approved by the Ethical Committee of Hospital. All women with uterine fibroid having symptoms such as heavy menstrual bleeding, pelvic pain and urinary frequency were included in this study. All but heavy menstrual bleeding was grouped as bulky symptoms. Each subject under went either a pelvic ultrasound or MRI study of pelvis. Changes between before and after embolization were assessed using Fisher exact test for categorical variables and Chi square test for continuous variables. P-value of <0.05 were considered significant.

RESULT: A total of 20 female patients were reviewed. The median age is 34 + 5 years. The incidence of heavy menstrual bleeding (n=13,65%), pelvic pain (n=3,15%), irregular cycle (n=2,10%). Location of fibroid were intramural(n=5,25%), mucosal(n=6,30%), pedunculated (n=1,5%), subserosal (n=8,40%). The procedure was technically successful in one uterine artery in 18 women and in both uterine arteries in 2 women. More than half of the Patients under went MRI pelvis (n=14,70%). Fibroid symptoms decreased dramatically after embolization. More than half of patients show satisfaction with symptoms relief (n=18,90%).

CONCLUSION: Uterine artery embolization for Fibroids is safe; serious complication occur rarely. Most patients report improvement in symptoms and satisfaction with the outcome from treatment.

O-4

Diagnostic accuracy of MRI in assessment of parametrial invasion in carcinoma of cervix

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OBJECTIVE: To determine the diagnostic accuracy of MRI in assessment of parametrial invasion, in carcinoma of cervix taking histopathology as gold standard.

METHODS: All patients who fulfilled the inclusion criteria and underwent pelvic MRI at DIR, DUHS, Karachi were included in the study. Informed consent was taken after explaining the procedure, risks and benefits of the study. Patients underwent contrast enhanced MRI examination of pelvis on 1.5T MRI scanner. Intravenous contrast injection was administered. Postoperative histopathological findings were noted for the presence or absence of parametrial invasion.

RESULTS: Mean age was 51.4 ± 10.2 years. Parametrial invasion was diagnosed in 70 (43.5%) patients on histopathology. Diagnostic accuracy of MRI findings was noted as 86.34% in diagnosis of parametrial invasion with sensitivity of 87.14%, specificity of 85.71% of PPV of 82.43%, and NPV was found to be 89.66% by using histopathology findings as gold standard.

CONCLUSION: Histopathology is the gold standard in diagnosis of parametrial invasion. MRI is reasonably good having high sensitivity and specificity, correlating well with the histopathology

O-5

Diffusion-weighted imaging with contrast - enhanced MRI in evaluation of pelvic lymph nodes in endometrial cancer.

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OBJECTIVE: To assess the diagnostic accuracy of MRI, using diffusion-weighted, and post-contrast images in the evaluation of metastatic pelvic lymph node involvement in patients with endometrial cancer.

METHODS: It was a retrospective study, conducted at the Radiology Department of Aga Khan University Hospital, from January to December 2021. Convenience sampling was used, and all adult female patients, who underwent MR examination of pelvis with suspicion of endometrial cancer and later had surgery and histopathology, were included in the study. The MRI pelvis was performed on 1.5 Tesla Siemens machine, and both pre-, post-contrast, DWI, and ADC images were obtained. The sequences included axial, coronal, and sagittal, T2 weighted, and fat suppressed T1 post-contrast images. In addition, DW imaging in the axial plane was done at b-values of 50, 400 and 800 sec/mm², and corresponding ADC images were obtained.

RESULTS: A total of 58 patients with histopathologically proven endometrial cancer were included in the study. Out of 58 patients, 13 showed metastatic lymphadenopathy. DWI-weighted imaging had sensitivity, specificity, and positive and negative predictive values of 81.1%, 60%, 43%, and 89% while contrast-enhanced MRI had values of 57.8%, 2.5%, 22.4 % and 11.1% respectively.

CONCLUSION: The DWI shows better accuracy in evaluation and discrimination between metastatic and non-metastatic lymph nodes as compared to contrast-enhanced MRI examination.

O-6

Consequences of preprocedural anxiety level on postprocedure pain in women experienced during hysterosalpingography

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OBJECTIVE: To evaluate the consequences of preprocedural anxiety level on post procedure pain in women who underwent Hysterosalpingography.

METHODS: A cross-sectional study was conducted at Liaquat National Hospital, Radiology Department Karachi for 6 months. After taking informed consent, the patients coming for Hysterosalpingography were selected. The sample size for the study was calculated to be 240 patients. Patient's data was compiled and analyzed through statistical package for Social Sciences (SPSS) Version 21. Frequencies and percentages were computed for qualitative variables like presenting complaints and suspected diagnosis.

RESULTS: A total of 204 patients were included in the study. Of these 204 patients, 65% were suffering from primary infertility (n=133) and 34% (n=71) had secondary subfertility. The level of anxiety of patients was judged on the basis of Beck Anxiety Inventory score about 42% (n= 86) patients had nominal anxiety pre procedure and 45% had mild anxiety (n=93). Moderate anxiety was noted in 6.4% of the patients (n=13) while 5.9% (n=12) patients had severe anxiety. 35% of the patients who had nominal anxiety pre procedure suffered from mild pain, 6.9% of the patients suffered mild pain and none had severe pain. Those who presented with mild anxiety experienced mild pain in 10.8% cases; moderate pain in 34.8% cases and none experienced severe pain. All patients with moderate anxiety suffered from severe pain in 6.4% cases however none experienced mild or moderate pain. The patients with severe pre procedure anxiety suffered severe pain only i.e about 5.9% patients.

CONCLUSION: Anxiety has a crucial role in determining the pain score of the patient and with timely assessment of anxiety score, its management can reduce patient's fear and sufferings.

O-7

Sonosalpingography for assessing tubal patency in women with infertility

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OBJECTIVE: To determine the diagnostic accuracy of sonosalpingography for assessing tubal patency in women with infertility taking laparoscopy as gold standard.

METHODS: This study was conducted in Radiology Department Khyber Teaching Hospital and Kuwait Teaching Hospital Peshawar. It was a cross sectional study and the duration of the study was 6 months. Consecutive, non probability sampling technique was used for sample collection. Diagnostic accuracy of sonosalpingography was analysed as the sensitivity, specificity, positive predictive value and negative predictive value.

RESULTS: In 178 patients, 30% patients were 15-25 of years, 55% patients were in the age range of 26- 35 years, 15% patients were the in the age range of 36-45 years. Diagnostic accuracy of sonosalpingography was analysed as the sensitivity was 81%, specificity was 76%, positive predictive value was 90%, negative predictive value was 60% and the diagnostic accuracy was 79%

CONCLUSION: Sonosalpingography is a very useful complementary diagnostic modality in the assessment of tubal pathology. This should precede direct laparoscopic evaluation. Patients with secondary infertility can be assessed with a combination of sonosalpingography and laparoscopy. This saves the patient of radiation exposure as well as pain of contrast administration.

O-8**Developmental variations in the course and configuration of pancreatic duct in Pakistani patients undergoing MRCP**

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OBJECTIVE: To assess the frequency of congenital anomalies and variations in the pancreaticobiliary tract regarding its course and configuration of pancreatic duct in patients undergoing MRCP.

METHODS: It was a retrospective study, conducted from January 2019 to March 2021 in the post graduate Department of Radiology in Liaquat National Hospital. Prior ethical clearance from Institutional Ethical Committee was taken. The examinations were carried out on 1.5 Tesla Cannon and GE scanners using a phased array body coil and with departmental protocols, obtaining heavily T2 weighted sequences including FRFSE (fast recovery fast spin echo) coronal oblique 3D images, T1W and T2W coronal, axial, fat sat and MIP images. The types of meandering of main pancreatic duct were assessed and clinical correlation with history of pancreatitis was made. Descriptive and inferential statistical analysis were carried out on SPSS version 23. Results on continuous measurements were presented as mean \pm SD (min–max) and results on categorical measurements were presented as number (%). The chi square test was applied on categorical variables. A p-value less than 0.05 (p<0.05) will be considered significant.

RESULTS: In MRCP analysis, out of total 153 patients including men and women, the mean age was 51.9 ± 15.62 years. The anatomical variations comprised of 65.4 descending course, 10.5% vertical course, 18.3% sigmoid course, 8.35% loop type course, and 3.9% reverse z course. Total 23.5% of patients had pancreatitis where as majority (76.5%) showed no pancreatitis. However, there was no significant association of pancreatitis was observed with individual variations.

CONCLUSION: Knowledge of anatomical variations of the pancreatic ducts is of great importance in general surgery specially in pancreatic surgery and to help surgeons perform pancreatic anastomosis safely.

O-9**Gender based procedural indications and outcomes of distal loopogram study**

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OBJECTIVE: To determine the indications of distal loopogram study with reference to gender distribution and the outcome of the procedure in terms of residual diseases, complications and resolution of the primary indication.

METHODS: Data of patients undergoing distal loopogram for the reversal of ileostomy or colostomy under fluoroscopic guidance at the department of Radiology DMC/CHK between October 2021 to August 2022, with complete available record were evaluated. The level of stoma, indication, emergency or planned operation, duration of stoma, demographics and findings of loopogram were noted and compared with reference to gender. Those with incomplete record for the studied variables were excluded.

RESULT: There were a total of 76 patients; 57 men (75%, mean age 34.26 ± 15.78 years, mode 20 years) and 19 women (25%, mean age 34.38 ± 17.76 years, mode age 30 years). Stoma formation was done in emergency in 58(76.31%). The major indications were post typhoid ileal perforation (30%), trauma (12%), abdominal tuberculosis (11%) and bowel perforation (9%) in

men; and puerperal sepsis and bowel perforation (21% each), and abdominal tuberculosis (16%) in women. Average duration of stoma was 5.49 ± 6.62 months. The distal loopogram study was found normal in 68 (89.47%). Bowel disuse changes were noted in 6.57%; postsurgical stricture was seen in 2.63% and other abnormal findings in 1.31%.

CONCLUSION: The majority of patients requiring ileostomy/colostomy belonged to a young age group; and a variety of infections were the predominant cause of complication requiring the procedure. Bowel disuse changes may require bowel conditioning after reversal.

O-10**Challenges of standardized reporting - Are we practicing LI-RADS?**

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OBJECTIVE: To determine the practice of LI-RADS reporting among Pakistani radiologists.

METHODS: An online questionnaire regarding the case of LIRADS lexicon was sent to residents and qualified radiologists in different cities. Responses were assessed to look for percentage of doctors practicing LIRADS. Data regarding place of work, years of experience and highest degree were recorded.

RESULTS: Almost equal number of qualified and resident radiologists participated (50.8% versus 49.2%); total participants were 252. Their place of work was government institution in 34.5% (87/252) and 76 respondents (30.2%) worked in private set-up; 59 in teaching institutions (23.4%) and 19 in semi- government set up (19%). Out of 252, majority were not reporting liver masses according to LIRADS (66.7%). Main reason was lack of knowledge by 24.4% (41/168); 5.9% (10/168) found it difficult; 14.9% (25/168) did not state any reason and 47% (79/168) did not answer. Their experience ranged from 0.5 to 38 years; highest qualification being FRCR (Fellow of Royal College of Radiologists) in 3/168 (1.8%), followed by FCPS (Fellow College of Physicians and Surgeons Pakistan) in 82/168 (48.8%), DMRD (Diploma in Medical Radio-diagnosis) in 2/168 (1.2%), MCPS (Member College of Physicians and Surgeons) 6/168 (3.6%) and MD (Doctor of Medicine) in 3/168 (1.8%). Amongst the 80 participants who were reporting according to LIRADS, 31 were consultants and 49 were trainees; their experience varying between 0.5 to 35 years. Highest qualification was FRCR in 4/31 (12.9%), followed by FCPS in 26/31 (83.9%) and DMRD in 1/31 (3.2%).

CONCLUSION: There is lack of standardized reporting terminology used by majority of radiology community in Pakistan. It is imperative to spread awareness among radiologists and clinicians regarding LIRADS to improve therapeutic management, particularly hepatocellular carcinoma.

O-11**The outcome of angio-embolization in upper gastrointestinal bleed**

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OBJECTIVE: To determine the technical success and complications of angioembolization in upper GI bleed.

METHODS: This retrospective study was conducted in the Interventional Radiology department of Liaquat National Hospital. The records of patient who underwent embolization for upper GI bleed were reviewed. The data included age, gender, artery involved, embolization material used and associated complications that was collected through the EMR based on a structured Performa. SPSS version 26 was used for statistical analysis. Frequencies and percentages were computed for categorical variables. P-value less than or equal was defined as statistically significant.

RESULT: There were 40 patients. Most of the patients were male about (69.7%) and (30.3%) female. The most common presenting complain was hematemesis and melena in about 42.4% patients and the most common artery being involved was gastroduodenal artery that was 63.3%. The embolization material most commonly used was PVA which was (57.6%), glue and micro coils in 30.3%, while micro coils were used in only 12.1% cases. The overall technical success was 100%. Most of the patients did not suffer any complications (72.7%), 24.2% suffered from re-bleed however only 3% patient died. So according to our results the technical success rate was high and only few patients suffering from complications.

CONCLUSION: According to this preliminary report of an ongoing study, trans-catheter embolization is a safe and effective method for the treatment of upper GI bleeding in patients refractory to endoscopic therapies. Gastroduodenal artery was the most commonly involved artery.

O-12

Radiofrequency ablation in HCC

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OBJECTIVE: To evaluate the initial results of radiofrequency ablation (RFA) for the treatment of hepatocellular carcinoma (HCC).

METHODS: All patients who underwent radiofrequency ablation (RFA) of HCC in Radiology department of Rehman Medical Institute (RMI) Peshawar, between July 2015 to October 2021 under general anesthesia with age range of 30-75 years were included. All patients had confirmed radiological and biochemical diagnosis of HCC. Procedure was performed under general anesthesia with fluoroscopy / ultrasound guidance. Clinical response was assessed by follow up with dynamic CT liver on 128-slice Canon MDCT scanner.

RESULTS: All 23 patients underwent procedure with complete ablation of the lesion with a 1 cm margin. On follow up imaging, 9 patients (39.13 %) showed complete response, 4 patients (17.3 %) showed partial response, 6 patients (26%) showed progressive disease and 4 patients (17.39%) did not show for follow ups.

CONCLUSION: Radiofrequency ablation technique is minimally invasive and shows promising results. It can be used as palliative treatment option for patient with early Hepatocellular carcinoma.

O-13

Role of Interim ¹⁸F-FDG PET-CT in Diffuse Large B-Cell Lymphoma patients for Chemotherapy Response evaluation

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OBJECTIVES: To assess the role of interim ¹⁸F-FDG PET-CT in Diffuse Large B-Cell Lymphoma patients for chemotherapy response evaluation.

METHODS: 50 diffuse large B cell lymphoma patients undergoing ¹⁸F-FDG PET-CT during the therapy from January 1st 2018 to November 30th 2021 were retrospectively analyzed. Every individual patient was analyzed to evaluate the treatment response by comparing all three ¹⁸F-FDG PET-CT scans (baseline, interim and end-of-treatment). Interim and end-of-treatment scans were correlated on the basis of Deauville scoring criteria and SUVmax to differentiate the early, late and non-responders as to which predicted the most effective treatment.

RESULTS: Mean age was 45 ± 14 years. The sensitivity and specificity of Interim PET-CT on the basis of Deauville 5-point score system and SUVmax were 85% vs. 69%, 75% vs. 68% and 80% vs. 69% respectively. According to Deauville score and SUVmax, positive predictive value was 71% vs. 67% and negative predictive value was 88% vs. 70% respectively.

CONCLUSION: Interim PET-CT was found to be an independent modality for evaluating chemotherapy response evaluation in DLBCL patients. Visual analysis by Deauville criteria has higher sensitivity and specificity than SUVmax in predicting response to treatment in DLBCL patients.

O-14

Emergency angioembolization of hepatic artery after trauma in unstable patients

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OBJECTIVE: To study the correlation of mechanism of trauma, with and severity of injuries in blunt trauma patient.

METHODS: This retrospective study reviewed the records of hepatic injury patient managed by hepatic artery angioembolization in the Radiology department of Liaquat National Hospital from January to July 2022. The Ethics Committee of Hospital approved this study protocol. All the patients who had undergone angioembolization of hepatic artery during the study period were identified using the institutional Radiology Information System. CT scan findings were also recorded and all the gathered data was documented in pre designed proforma. Patient with CT Scan evidence of hepatic injury were classified into five grades according to CT Scan findings on the basis of the injury scale of the American Association for the Surgery of Trauma. Frequencies and percentage were computed for categorical variables. Numerical variable age was presented as median with interquartile range (IQR) after assessing the assumption normality with the Shapiro-Wilk test.

RESULT: A total of 15 records were found. Nearly all the injured were males (n=14, 93.3%). Top most cause of hepatic injury was motor vehicle crash (n=7, 46.7%) followed by fall on object (n=4, 26.7%), pedestrian (n=2, 13.3%) and others (n=2, 13.3%). All the patients with a CT Scan grade 3 and 4 injury had angiographic findings of extravasation. Arterial embolization success rate was 80%.

CONCLUSION: Hepatic arterial embolization is a viable alternative bridging the therapeutic options of operative and non-operative intervention for a subpopulation of patient with hepatic injury.

O-15**Frequency and extent of pelvic trauma on whole body computed tomography in blunt abdominal trauma**

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OBJECTIVE: To assess the frequency and extent of pelvic trauma on whole body computed tomography in cases with blunt abdominal trauma.

METHODS: A retrospective review of blunt trauma patients undergoing CT scan was performed with a random sample of 74 from January, 2021 to August, 2022 at the Department of Radiology, Rehman Medical Institute, Peshawar. Patients were divided into four age groups, group I (1-20 years), group II (21-40 years), group III (41-60 years) and group IV (61-80 years). Presence of pelvic injury and involvement of pelvic viscera was checked.

RESULTS: Out of the 74 cases, 11 were females and 63 were males, with pelvic injuries in 13 cases (17.56%) and extension of that pelvic injury into visceral organs was found in only 4 cases (5.4%). Out of the 13 cases with pelvic injuries, only 2 were females with no extension of that injury into visceral organs.

CONCLUSION: Most of the patient with blunt trauma do not have any significant pelvic injuries and those with pelvic injuries, only few had extension of these injuries to the visceral organs and these extensions of injuries were not life threatening. So, patients should not be exposed to a huge amount of radiation unless justified clinically.

O-16**Pre-stenting evaluation of coarctation of aorta on MDCT: What does the cardiologists expect from the radiologist?**

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OBJECTIVE: To discuss the radiological findings and parameters which are required to be included in a report of MDCT (Multidetector CT) for pre-stenting evaluation of coarctation of aorta, from an interventional cardiologist perspective.

METHODS: It was a retrospective case-series of 20 patients with coarctation of aorta. MDCT was performed for pre-stenting evaluation. A consensus was made along with the cardiologist for the required parameters to be evaluated on MDCT for endovascular stenting; and included in the departmental report template

RESULTS: The required included pre ductal / post ductal diameter of coarcted segment, diameter of descending aorta at the level of diaphragm, diameter of isthmus, diameter of transverse aorta, diameter of ascending aorta, length of coarcted segment (approx 1/3rd above and 2/3rd below the coarcted segment), diameter of narrowed segment (at the level of patent ductus arteriosus) and description of collaterals formation.

CONCLUSION: A concise report was devised in collaboration with the cardiologist. The parameters evaluated in the MDCT report led to precise decision of the procedural technique.

O-17**Comparison of single and dual time point ¹⁸F-FDG PET-CT for the evaluation of suspicious pulmonary nodules**

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OBJECTIVE: To compare the diagnostic accuracy of standard 18F- FDG PET-CT (STPI) imaging with dual time point ¹⁸F-FDG PET CT imaging (DTPI) in detecting clinically significant pulmonary nodules.

METHODS: This prospective study was carried out at the PET CT section of Jinnah Postgraduate Medical Center, Karachi, Pakistan, from June 2017 to July 2020. We inducted a total of 49 patients with 55 suspicious pulmonary nodules for 18-FDG PET CT. All patients underwent STPI at 60 minutes after intravenous injection of 18F-FDG. A DTPI of the thorax was performed at 120 minutes in all cases. A 10% increase in SUVmax between both scans was considered positive for malignancy.

RESULTS: Of the 55 cases of pulmonary nodules, there were 37 (67%) malignant and 18 (32.7%) benign lesions. The malignant lesions showed significantly higher FDG uptake with mean SUVmax 7.2 + 2.2 on STPI and mean SUVmax 10.2 + 2.6 on DTPI. Out of 37 malignant lesions, there were 13 primary lung tumors and 23 metastases. The biopsied benign lesion included 2(11%) tuberculomas, 2(11%) granulomas, 1(5.5%) hamartoma and 1(5.5%) fungal lesion. All malignant lesions were histologically proven. Out of 18 benign lesions, 13(72.2%) were confidently followed up with no detrimental results. 36% (6 out of 18) benign lesions were resected/biopsied due to borderline SUVmax on STPI or patient's preference. Standard ¹⁸F-FDG PET-CT imaging using STPI with a threshold of SUVmax 2.5 had a sensitivity of 61% and specificity of 94%. The DTPI with a threshold value of 10% increase between both scans reached a sensitivity of 100% and specificity of 94.7%.

CONCLUSION: Dual time-point 18F-FDG PET-CT provides useful diagnostic information in suspicious pulmonary nodules, improving the sensitivity, specificity, and accuracy of 18F-FDG PET-CT imaging for detecting malignant pulmonary nodules.

O-18**Frequency of non-thromboembolic incidental findings on CT pulmonary angiography**

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OBJECTIVE: To assess the frequency of incidental findings on CT pulmonary angiography (CTPA) for pulmonary embolism (PE) that had therapeutic consequences.

METHODS: This is a retrospective study. All patients undergoing CTPA at Liaquat National Hospital Karachi during a period of two years from January 2019 to December 2020, were included in the study. Radiology data was extracted from the PACS software (OSIRIX) and was reported by an experienced radiologist. We measured the frequency of non PE significant and insignificant incidental findings.

RESULTS: There were 54% patients with age \leq 35 years and 46% with age $>$ 35 years. Their gender distribution was 49.8% males and 50.2% females. The incidental findings were noted as infiltrates (37%), pleural effusion (43.7%), pneumothorax (2.6%), pneumo-mediastinum (0.3%), Pericardial

effusion (4.2%), lymph nodes (53.7%), malignancy (8.7%), emphysema (11.3%), intra-abdominal pathology (45.3%), PE positive (14.5%), consolidation (22.8%), bronchiectasis (7.1%), pulmonary edema (1.9%) and musculoskeletal injury (4.2%).

CONCLUSION: In patients with suspected pulmonary embolism, a wide range of incidental findings and simultaneous pathologies can be seen in TPA. Therefore, the use of a clinical algorithms is necessary for more definite approach to differential diagnoses of pulmonary embolism.

O-19

Tuberculosis rather than interstitial lung disease: the commonest radiological finding on high-resolution computed tomography in a local community

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OBJECTIVE: To determine the common radiological findings and diagnosis on High Resolution CT in our community.

METHODS: This observational study was carried out in the Department of Radiology, Hayatabad Medical Complex, Peshawar from January to December, 2014. 101 consecutive cases of HRCT done in the specified period were retrospectively analyzed. Standardized performa was designed for data collection. HRCT was done using standard protocols of 2mm thickness and non-contrast pulmonary window.

RESULTS: The commonest radiological findings were consolidation (54.4%) and bronchiectasis (35.1%). Cavitation was seen in 29.8% and fibrosis in 26.3% of cases. The commonest radiological diagnosis based on these findings was chronic pulmonary tuberculosis (56.4%). The second common diagnosis was infective pneumonia (19.8%) and interstitial lung disease was seen in 7.9% of cases.

CONCLUSION: Although HRCT is the modality of choice for interstitial lung disease, but radiological manifestations of tuberculosis and its sequelae were found to be the most common radiological diagnosis in this study. This is a testimony to the high prevalence of disease in the community.

O-20

Assessment of severity of pulmonary embolism on CTPA : What the radiologist needs to convey?

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OBJECTIVE: To determine right heart dysfunction directly related to poor prognosis in patients of pulmonary embolism as seen on CT pulmonary angiography (CTPA).

METHODS: The study was conducted on 25 patients aged 20 – 60 years of either gender for CTPA from R.I.C Emergency. Included patients showed pulmonary embolism (filling defect in either main pulmonary trunk or any main branch) with evidence of right heart strain (any two among either increased RV/LV ratio or leftward bowing of intraventricular septum or reflux of the contrast into IVC and hepatic veins). Right heart strain determined on CTPA was confirmed on echocardiography. Patients with co-morbidities, younger than 20 years of age and those with non-diagnostic CTPA were excluded from the study. Patients were followed for 30 days and their record was reviewed for mortality, length of hospital stay, ICU admissions and recurrent attacks.

RESULTS: Out of 25 patients of pulmonary embolism with right heart strain on CTPA, two passed away, 13 required ICU placement, 5 each had recurrent attacks and received thrombolysis.

CONCLUSION: CT pulmonary angiography not only allows us to diagnose pulmonary embolism but also evaluates the severity of the disease. Cardiovascular parameters such as increased RV/LV ratio and reflux of contrast in to IVC suggest a severe complication.

O-21

Stress myocardial perfusion imaging (MPI) for predicting major cardiac events in diabetic women and men

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OBJECTIVE: To predict major adverse cardiac events (MACEs) between diabetic men and women stratified by (previous infarction and/or coronary revascularization using stress myocardial perfusion (MDI).

METHODS: A cohort of 1135 consecutive diabetic patients were carried out at Department of Radiology, The Aga Khan University Hospital, Karachi, Pakistan. The Ethics Committee of the hospital approved the study. The cohort was followed for a mean period up of 12-60 month for MACEs (fatal and non-fatal MI). Data was collected through a proforma. SPSS version 25 was used for statistical analysis. Frequencies and percentages were computed for categorical variables.

RESULTS: A cohort of 1135 consecutive diabetic patients (age 61.5 ± 9 years) underwent gated SPECT (single-photon emission computed tomography) myocardial perfusion imaging (MPI). Risk factors in female and male participants were hypertension (68 vs 78%), dyslipidemia (43 vs 27%) and positive family history (25 vs 30%) respectively. Female diabetics were found to have significantly higher body mass index (37.43 ± 4.20 Vs 24.27 ± 2.98). Female diabetics were found to have fixed defect in 12% and reversible defect in 88% on MPI. Male diabetics were found to have fixed defect in 45% and reversible defect in 55% on MPI. During follow-up period, fatal events in female were significantly higher (3 events; survival 92.5%) as compared to males (0 event; 100% survival), [Log Rank = 27.166, $p < 0.5$].

CONCLUSIONS: The prognosis of diabetic patients for MACEs is different in men and women stratified by CAD. The worst prognosis for MACEs occurs in obese women with known CAD.

O-22

Variations of renal vascular anatomy on CT scan for pre-surgical assessment

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OBJECTIVE: To evaluate the common variations in renal vascular anatomy on computed tomography (CT).

METHODS: We retrospectively collected data of renal vascular anatomy and its variations on CT abdomen and pelvis acquired in various phases of about 100 patients. Variation in the form of accessory artery or early division of segmental branches was taken into consideration. Age, gender and clinical data were also taken into account. Results were tabulated considering multiple variables like age, gender and race of the patient, accessory arteries and early division of the segmental arteries.

RESULTS: Out of these 100 patients, 45% of these were found to be normal. 35% of patients had accessory arteries, 5% had bilateral accessory arteries whereas 20% had it on right and 10% had on left. 20% of patients had early segmental divisions, 10% of these had bilateral early divisions, whereas equal value of 5% was found on right and left. The study was conducted on Caucasians, South Asian subgroup. No marked inter-racial differences were appreciated. Out of the 45% of normal patients, one of them had malrotated left kidney with left renal artery arising from aorta at L3 level. Another one of these had renal artery going behind IVC. Male to female ratio was found to be 4:6, with equal percentage of 30% of female patients above 40 years and below 40 years. 30% of male patients were found to be above 40 years and 10% below 40 years.

CONCLUSION: There are multiple normal anatomical renal variants and it is very important to know them before surgical procedures as this helps the surgeon to be better prepared beforehand.

O-23

Renal arterial variations in transplant donor CT

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OBJECTIVES: Anatomy of renal vasculature is very important for safe donor nephrectomy. It affects renal graft functions in renal transplantation and survival of renal recipient. To study the variations in the branching pattern of renal artery for the presence of early division and accessory renal artery in kidney donors using CT angiography.

METHODOLOGY: This was a cross-sectional analytical study carried out in the Radiology department of Rehman Medical Institute Peshawar from 1st August 2022 to 31st August 2022. Our sample size was 15 (6 males and 9 females) and it was a non-probability consecutive sampling (all patients coming for CTA renal donor in the duration were included). The age range was 30 to 40 years. All donors underwent a routine imaging protocol of the CTA renal, including non-contrast scan, arterial phase, venous and delayed phases with field of view covering both diaphragm and femoral heads. Arterial phase images were reconstructed in 0.5mm volume and assessed for presence of renal artery variations, early divisions, accessory branches and accessory renal artery. Normal bifurcation of right renal artery is at average 3.6cm from origin and any distance other than this was considered variant, either early or late division. Normal bifurcation of left renal artery is at average 2.8 cm from its origin and any distance other than this was considered variant, either early or late division. Data was analyzed using Microsoft Excel and SPSS version 22 (Armonk, NY: IBM Corp.).

RESULT: Our study showed that 6 patients (40%) had late bifurcation of right renal artery (>3.6cm), 6 patients (40%) had normal bifurcation (3.6cm) and three patients (20%) had early bifurcation (<3.6 cm). Out of 15 patients 6 patients (40%) had late bifurcation of left renal artery (>2.8cm), 9 patients (60%) had early bifurcation (<2.8cm). In 3 patients (20%) had unilateral two renal arteries. In 9 patients (80%) had unilateral single renal arteries.

CONCLUSION: To conclude our study a single renal artery, have highest occurrences in wide variety of other renal artery variation in transplant donor. However, a large group study is planned.

O-24

Ultrasound evaluation and grading of varicoceles - compliance with European society of urogenital radiology guidelines

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OBJECTIVE: To analyze the ultrasound reports of testicular ultrasound for the diagnosis of varicocele and the degree to which the report complied the Sarteschi grading criteria as favoured by European Society of Urogenital Society (ESUR).

METHODS: All ultrasound scans performed specifically with the diagnostic query of varicoceles in the department of Radiology at The Aga Khan University Hospital between January to April 2022 were analysed. Reports and respective images were acquired through the picture archiving and communications system (PACS). Variables assessed in the Sarteschi grading criteria were compared with each report collected including correct volume measurement of testes, location of the largest vein (documented or not/ location specified or not), diameter of the largest vein in erect position, documentation of reflux, level of reflux and duration of reflux.

RESULTS: A total of 110 ultrasound reports were analysed in which the patient presented with a primary clinical question of varicocele. 59% of the reports that were included in this study were positive for a varicocele. Only 1 percent of the reports had an inaccurate testicular volume. 75% of the varicoceles observed had prominent peritesticular vessels, 9% involved the inguinal vessels and only 4.5% involved the suprastesticular vessels. Nearly 13% reports did not have a clear mention of the involved vessels. 20% reports did not state that whether the prominent vessel measurement was taken in supine or erect position. 14% of the reports mentioned presence or absence of reflux and only 7% documented the level of reflux.

CONCLUSION: On evaluation of testicular ultrasound reports for varicoceles as compared to Sarteschi classification proposed by European Society of Urogenital Radiology many requisite parameters were missing.

O-25

Diagnostic accuracy of renal resistive index in diagnosis of obstructive uropathy

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OBJECTIVE: To determine the diagnostic accuracy of Renal Resistive Index in diagnosis of obstructive uropathy taking non-contrast computed tomography as gold standard.

METHODS: A cross-sectional study was conducted at Dow Institute of Radiology, Dow University of Health Sciences, Karachi. Both male and female patients, aged 15-80 years presenting for non-contrast CT KUB for flank pain were included. Patients with renal failure were excluded. CT scan was performed on a 128-slice scanner. Data was analyzed using SPSS version 22. Resistive index (RI) was determined by renal Doppler ultrasound. Sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV) and diagnostic accuracy of the resistive index was calculated using 2 x 2 contingency table taking findings of non-contrast CT scan as gold standard.

RESULTS: The mean age of the patients was 43.13 ± 15.06 years. There were 153, (63.20%) males and 89 (36.80%) females. Obstructive uropathy according to RI was diagnosed in 70 (28.9%) patients while on CT scan obstructive uropathy was found in 59 (24.4%) patients. Sensitivity, specificity, PPV, NPV and diagnostic accuracy of RI was found to be 79.66%, 87.43%, 67.14%, 93.02% and 85.54% respectively taking non-contrast CT as gold standard.

CONCLUSION: Renal resistive index has a moderate sensitivity, high specificity and diagnostic accuracy in diagnosing obstructive uropathy.

O-26

Sonographic spectrum of prehensile pathologies unveiled at the inguinal region: Experience at a tertiary care Hospital

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OBJECTIVE: To evaluate the spectrum of pathologies diagnosed in the inguinal region exclusively with the help of Ultrasonography at a tertiary care center.

METHODS: It was a retrospective study conducted at the Ultrasound suite, Radiology Department, Liaquat National Hospital, Karachi, Pakistan. Inclusion criteria were subjects of either gender or age, with inguinal swelling or pain referred for Ultrasound inguinal region. Exclusion criteria were unstable or non-cooperative patients. After taking informed consent, the detailed history of the patient, demographic data including the age and gender, and the findings were recorded. Patient's data was compiled and analyzed through statistical package for Social Sciences (SPSS) Version 21.

RESULTS: A total of 126 cases were reviewed for inguinal regional pathologies. Majority of them were male, n=105 (83%) and rest of 21 cases (17%) were female. The age was found to be 30-35 years for either gender. 76% (n=96) of patient underwent unilateral inguinal scan and rest of 24% (n=30) went for bilateral scanning. Out of them, 56.3% (n=71) of patients had some inguinal region pathology; the rest were normal. The positive cases for indirect, direct and femoral hernias were found to be 10.3% (n=13), 5.6% (n=7) and 3.2% (n=4) respectively. Ectopic testes in the inguinal region were found in 3.2% of the patients (2 each being unilateral and bilateral). True aneurysms were found in 5 patients (4%) were, and pseudo aneurysms in 3 cases (2.4%). Rest of 10.3% (n=13) patients had hematoma; 7.9% (n=10) had collection/abscess, 6.3% (n=8) had body wall edema, and 3.2% (n=4) had benign tumors. Overall, 37.3% of patients (n=47) had a benign lymph node and only 2 cases were found to have malignant lymph nodes.

CONCLUSION: Ultrasonography is considered as one the most effective, safe and economical imaging tool for assessing inguinal lesions today due to its ability of dynamic scanning. Clinical history and imaging findings may be puzzling individually, however the diagnostic gap can be bridged by correlating them together.

O-27

Don't Hide Behind the DOC

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OBJECTIVE: To analyze accuracy of correctly differentiating between disc and osteophyte while reporting cervical spine MRI.

METHODS: Fifty finalized MRI Cervical spine reports that mentioned disc osteophyte complex (DOC) were reviewed and cross checked with the scan to check for accuracy. All the reports finalized between January - August 2022 were retrieved through picture archiving and communication system (PACS) at the Aga Khan University Hospital.

RESULTS: A total of 50 reports were reviewed and were cross-checked with the corresponding scan. Disc osteophyte complex was mentioned in 31 out of 50 reports out of which 31 only had bulge, 4 had osteophytes only while 15 had both disc and osteophyte (48% accuracy). Disc bulge was correctly reported

in 15 out of 31 scans that had reported disc bulge. Osteophyte alone was not mentioned in any of the reports, whereas 4 out of 50 reports only had osteophytes. Two scans were correctly reported as extrusion and other two as protrusion.

CONCLUSION: Although GRE/T2* has shown high sensitivity in distinguishing discs from osteophytes, our study showed that this differentiation was frequently missed when interpreting cervical MRI scans.

O-28

Comparative MR evaluation of brain abscesses and correlation with immune status

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OBJECTIVE: To compare pyogenic, tubercular, and fungal brain abscesses by using conventional and diffusion-weighted imaging (DWI) features of MRI with an aim to define the unique features that may help differentiate among them.

METHODS: We performed a retrospective analysis on 65 patients with histopathologically proven brain abscesses. Imaging sequences included T2, T1 postcontrast, DWI and SWI. The morphological features of pyogenic (n=36), tuberculous (n=2), and fungal (n=27) abscesses were compared.

RESULTS: There were 42 male and 23 female patients with age ranging between 4 and 80 years (mean 42 years). Majority of the pyogenic abscesses had smooth and lobulated walls with only one patient showing intracavitary projection. The tubercular abscesses had smooth, lobulated, and crenated walls with no intracavitary projections. The fungal abscesses showed irregular walls (lobulated and crenated) with almost all showing intracavitary projections. Majority of the pyogenic abscesses showed central diffusion restriction while fungal abscesses predominantly demonstrated peripheral and bizarre diffusion restriction. One of the tuberculous abscess showed central and the rest showed peripheral diffusion restriction.

CONCLUSION: Based on conventional and diffusion-weighted imaging (DWI) imaging features along with morphologic information, it may be possible to differentiate among the pyogenic, tubercular, and fungal brain abscesses.

O-29

The accuracy of diffusion weighted magnetic resonance imaging in detection of posterior reversible encephalopathy syndrome

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OBJECTIVE: To determine the accuracy of Diffusion weighted Magnetic Resonance Imaging in detection of Posterior Reversible Encephalopathy Syndrome (PRES)

METHODS: Across sectional study was conducted at Department of Radiology, Victoria Hospital, Bahawalpur from June 2020 to June 2022. Women aged 18-40 years, presenting at or within 6 weeks of delivery diagnosed with preeclampsia or hypertensive pregnancy. Exclusion criteria were: >6 weeks post-partum duration, diagnosis of cerebral hemorrhage, known seizure disorder, or later diagnosis of seizures from source other than hypertensive pregnancy. Studied variables were age, duration of symptoms, MRI features and Diffusion/ADC findings and recovery or prognosis.

RESULTS: 40 patients were included with mean age of 25 ± 2 years. The most frequent symptoms were headache, seizures and confusion. The most frequent findings were bilateral abnormal signal intensity lesions in subcortical whiter matter of occipital lobes with high signals on T2, FLAIR and DW.

CONCLUSIONS: Diagnosis of PRES is facilitated by the characteristic MR brain scan changes of posterior subcortical edema. MRI diffusion-weighted confirmed vasogenic edema with absence of restricted diffusion.

O-30**Less Sleep, more errors: Need to revisit long call hours of radiology**

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OBJECTIVE: To analyse Radiology reporting errors (CT, MRI, conventional radiology and ultrasound examinations) and its interconnection with long working hours of radiologists.

METHODS: All reports in which a change in interpretation and addition of comments in a finalised report between January – September 2022 were acquired through picture archiving and communication system (PACS) at the Agha Khan University Hospital. The variables associated with each report, included the source of the scan (indoor/ER/Outdoor), time of preliminary report (8 am to 5 pm / 5 pm to 12 am/ 12 am to 8 am), type of error (laterality/typographical/missed finding/addition on request of referring physician/ missed comparison with previous imaging/addition after further imaging), change in final impression of report and whether a proper history was available at the time of reporting.

RESULTS: A total of 1100 reports were analysed fulfilling the above-mentioned criteria out of which 250 were randomly selected (80 conventional radiography, 60 CT, 60 MRI and 50 ultrasound reports). 59.6% of errors were seen in reports signed off during 6 pm to 8 am (on-call hours). 48% errors were seen in reports of OSR patients, 46% in indoor and 16% in ER reports. 48% reports had missed finding; 23.6% due to change in impression after additional imaging was made available/performed; 16.4% were due to typographical errors, 2.8% errors were laterality issue and only 0.8 percent had a critical missed finding. 66% examinations had no history provided by the referring physician

CONCLUSION: On the basis of duty time-based reporting review, a greater number of errors were seen in on call reporting hours as compared to morning, with missed findings accounting for nearly half of all the errors identified.

O-31**Patterns of CT-scan findings among head injury patients presenting to the emergency department in a tertiary care hospital**

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OBJECTIVE: To analyze the patterns of CT-scan findings among head injury patients presenting to the emergency department in a tertiary care hospital.

METHODS: This retrospective study reviewed the records of head injury patients present in the emergency room in Liaquat National Hospital from June-December 2021. The Ethics Committee of the Hospital approved the study. Patients' medical record files were reviewed to retrieve their age, gender, and mechanism of injury. CT-scan findings were also recorded and all the gathered was documented in a pre-designed proforma. Data was entered in SPSS version 25 for statistical analysis. Frequencies and percentages were computed for categorical variables. Numerical variable age was presented as median with interquartile range (IQR) after assessing the assumption normality with the Shapiro-Wilk test. CT scan findings were compared in patients with a different mechanism of injury and the incidence of neurological defects was compared with fractures using Chi-square or Fisher exact test. P-value less than or equal was defined as statistically significant.

RESULTS: A total of 423 records were reviewed. The median age of patients was 40 (IQR= 26 – 55) years. More than half of the injured were males (n=326, 77.1%). Topmost cause of head injury was road traffic accident (n=246, 58.2%) followed by fall (n=105, 24.8%), assault (n=29, 6.9%), others (n=12, 2.8%) and unknown mechanism (n=31, 7.3%). Injury to others included all those accidental falls of objects on the head. Nearly half of the patients depicted normal findings of CT scans (n=190, 44.9%).

CONCLUSION: RTA was the leading cause of head injury and patterns of CT-scan findings was significantly different among all mechanism of injuries with a significantly higher proportion of abnormal CT-scan findings among RTA patients.

O-32**Radiation changes / necrosis in intracranial lesions: A dilemma in follow up imaging after radiosurgery.**

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OBJECTIVE: To study the imaging features of radiation changes/ radiation necrosis in brain after radiosurgery

METHODS: This is cross sectional observational study carried out at Cyberknife Robotic Radiosurgery Center, Jinnah Postgraduate Medical Centre, Karachi, Pakistan from December 2012 to December 2021. A total of 1000 patients with the ages between 7-80 years were included who had undergone radiosurgery for brain metastasis and arteriovenous malformation. All patients were followed up 3 monthly after Radiosurgery for clinical and Radiological response with contrast enhanced MRI sequences.

RESULTS: 1000 patients with 600 brain metastasis and 400 cases of AVM were treated with Radiosurgery and are followed with serial MRI scans to assess disease response to radiation treatment and to rule out the interim development of new metastases. Out of 600 patients of brain metastasis 31 patients showed radiation changes which on subsequent follow up and additional imaging (MRI brain Perfusion / FDG PET CT) improved and only 5 cases of radiation necrosis found. Out of 400 cases of AVM, 29 patients had radiation changes which improved on follow up imaging and showed radiation necrosis in only 7 cases.

CONCLUSION: There are high chances of radiation changes/ necrosis after Radiosurgery. Conventional MRI has high overlap between imaging findings of radiation changes and necrosis. This knowledge is very important not only for accurate diagnosis but also to provide proper treatment.

O-33**Correlation of ADC mapping of visual pathways with HbA1c levels, in diabetic patients presenting with blurring of vision**

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OBJECTIVE: To study the impact of diabetes on Visual pathway using diffusion weighted magnetic resonance imaging (DW MRI) and calculating the ADC values.

METHODS: This observational study was conducted primarily in Department of Radiology Bahawal Victoria hospital, from Nov 2018 to November 2019. A total of 50 patients were selected by non-probability purposive sampling. Conventional MRI and DWI of the brain of diabetic patients were obtained. Patient evaluation for study inclusion was done by ophthalmologist in Eye OPD. HbA1c was done in pathology Department. The MRI examination was performed and with the help of available software, the ADC maps were drawn. Areas of optic nerve head, optic tract, thalamus and visual cortex were selected for analysis keeping in accordance with literature. Patients with orbital pathologies like glaucoma and other posterior chamber abnormalities were excluded from the study. Study variables included time duration of the disease, hemoglobinA1c (HbA1c) levels, age and gender and ADC recorded values.

RESULTS: Calculated ADC values were relatively found to be higher in the patients who had relatively raised HBA1C values and the duration of disease was longer. No marked difference was observed between women and men or between the hemispheres.

CONCLUSIONS: DWI can be a guide for follow-up and management of patients with potentially developing diabetic retinopathy and prevent blindness in them.

O-34

Diagnostic accuracy of ACR (TI-RADS) in thyroid nodules on ultrasonography

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OBJECTIVE: To categorize all solid nodules of thyroid identified sonographically according to the TIRADS score and correlating the TIRADS score with BETHESDA histopathological category of the same nodule after FNAC.

METHODS: Ultrasound of thyroid was carried out on GE logic with linear transducer of 7.5 – 12 MHz frequency. 210 patients referred for sonography of thyroid nodules were included in the study from 1st January 2019 to 31st July 2022. Fine needle aspiration was carried out under ultrasound guidance and cytology was done of all nodules categorized according to TIRADS. TIRADS and Bethesda scores were correlated.

RESULTS: A total of 210 patients with 233 nodules of mean size 2.5 ± 1.5 cm were included. The risk of malignancy of the TIRADS categories were: For TIRADS 2 0%, for TIRADS 3 2.2%, in TIRADS 4A 5.9%, for TIRADS 4B 57.9% and for TIRADS 5 100%.

CONCLUSIONS: TIRADS (Thyroid Imaging Reporting and Data System) is a useful diagnostic classification in predicting malignancy and with FNAC using BETHESDA classification, unnecessary surgical procedures can be avoided.

O-35

Cranial ultrasound in hypoxic ischemic encephalopathy

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OBJECTIVE: To describe the US findings in patients with hypoxic ischemic injury (HIE) with reference to detecting the patterns, timing and extent of injury in HIE.

METHODS: Findings were studied in 31 neonates referred to the Radiology Department of Khyber Teaching Hospital from August 2020 to August 2022. Sector probe (4-11 MHz) of Xario 100 was used. Coronal, sagittal and parasagittal views were obtained through anterior fontanelle and mastoid fontanelle approach. Parameters evaluated were: size of lateral ventricles, gray-white matter differentiation, echogenicity of periventricular structures and any grade of germinal matrix haemorrhage if present.

RESULTS: There were 20 males and 11 females ranging in age between 1 and 14 days. Findings are grossly grouped into two categories; those produced acutely as a result of the insult itself, characterised by cytotoxic brain edema and sulcal effacement, squashed ventricles and increased periventricular echogenicity; and secondly those due to complications comprising of intracranial haemorrhage including a choroid plexus bleed, intraventricular haemorrhage or a more severe intraparenchymal haemorrhage.

CONCLUSIONS: Ultrasound is a valuable screening tool in the diagnosis and management of encephalopathic neonates.

O-36

Frequency of ophthalmic pathologies on MRI in patients having optic complaint

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OBJECTIVE: To evaluate the frequency of eye pathologies on MRI, in patients visiting OPDs of JPMC for some ophthalmic complaint and correlate these pathologies with age and gender

METHODOLOGY: This study was carried out in Jinnah Postgraduate Medical center Karachi. It was a retrospective study from July 2021 to June 2022. The participants were the patients referred from different departments of JPMC for MRI of orbit either having some complaint related to eye/orbit/lids or having generalized diseases like hyperthyroidism, sarcoidosis, Diabetes mellitus and hypertension etc.

RESULTS: A total of 72 patients were examined on MRI. Out of these 38 were female (52.7%) and 34 males (47.2%). The mean age was 37.25 ± 17.32 years, (age range 15-72 years). The MRI findings were: 23(31.9%) optic neuritis, 11 (15.2%) endophthalmitis and 11 (15.2%) optic nerve sheath meningioma. Other findings were Graves' disease, optic nerve atrophy, rhabdomyosarcoma, basal cell carcinoma and lymphangioma each 4 in number (27.8%). Lastly 3 (4.2%) of the patients had optic cellulites and 3 (4.2%) had optic hemangioma. One of the patients had elongated globe secondary to acute lymphocytic leukemia ALL (1.4%). No correlation with gender and age was found.

CONCLUSION: Optic neuritis is the most common ophthalmic pathology found in this series. This study will help the ophthalmologist in early diagnosis and better management of common eye problems and the involvement of eye in other general disease.

O-37

Variations in patterns of traumatic brain injury in pediatric age group

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OBJECTIVE: To identify patterns of traumatic brain injury on CT scans in pediatric age group.

METHODS: This was a cross-sectional prospective study, conducted in the Radiology department of Liaquat National Hospital Karachi. The study included all the pediatric patients who came for CT scan brain with history of any kind of trauma. The data included the demographics including name, gender and age of patient, findings of head trauma as subarachnoid hemorrhage, subdural hemorrhage, epidural hemorrhage, intraparenchymal bleeding, fracture, contusions, intraventricular hemorrhage and blood in paranasal sinuses such as incidental findings such as tumors were also included. The study was conducted for a period of 6 months and included 103 number of patients aged 1 year uptill 17years. Statistical analysis was made on SPSS 17 based on the data collected.

RESULTS: A total of 103 records were reviewed. The median age of patients was 7 (IQR= 3 – 14) years. More than half of the injured were males (n=71, 68.9%). Topmost cause of head injury was road RTA (n=44, 42.7%) followed by fall (n=40, 38.8%), blast injury (n=1, 1%), electrocution (n=1, 1%), others (n=7, 6.8%) and unknown mechanism (n=10, 9.7%).

CONCLUSION: There is much need to have first hand knowledge of data regarding variations in patterns of brain injury in different modes of trauma in pediatric population. This study will help to correlate type of head injury on CT scan with different modes of trauma.

O-38

Diffusion weighted magnetic resonance imaging (DW-MRI) in detecting cervical lymph node metastasis from oral cancer

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OBJECTIVE: To determine the diagnostic accuracy of diffusion-weighted magnetic resonance imaging (DW-MRI) for cervical lymph node metastasis from oral cancer taking histopathology as gold standard.

METHODS: A total of 77 patients with oral cancer undergoing MRI imaging and age 18-60 years of either gender was included. Patients with contraindications for MRI investigation (pacemakers, prosthetic valve, aneurysm, clips, plates, any other ferromagnetic material and claustrophobia) were excluded. Selected patients underwent DW-MRI and histopathology before surgery. Patients underwent conventional DW-MRI to include nodes from the base of the skull to the suprasternal notch. Diffusion weighted MRI was performed using 1.5 T GE scanner with a phased-array head and neck coil. Confirmation of cervical lymph node metastasis was assessed by MRI and histopathology.

RESULTS: Overall sensitivity, specificity, positive predictive value, negative predictive value and diagnostic accuracy of diffusion-weighted magnetic resonance imaging (DW-MRI) for cervical lymph node metastasis from oral cancer taking histopathology as gold standard was 91.75%, 90.57%, 94.68%, 90.57% and 91.33% respectively.

CONCLUSION: This study concluded that diagnostic accuracy of diffusion-weighted magnetic resonance imaging (DW-MRI) is very high for cervical lymph nodes metastasis in oral cancers.

O-39

Localization of primary tumor site with ⁶⁸Ga DOTATOC PET-CT in patients diagnosed with metastatic net of liver

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OBJECTIVE: To localize the site of the unknown primary tumor with ⁶⁸Ga-

DOTATOC PET-CT for treatment of patients presenting with metastatic liver neuroendocrine tumor (NET).

METHODS: 37 patients with metastatic NET of liver with unknown primary tumor site, underwent ⁶⁸Ga-DOTATOC PET-CT. The ⁶⁸Ga-DOTATOC PET-CT was considered true-positive if the positive primary site was confirmed by histology or follow-up imaging. False-positive scan was considered if no primary lesion was found compatible to the ⁶⁸Ga-DOTATOC positive site. False-negative was considered all negative scans for primary tumor. A scan was categorized unconfirmed if ⁶⁸Ga-DOTATOC PET-CT suggested a primary, however, no histology was obtained and imaging follow-up was not confirmatory.

RESULTS: The true-positive, false-positive, false-negative, and unconfirmed rates for primary sites were 43.24%, 5.4%, 35%, and 16.21%, respectively.

CONCLUSION: ⁶⁸Ga-DOTATOC PET-CT is an effective modality in the localization of primary tumor site in patients with metastatic NET of liver.

O-40

The effect of breast size and composition on radiation dose by applying radiation dose management system on full field digital mammography

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OBJECTIVE: To determine the effect of breast size and composition on radiation dose by applying radiation dose management system on full field digital mammography in different ethnic groups of Pakistani women.

METHODS: A cross-sectional study conducted at the Radiology Department, Liaquat National Hospital, Karachi, Pakistan. Patient presenting for x-ray mammography were selected. Data was collected based on a structured Performa and was analyzed using SPSS version 23. Categorical variables were presented as frequency and percentages. Numerical variables were summarized as mean ± standard deviation or median with inter-quartile range (IQR) as appropriate. The effect of breast size on radiation dose was ascertained by applying linear regression model, which was adjusted for other covariates. A two tailed p-value less than or equal to 0.05 was taken as statistically significant.

RESULTS: The study included 151 patients about n=75 i.e., 49.7% had grade III breast parenchyma, 45% had grade II breast parenchyma n=68. Only 2.6% had grade I and IV breast parenchyma. Peak voltage (kvp), current (mAs), compressed breast thickness (mm), compression Force (newton) had no correlation with the breast parenchyma having p-values 0.132, 0.110, 0.081 and 0.848 respectively. However, mean glandular dose (mGy) had a significant relation with the breast parenchyma showing a p-value of 0.042. Breast size had a significant association with peak voltage, current (mAs), compressed breast thickness (mm), mean glandular dose (mGy) having values of 0.01, 0.009, <0.00 and 0.007 respectively. The compression force did not have any significant association with breast size (p= 0.574).

CONCLUSION: Breast parenchyma pattern is associated with higher mean glandular dose and breast size with nearly all the parameters affecting radiation dose except the compression force.

O-41**Morphological and metabolic criteria of COVID-19 vaccine associated axillary node positivity on ¹⁸F-FDG PET-CT in patients with breast cancer**

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OBJECTIVE: To determine Covid-19 vaccine-associated lymphadenopathy (VAL) positivity on ¹⁸F-FDG PET-CT regarding its prevalence, temporal response to vaccination and imaging characteristics of VAL in breast cancer patients.

METHODS: Seventy-eight consecutive vaccinated patients with biopsy proven breast cancer who had ¹⁸F-FDG PET-CT for staging or response evaluation were retrospectively analyzed. All patients had COVID-19 vaccine shots in contralateral arms and none in breast cancer side axilla (BSA). In 35 patients ¹⁸F-FDG avid nodes were found in vaccine site axilla (VSA). Morphological criteria on CT images like size, presence of fatty hila and fat stranding of axillary nodes were analyzed. Metabolic criteria on PET images like maximum standardized uptake value (SUVmax) of positive axillary nodes and liver as reference were also measured.

RESULTS: Out of 78 patients, 35 patients had positive nodes in vaccinated axilla (45% prevalence) and 25/78 had breast cancer axilla (33% prevalence). Mean duration of COVID-19 vaccination in each group was 8 ± 04 week (non-significant p-value). On CT images, ¹⁸F-FDG avid nodes in VSA were significantly smaller (10 ± 03 mm) and with intact fatty hila without fat stranding than nodes in BSA with loss of fatty hila (25 ± 10 mm; p < 0.0001). Mean SUVmax of nodes in VSA was significantly lower (2.4 ± 1.1) than nodes in BSA (10.2 ± 5.5, p ≤ < 0.0001). Nodes in VSA showed a significant positive linear correlation between size and SUVmax (p < 0.001). Similarly, nodes in VSA showed a significant negative linear correlation between duration and SUVmax (p = 0.00003). In VSA group, 03 patients having SUVmax > 2 SD of Hepatic SUVmax were subjected to ultrasound guided fine needle aspiration (FNA) and turned out to be metastatic in nature.

CONCLUSION: In COVID-19 vaccinated patients with BC, enhanced ¹⁸F-FDG uptake on PET-CT by axillary nodes in VSA is quite common and may pose diagnostic dilemma. However, morphological (size < 10 mm, intact fatty hila without fat stranding) and metabolic criteria (SUVmax < 2.4 with negative correlation with time of inoculation) have higher diagnostic accuracy in resolving the dilemma. Nodes in VSA having SUVmax > 2 SD of hepatic SUVmax should be considered for FNA to rule out possible metastasis.

METHODS: This descriptive retrospective study was an institutional review board-approved study with a waiver of informed consent. Imaging features from 313 patients with preliminary ultrasound and digital mammogram between November 2017 and May 2020 were induced. Findings were compared with histopathology and immunohistochemical analysis for prediction of molecular classification of breast cancer. We also devised a score called Sono-mammometry score consists of few simple imaging features which can easily be performed in outpatient settings.

RESULTS: Non-Triple negative breast cancers were predominantly hypoechoic and strongly correlated with irregular spiculated margins, peripheral echogenic halo, posterior shadowing and microcalcifications. There is considerable variation in imaging features of Triple negative breast cancers as some of its imaging features overlap with those of typical benign tumors.

CONCLUSIONS: Although imaging characteristics are helpful in prediction of molecular classification but prognostication value of these imaging features is still weak. There is considerable variation in imaging features which warrants vigilance towards improved diagnostic performance. To help better understand these features our Sono-mammometry score can serve as straightforward test which assume to be functional and productive in resource limited settings.

O-42**Correlation of immuno-histochemical subtypes of breast cancer with mammography and ultrasound findings- introduction of sono-mammometry score**

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OBJECTIVE: To correlate sonographic and digital mammographic features with molecular classification of breast cancer and association was also studied for tumor grade, T and N staging.

E-POSTERS (P)

P-1

The role of interventional radiology in pain management

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The aim of this poster is to describe the role of Interventional Radiology (IR) in pain management under image guidance for its enhanced effectiveness with decreased complications as compared to the routine approach. Accuracy and effectiveness of Interventional Radiology in diagnosis and various treatment is now well beyond doubt. It is a rapidly growing super specialty of Radiology giving more accurate results with reduced hospital stay. Interventional pain management is another area in which IR can be extremely helpful for getting targeted treatments to manage patients pain which is being mostly done without image guidance having less accuracy and more complication rates. Procedures like intra articular injections, peripheral nerve blocks, intra discal, transforaminal and peri ganglionic blocks. For cancer patients celiac axis, stellate and ganglion blocks can be extremely helpful in managing severe pains using ultrasound, fluoroscopic, angio-fluoro and CT guidance. Procedures can be very accurate and to-the-point as the needle is guided under image to its precise location so that complication rate is extremely low and procedure time is markedly shorter. Image guided pain management should be considered for managing pain due to its increased effectiveness, reduced complication rates and quick results as compared to compared to the traditional conventional approach.

P-2

A pictorial review of spectrum of biliary diseases in obstructive jaundice on CT and MRCP in mayo hospital

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OBJECTIVE: To evaluate the etiological spectrum of obstructive jaundice in tertiary care Centre Mayo Hospital over the period of one year from 1st July 2021 – 30th June 2022.

METHODS: 164-slice Canon CT and 1.5 Tesla G.E MRI machines were used. CT and MRCP images of 94 patients were reviewed retrospectively. Only those patients having intra and extrahepatic biliary dilatation in the adult population were included in the study.

RESULTS: Out of 94 patients, 54 were females (57.4%) and 40 were males (42.6%). Mean age of presentation was 52 years. Cholelithiasis was found to be the most common benign cause responsible for 34 cases while periampullary carcinoma was the commonest malignancy found in 28 cases, followed by cholangiocarcinoma in 15 cases and GB carcinoma in 13 cases.

CONCLUSION: Cholelithiasis remains the most common benign etiology and periampullary CA as the malignant cause for biliary disease in Mayo hospital.

P-3

Incidental adrenal mass - A non functioning atypical adrenal adenoma; Case report

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Adrenal lesions are always alarming due to the risk of potential malignancy. We often encounter incidental findings of adrenal lesion (s) which raise concern of physician especially if these are large with atypical features. CT has important

role in characterization of adrenal lesions and solves the mystery hence helps plan the management. A young female with non specific abdominal pain for few months came for abdominal ultrasound which showed left supra renal hypo echoic solid mass of 9 x 8 cm with mild internal vascularity. Adrenal protocol CT Scan was planned which showed attenuation values, enhancement and washout patterns in favor of lipid poor adenoma. Search for any primary malignancy was also negative. Adrenal hormonal and detailed clinical assessment showed no hormone related syndrome. Its resection was done due to large size of lesion. Histopathology revealed adrenocortical adenoma with no features of malignancy.

P-4

Post surgical breast arteriovenous malformation

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The objective of this case report is to highlight an unusual yet interesting case of breast arteriovenous malformation. Its knowledge is necessary to make a diagnosis of benign and malignant vascular lesions specially at post surgical scar site on follow up imaging. This will permit more accurate treatment planning and allow breast imagers to have a more active role in post surgical breast scar sites. Venous malformations that occur within breast are most commonly cavernous type and superficial. There is no predilection towards any specific location within the breast. Breast arteriovenous malformations are reported to be found in 1.2% of mastectomy specimens. According to newer classification of vascular anomalies, these are slow flow venous malformations.

We herein report a case of a middle age female presented with multiple lesions in cutaneous and subcutaneous planes of right breast and axillary tail with bluish discoloration, who had previous history of right breast lumpectomy. Her mammogram was done. With sonographic correlation it was diagnosed as multiple slow flow benign AV malformations. So whenever a post-op patient comes with this symptom, breast vascular malformations has to be kept in consideration for diagnosing and managing such patients.

P-5

Imaging findings of small cell neuroendocrine carcinoma of the ureter

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Primary small cell neuroendocrine tumor of the ureter is a rare malignant tumor originating from the metaplasia of urothelial cells. Few cases are reported in the literature. These tumors are usually aggressive. This is the case report of a 57-years male patient who presented with right flank pain for 2 weeks. His past surgical history includes right pyelolithotomy for renal calculi and appendectomy. Ultrasound KUB showed moderate right side hydronephrosis with hydroureter and mild hydronephrosis with hydro ureter on left side along with non-obstructing renal calculi. CT pyelogram showed right proximal ureteric calculus causing moderate hydronephrosis. Segmental dilatation of right mid ureter was seen filled with hypo dense soft tissue density material (HU 38) to be due either to neoplastic growth or inflammatory debris. Left ureteric calculus was seen causing moderate obstructive uropathy. Bilateral URS and DJ stenting was done along with biopsy of right ureteric mass. Histopathology showed small cell carcinoma with tiny foci of squamous cell carcinoma and urothelial dysplasia.

P-6**Hydropneumothorax as an unusual and rare presentation of emphysematous pyelonephritis: A case report**

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Hydropneumothorax is concurrent presence of pneumothorax and pleural effusion in the pleural space and etiology is the often intrathoracic. Retroperitoneal infection presenting as hydro pneumothorax has not been reported previously which prompted us to discuss its etiology and emphasize the importance of cross sectional imaging. A 50-years diabetic female presented with severe shortness of breath, fever and left hydro pneumothorax on Chest X-ray. No significant improvement was seen over time despite of being intubated. So CT chest, abdomen and pelvis was done. CT scan revealed left sided emphysematous pyelonephritis with ipsilateral diaphragmatic tear and resultant left hydropneumothorax. Nephrectomy was done and drain was placed in the left lumbar area. Patient survived and was discharged after one month of hospital stay.

P-7**Perforated sub hepatic appendicitis: Masquerading as sub phrenic abscess**

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Sub hepatic appendicitis is an exceedingly rare presentation accounting for 0.01 percent cases of acute appendicitis. A middle aged female presented with recurrent episodes of right sided abdominal pain, more prominent in right upper quadrant and severe worsening of pain for last one day. Ultrasound abdomen revealed normal gall bladder which was thought to be the likely cause of her symptoms. A hypo echoic collection was also seen in the right sub phrenic area, however no focal lesions were noted in liver. Computed tomography was done for further evaluation which showed a peripherally enhancing right sub phrenic hypo dense collection with pockets of air indenting on liver and raising right hemi diaphragm. A peripherally enhancing tubular structure with speck of air within was noted in right iliac fossa adjacent to caecum and communicating with ipsilateral sub phrenic collection. Based on these findings, perforated sub hepatic appendicitis causing sub phrenic abscess was suspected. A diagnostic laparoscopy was performed which confirmed perforated sub hepatic appendicitis. Appendectomy was done and sub phrenic abscess was drained.

P-8**Diagnostic radiological signs of a ruptured intracranial dermoid cyst**

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Dermoid cysts are ectodermal inclusion cysts that develop at birth. They account for less than 0.5% of primary intracranial tumors and occur four times less frequently than epidermoid cysts. They are most commonly found in the sellar, parasellar, or fronto-nasal regions of the midline. These cysts grow because of glandular secretion and epithelial desquamation. Growth can cause the cyst contents to rupture, causing chemical meningitis, which can lead to vasospasm, infarction, and even death. Dermoid cysts are lobulated, "pearly" masses that vary in size. The capsule is thicker than that of an epidermoid cyst and contains calcification plaques frequently. The imaging findings differ depending on whether or not the cyst has ruptured. On T1-weighted images, all are hyperintense and do not enhance. On T2-weighted

images, the masses have heterogeneous signal intensity that ranges from hypointense to hyperintense. Fat-like droplets in the subarachnoid cisterns, sulci, and ventricles are the best diagnostic clue of a ruptured dermoid cyst. Chemical meningitis caused by ruptured cysts can result in extensive pial enhancement. We present the case of a 24-year-old female patient who had headaches and vertigo for 6 months, as well as two episodes of LOC and seizures. We are presenting this case with the aim of reviewing radiological signs of ruptured intracranial dermoid cyst.

P-9**An atypical presentation of intracranial epidermoid cyst: White epidermoid cyst**

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Epidermoids are benign congenital inclusion cysts that develop from retained ectodermal epithelium during neural tube closure, more common in 3rd to 5th decade with no gender preference and represents 1.8% of all intracranial lesions. The majority of epidermoids are extra-axial and paramedian, arising from the parasellar region and posterior fossa with the CPA cistern being the most common location. The most common clinical manifestations are headache and seizures, followed by vertigo, dizziness, hearing loss, facial weakness and numbness, however trauma, hemorrhage and rupture can cause rapid onset of symptoms. MR imaging characteristics include hypointense on T1WI, hyperintense on T2WI, rim enhancement on postcontrast images, and restriction on DWI/ADC images. A rare subtype of intracranial epidermoid called White epidermoid that exhibits complete reversal of typical MRI signals, such as hyperintense on T1WI, hypointense on T2WI, and reduced or absent diffusion restriction on DWI/ADC images. We present three cases of white epidermoid cysts. We present these cases in order to review the pictorial radiological signs of an intracranial White epidermoid cyst on MRI.

P-10**Curious radiological presentation of the rare case; Herlyn Werner Wunderlich syndrome**

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Herlyn-Werner-Wunderlich Syndrome (OHVIRA syndrome) is a rare congenital Mullerian anomaly characterized by uterus didelphys, blinded hemivagina, and unilateral renal agenesis. At 8 weeks of pregnancy, the Mullerian ducts migrate to the midline and fuse to form the upper vagina, cervix, and uterus. Failure to fusion results in uterine and/or cervix duplication and non-resorption of the vaginal septum. The prevalence of the disease ranges from 0.4 to 6.7%. When the external genitalia are normal, the diagnosis is frequently delayed until after puberty. Dysmenorrhea, intermenstrual bleeding, mucopurulent discharge, lower abdominal pain, and suprapubic mass are common presentations during the peripubertal period. MRI is the modality of choice for diagnosis, because it provides details of uterine morphology. We present the case of a 17-year-girl who had been experiencing lower abdominal pain for three years, which had become severe for one week. This case is presented to go over the pictorial radiological signs of Herlyn-Werner-Wunderlich Syndrome.

P-11**Arterial steal syndrome in patients with hemodialysis arteriovenous fistula undergoing Doppler evaluation**

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OBJECTIVE: To determine the incidence of arterial steal syndrome in patients with hemodialysis access.

METHODS: A total of 10 patients undergoing ultrasound and Doppler assessment for maturation and assessment of fistula were scanned. Findings such as fistula patency, flow volume of the fistula, distal arterial vessels flow direction and spectral waveform were recorded. Other additional data regarding age, gender, ultrasound findings related to fistula and patient's symptoms were also recorded.

RESULTS: All these 10 patients, (n = 10 patients) had sonographically mature fistula and had optimum flow volume rate. Among these 10 patients (n= 1, 10%) had retrograde flow in distal radial artery (post-fistula) without any complaints suggestive of steal phenomenon.

CONCLUSION: Findings of arterial steal syndrome are not uncommon in patients with hemodialysis fistula. Diastolic flow reversal can also be exhibited in patients who do not exhibit any clinical symptoms. Hence, these findings must be included in the ultrasound and Doppler report so that these patients can be serially monitored or surgical intervention can be done in case of symptomatic patients.

P-12**Spectrum of fibrocystic liver diseases. A multidisciplinary approach to diagnosis**

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OBJECTIVE: To determine the diagnostic accuracy of various imaging modalities in diagnosing fibrocystic liver diseases, a term given to congenital abnormalities of liver and biliary system that retain fetal configuration as a result of malformations to ductal plate.

MATERIALS AND METHOD: A retrospective study of 21 paediatric hepatobiliary system done over a period of four months at National Institute of Child Health (NICH) and Jinnah Postgraduate Medical Centre (JPMC), who presented with poorly pigmented stool, dark urine, and hepatomegaly. Patients were evaluated via sonography, followed by magnetic resonance cholangiopancreatography. Hepatobiliary iminodiacetic acid (HIDA) scan has also been used for inconclusive examinations.

RESULTS: Mean age of patients ranging from 25 to 60 days with female: male ratio of 3:1. Diagnostic accuracy of magnetic resonance imaging of biliary tree had sensitivity of 97% and specificity of 94% while that of ultrasound was 93% to 94% in our case series. Sensitivity and specificity of HIDA scan is 100% and 63% respectively. However, histopathology in some cases like biliary atresia is taken as gold standard with accuracy of 100%.

CONCLUSION: Diagnosis of fibrocystic liver diseases is the art of recognition at first signs and symptoms of poor bile flow as abnormal with associated imaging findings on ultrasound and MRI along with absence of tracer excretion into bowel in 24 hours on HIDA scan warrant the need of further workup.

P-13**Right hiatal hernia with herniation of stomach to the right side associated with chronic gastric organoaxial volvulus in an elderly patient having vague abdominal pain for one year**

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In this article we aim to present an unusual yet interesting case of an elderly patient with chronic gastric volvulus diagnosed in the department of Radiology, Mayo Hospital Lahore. Gastric volvulus is an uncommon condition that results from the torsion of the stomach upon its axis leading to gastric outlet obstruction, impairment of vascularity, and eventually ischemia. Although rare, it can present as an acute emergency, therefore its diagnosis should not be overlooked. Although 70% of patients present with the Borchardt triad, a combination of severe epigastric pain, retching, and inability to pass a nasogastric tube, the clinical presentation may not be classic. Alternatively, patients with chronic or intermittent gastric volvulus may present with intermittent abdominal or chest pain, dysphagia, bloating, and heartburn which poses chances of misdiagnosis without radiological imaging. Chronic gastric volvulus is a rare condition with non specific symptoms but a high index of suspicion is required for the correct diagnosis which leads to the optimal treatment. Radiological Imaging plays the most important part in diagnosis of this rare condition.

P-14**High-altitude cerebral edema manifesting as T2/FLAIR hyperintensity and microbleeds in the white matter on MRI brain**

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Unacclimatized individuals are affected by high-altitude illnesses including high-altitude pulmonary edema (HAPE), acute mountain sickness (AMS), and high-altitude cerebral edema (HACE), which can be life-threatening. Here we discuss a 40-year-old male who went on a tour to Nanga Parbat. On returning home, the patient developed symptoms of headache, nausea and vomiting. His symptoms worsened with time, developing lower limb weakness. He presented to our hospital with complaints of nausea and vomiting, shortness of breath and lower limb weakness. Underwent detailed investigations including an MRI brain and whole spine. MRI brain showed hyperintense T2 and FLAIR foci in the bilateral periventricular region, centrum semi ovale and genu, body and splenium of corpus callosum. Microhemorrhages were seen in the corpus callosum on susceptibility weighted imaging.

P-15**A case of MR imaging of grey matter heterotopia with concurrent absence of septum pellucidum**

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Septum pellucidum can be absent as a part of various developmental or acquired conditions including holoprosencephaly, septo optic dysplasia, schizencephaly, congenital hydrocephalus, porencephaly or hydrancephaly. Isolated absence of septum pellucidum is rare though not a life threatening condition. Grey matter heterotopia are cortical malformations due to defective neuronal migration during development which result in a range of functional consequences

mainly epilepsy, developmental delay and intellectual disabilities. Those having only epilepsy generally present in the second decade of life. It can be classified as subependymal, subcortical and band heterotopia. Symptoms in a patient vary in different types of gray matter heterotopia. These are often seen as associated with other central nervous system anomalies including pachygyria, polymicrogyria, agenesis of corpus callosum, schizencephaly, Chaire II malformation and basilar cephaloceles. MRI is the modality of choice for establishing its diagnosis.

We herein report a case of absent septum pellucidum with gray matter heterotopia in an 11 year old boy who presented to Radiology Department, Mayo hospital with complaints of generalized seizures becoming increasingly resistant to medical treatment, aggressive behaviour and decreasing vision showing absent septum pellucidum and gray matter heterotopia on MRI brain. Its knowledge is essential for radiologists as it is important for clinicians for proper counseling of patient regarding the prognosis of patient's condition, search for other anomalies or inabilities which are overlooked like learning disabilities or behavioral changes and make an appropriate management plan for individual patient.

P-16

Giant superior mesenteric artery aneurysm

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The superior mesenteric artery (SMA) has a 5-8% prevalence of visceral artery aneurysms. Irrespective of size, aneurysms are likely to rupture and may be difficult to treat even in elective circumstances. SMA aneurysms may present with upper abdominal pain or pulsating epigastric abdominal mass (50%); some may present with hemorrhagic shock due to aneurysmal rupture in the peritoneal cavity. The possibility of thrombosis with consequent acute bowel ischemia is also there. The choice of best surgical technique is impacted by the fact that 50-60% of SMA aneurysms are mycotic, however atherosclerotic SMA aneurysms are less common. Other causes include trauma, dissection, pancreatitis and neurofibromatosis. In this study, we reported a case of a large superior mesenteric artery aneurysm on MDCT mesenteric angiogram with per operative images who presented with large pulsating upper abdominal mass and dull pain in abdomen, at Radiology Department Khyber Teaching Hospital Peshawar, Pakistan.

P-17

A case report and review of radiological signs: Van der Knaap disease

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Van der Knaap disease is a rare genetic autosomal recessive disorder in which 75% of the cases are caused by mutation in MLC1 gene on long arm of chromosome 22qtel, characterized by macrocephaly and leukodystrophy with subcortical cysts. Because the MLC1 gene encodes plasma membrane protein found in brain, spleen and leukocytes, a mutation in this gene results in the defect of ion and water homeostasis in brain causing cerebral white matter edema and vacuole formation. It is clinically manifested as neurodegenerative features like motor developmental delay, gradual onset of ataxia, seizures almost in all patients and extrapyramidal features like spasticity, dystonia and dysarthria. Neuroimaging findings include megalencephaly, diffuse swollen appearance of cerebral white matter bilaterally and CSF intensity bilateral subcortical cysts in temporal and fronto-parietal regions, sparing the deep and cerebellar white matter. We present a case of a two-year female child complaining of delayed developmental milestones and fits. Features of the disease on MRI are described.

P-18

Feasibility of low dose radiation and low dose iodinated contrast in CT-pulmonary angiography (CTPA) examination

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A high-speed spiral exam with a high-pitch, low-dose CT acquisition technique allows the acquisition of CT Pulmonary Angiography (CTPA) images of excellent diagnostic quality, including visualization of subsegmental branches using low-dose iodinated contrast agents. Patients at risk of contrast-induced nephropathy (CIN) can especially be benefited. The low-dose radiation technique is feasible in clinical routine for CTPA examinations. It can be practicable to conserve both radiation and iodine doses simultaneously.

P-19

Post-caesarean-section bladder-Flap and sub-fascial hematoma - A case report

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Cesarean delivery is a commonly performed surgery and accounts for nearly 20% of all births in Pakistan. Although it is a safe procedure, cesarean delivery has a number of acute and chronic complications that prompt imaging with ultrasonography, computed tomography, and magnetic resonance imaging. Acute complications include hematomas in specific locations that are unique to the procedure, as well as various infections. A bladder flap hematoma occurs in the space between the bladder and the lower uterine segment, while a sub-fascial hematoma is an extra-peritoneal hematoma located in the pre-vesical space behind the rectus muscles and in front of the peritoneum. We present a case of a 37-year woman with lower abdominal pain and mild urinary symptoms after twin caesarean section delivery. Ultrasonography and MRI demonstrated a small to medium-sized bladder flap and sub-fascial hematomas. The patient was monitored in liaison with a gynecologist. There was a progressive decrease in size of these masses or conservative treatment.

P-20

Rare presentation of hepatocellular carcinoma with solitary scapular bone metastasis

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Primary hepatocellular carcinoma is a common malignancy; metastasis to the bones as a presenting symptom is uncommon. Solitary scapula bone metastasis of Primary hepatocellular carcinoma (HCC) is rare with reported incidence rate of 3.8 to 7.8%. This case refers to 72 years old male who presented with painful swelling over the right scapular region. Ultrasound (US), contrast enhanced Magnetic Resonance Imaging (MRI) and subsequent CECT chest, revealed aggressive looking enhancing mass eroding the lower body of right scapula, with infiltration into adjacent muscles suggesting primary malignant bone lesions (osteosarcoma/chondrosarcoma). Ultrasound guided biopsy was performed and histopathology result revealed metastatic carcinoma with most probable primary being hepatocellular carcinoma. On further inquiry, the from patient; who had earlier denied any abdominal problem gave the history of Hepatitis C which was treated with interferon therapy in 2016. Tri-phasic CT scan of Liver showed multifocal arterialized lesions in liver with definitive washout on portal venous and delayed phases consistent with hepatocellular carcinoma. It is important to recognize that HCC can metastasize to bones even long time after initial treatment of chronic Hepatitis. It may be difficult to distinguish between solitary metastasis of HCC and another kind of primary bone tumor on cross sectional imaging; definite diagnosis can be established with histopathology.

P-21**Hereditary sensory autonomic neuropathy: An interesting case report**

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Hereditary sensory autonomic neuropathy type II is a non progressive childhood illness which causes hypotonia and sensory loss. We report a 9-year boy who had alacrimia and a history of recurrent ulcer on hand and feet for 6 years. The patient also had a history of recurrent osteomyelitis due to a possible sensory neuropathy. Due to recurrent blistering, patient had an autoamputation of distal phalanges with dystrophic nails. He was diagnosed with sensory polyneuropathy on nerve conduction studies. This disorder involves a profound loss in sensory fibers and the earliest findings are of autonomic dysfunction. Self mutilation is seen early in the disease. There is no definitive treatment with management mainly consisting of symptomatic and preventative measures. Parent and patient education holds vital importance for a prompt recognition of unrecognized trauma.

P-22**CT and MRI appearance of inner ear aplasia**

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Congenital inner ear abnormality is common cause of sensory neural hearing loss. Michel anomaly is also called an inner ear aplasia and defined as congenital absence of inner ear. This congenital anomaly is secondary to failure of development of otic placode during gestational period before 3rd week of pregnancy. We presents radiological imaging findings of Michel anomaly in 04-year male patient came in ENT outdoor patient department with history of bilateral hearing loss. Michel anomaly is very rare congenital abnormality of ear and most common cause of neurosensory hearing deafness and characterized by total absence of inner ear structures, diagnosed on radiological imaging findings. Radiologist should aware of imaging findings and its congenital other associations and convey the diagnosis to clinician so that he can counsel the patient's parents regarding treatment options and outcome.

P-23**Ipsilateral ovaries - A rare phenomenon**

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Ovarian development starts at the end of 3rd gestational week from intermediate mesoderm. Ovarian malposition is usually a manifestation of Mullerian anomaly. We report a rare presentation of ectopic/mal-positioned right ovary with no other genitourinary abnormality. Morphologically normal unilateral ovaries have been rarely described in the literature. A 34-year fertile female with regular menstrual cycle was diagnosed with invasive ductal carcinoma of left breast. Her staging CT scan showed a lobulated soft tissue density mass in left adnexal region. Ovary was not identifiable on the right side. Ovarian tumor markers were not raised. There was no history of prior surgery. MRI pelvis revealed no ovarian tissue on the right side; instead, both ovaries were located on left, making an angle with each other. No signs of malignancy were reported. Trans-abdominal and trans-vaginal ultrasound examination confirmed the findings. Ipsilateral ovaries is a rare finding and may be discovered incidentally.

P-24**The exceptional case of healthy precious infant surviving with Meckel - Gruber syndrome variant**

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Meckel-Gruber Syndrome (MGS), also known as Dysencephalia Splanchnocystica is a fatal autosomal recessive congenital disorder designated as a triad of renal cystic dysplasia, occipital encephalocele and postaxial polydactyly. It is correlated with a broad spectrum of systemic malformations. Death typically occurs in utero or shortly after birth. The Worldwide incidence fluctuates to occur in 1 in 13,250 to 1, 40,000 live births. Phenotypic variations are reported as well, in which one could present with any two of the cardinal features of MGS. Here we are presenting an exceptional and rare case of healthy baby who presented with occipital encephalocele and unilateral multicystic dysplastic kidney considered to be a variant of Meckel-Gruber syndrome.

P-25**Ortner's cardiovocal syndrome - A case report**

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Ortner's cardiovocal syndrome is a rare condition in which recurrent laryngeal nerve palsy is caused by cardiovascular pathology such as thoracic aortic aneurysm, dilatation of left pulmonary artery or left atrial dilatation. This case stresses the importance to exclude cardiac pathologies in patient with hoarseness. A 55 years old male, nonsmoker, known case of ischemic heart disease, CABG done 3 years ago, presented with 1 month history of worsening hoarseness of voice. Patient refused laryngoscopy. CT neck with IV contrast was advised to rule out any mass lesion. Patient's base line investigations and echocardiography were unremarkable. CT Findings were an antero-medially rotated left aryepiglottic cartilage and medial position of posterior left vocal cord margins along with relative thickening of ipsilateral aryepiglottic fold. No nodule or mass seen in either vocal cords. Sections through upper chest showed a saccular contrast filled out pouching originating from arch of aorta, distal to origin of subclavian artery (aortic isthmus), measuring 3 x 2.9cm with its neck measuring 11mm. It showed peripheral rim calcification and clotted blood within it along its wall- likely to be iatrogenic pseudo-aneurysm. This explained the cause of symptoms.

P-26**Giant pseudoangiomatous stromal hyperplasia in a young girl: A case report**

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Vuitch et al first reported PseudoAngiomatous Stromal Hyperplasia (PASH) as a benign proliferative breast disease. It is thought to be hormone sensitive and represents a hyper-response to estrogen and progesterone resulting in myofibroblast proliferation. It is usually diagnosed a benign breast entity often diagnosed incidentally by histology in breast biopsy specimen. It usually occurs in peri and premenopausal women, but may also occur in adolescent or postmenopausal women on hormone replacement therapy and rarely in men. Definitive diagnosis is challenging as it mimics other benign breast lesions. Less than 20 cases of diffuse and less than 200 cases of tumorous PASH has been reported so far. Its association with malignancy is very rare. Here we report a case of giant pseudoangiomatous stromal hyperplasia in a young girl who presented with asymmetrical enlargement of her right breast. Recognition and reporting of this entity is important for proper management and further surveillance.

P-27**Multifocal positive bone scan is not always metastases: The key to diagnosis is in radiologist's hand**

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Brown tumor (osteitis fibrosa cystica) of bone is an uncommon neoplastic skeletal lesion due to abnormal metabolism in hyperparathyroidism. Parathyroid adenoma is the commonest cause. We present a case of a 50-year lady with bone pains and multiple avid lesions on bone scan, who was referred for metastatic workup. Her chest radiograph showed lytic expansion of right posterior 9th rib and medial end of right clavicle. Biopsy of the rib with prior FNAC was performed under ultrasound guidance. On-spot evaluation of FNAC sample revealed multinucleated giant cells. Bilateral mammogram was normal. Unenhanced CT scan of chest, abdomen and pelvis confirmed appendicular and axial skeletal lesions and hypo-attenuating nodular soft tissue density along left lower pole of thyroid gland, suggesting parathyroid adenoma. No hepatic or pulmonary lesions or lymphadenopathy were documented. Histopathologist identified trabecular bone fragments and associated fibrosis on core biopsy. CT scan was revisited; there was generalized increased bone density and spinal dural calcification. She was called for ultrasound; parathyroid adenoma was confirmed. Serum calcium and parathyroid hormone were markedly raised. Final diagnosis of brown tumors of hyperparathyroidism was made. Microwave ablation of parathyroid adenoma was offered; but she chose medical treatment. Followup showed improvement in calcium and parathyroid levels. Brown tumors of hyperparathyroidism must be considered in differential diagnosis of multifocal osteolytic lesions.

P-28**Appendicular mucinous adenocarcinoma-report of a rare case**

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Neoplasia of the appendix is a rare entity of the gastrointestinal tract which is seen in approximately 1% of appendectomy specimens. The most common symptom is the right lower quadrant pain with a palpable abdominal mass appreciated in 50% of cases. A mucocele or pseudomyxoma peritonei from epithelial mucinous tumors are the two most common cross-sectional imaging findings of appendiceal mucinous neoplasms. We present a case of a normotensive and non-diabetic 65-year old male patient who presented in the emergency department with complaints of mild pain in the right iliac fossa and vomiting for the last 15 days. He was vitally stable. Upon examination, the abdomen was distended and tender in the region of the right iliac fossa, and a palpable mass was appreciated in the right iliac fossa. Ultrasound showed marked abdominopelvic ascites. Contrast-enhanced CT scan showed a large ill-defined multiloculated predominated cystic hypo-dense mass lesion measuring 7.5 x 10.4 x 8.3 cm with peripheral enhancement and areas of mural calcification in the right iliac fossa. A second component of the lesion measuring 6.5 x 3.8 x 10 cm was seen in the right paracolic gutter. This mass was not separately visualized from the appendix and terminal ileum. Bowel loops were thick-walled and matted with gross abdominopelvic ascites, mesenteric haze, and inflammatory fat stranding. The liver showed scalloped margins. A short segment of luminal narrowing was also seen in the distal ileum with intervening dilated bowel loops. These features were concerning for neoplastic etiology likely of the appendix with pseudomyxoma peritonei and possible gut involvement with resultant partial bowel obstruction. The patient underwent a right hemicolectomy and a histopathological specimen revealed mucinous pools with omental infiltration composed of high-grade cytological atypia and a signet ring component in the pool of mucin. Hence the diagnosis of appendicular mucinous adenocarcinoma was made. The patient was discharged and referred for chemotherapy and after that, he was included in our follow-up program.

Appendicular mucinous adenocarcinoma has a poor prognosis and the diagnosis depends on pathological and immunohistochemical examinations. Early diagnosis and proper surgical precautions must be implemented to prevent iatrogenic rupture of the appendix and the widespread seeding of potentially malignant mucin-producing cells throughout the peritoneal cavity.

P-29**Triple primary malignancies in a sexagenarian - a case report**

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Metachronous malignancy in a known cancer patient is an uncommon phenomenon; development of more than two different primary cancers in a patient is even rarer. There are no large local or international studies regarding their incidence. Besides laboratory tests, cross-sectional radiological imaging has prime role in their early diagnosis and management. We present a case of 66-year-old male who developed biopsy-proven three different primary cancers. While being managed for lymphoma, he was diagnosed with renal cell carcinoma and later, lung adenocarcinoma. All lesions were proven histopathologically. Every new lesion in cancer patients is not always metastases. Management requires multidisciplinary approach with tailored treatment for each type of malignancy. Imaging is vital to diagnose and follow all oncological patients.

P-30**Contrast enhanced mammography: A new emerging technique**

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Contrast-enhanced mammography (CEM) is helpful in resolving equivocal findings detected at conventional breast imaging examinations. It can be used for the preoperative staging of breast cancer to evaluate the extent of disease. Screening CEM could be performed as an alternative to breast MRI in women who are at an increased risk of developing breast cancer. We present our initial experience at AKUH of a few cases of CEM done after diagnostic mammograms and biopsy proven malignancy to rule out multifocal and multicentric disease. CEM has comparable efficacy to that of MRI. In comparison it is also cost effective, time saving and in high risk patients it can be a replacement of MRI. The patients who are claustrophobic can also get advantage from this emerging technique.

P-31**Heterotopic pregnancy - a diagnostic challenge for the radiologist**

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Heterotopic pregnancy is the concomitant presence of multiple gestations, one being present in the uterine cavity, the other outside the uterus. It is rare occurring in about 0.08% of all pregnancies. Here, we present a case of second trimester heterotopic pregnancy diagnosed by ultrasound (US) and Magnetic Resonance Imaging (MRI) and managed successfully. This case refers to a 25-year patient at 15 weeks of gestation presenting with vaginal bleeding and pelvic pain. On the basis of US and cross sectional imaging features on MRI, she was diagnosed as a case of heterotopic pregnancy. Exploratory laparotomy was done which revealed right adnexal mass with swollen right fallopian tube for which right salpingo-oophorectomy was done. Histopathological report confirmed the diagnosis of ectopic pregnancy. Mother and the intrauterine fetus remained well on post-operative follow up. The baby has now been delivered, and is alive and healthy. Described case indicates that the existence of intrauterine pregnancy does not exclude the co-existence of ectopic pregnancy.

In any pregnant woman presenting with alarming abdominal pain and adnexal abnormality, heterotopic pregnancy should be among the differential diagnostic possibilities. The patient should be thoroughly investigated using ultrasound and MRI if needed, to exclude this rare diagnosis and allow on-time proper management.

P-32

Rectosigmoid fecaloma causing bilateral hydronephrosis: A rare entity

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Bilateral hydronephrosis with acute anuria, secondary to compression effects of large fecaloma on ureters, is a very rarely reported presentation. We present a case of a 68-year-old Southeast Asian female who was known to have diabetes, hypertension, chronic kidney disease and cerebrovascular accident. She presented to emergency department with severe abdominal pain and watery diarrhea for fifteen days, followed by vomiting, anorexia and anuria for three days. Ultrasound demonstrated renal parenchymal disease and moderate hydronephrosis with no evidence of calculus. Further work up by CT KUB showed fecally impacted and markedly dilated rectosigmoid colon. It was causing mass effect on bilateral distal ureters with resultant moderate hydronephrosis. She underwent manual evacuation and was given laxatives. Re-evaluation with ultrasound for hydronephrosis showed marked interval improvement. This case report manifests bilateral hydronephrosis as an unusual yet serious complication of fecaloma.

P-33

Diagnostic accuracy of multiphase CT scan in differentiating pleomorphic adenoma and Warthin tumor of parotid gland origin

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OBJECTIVE: To determine the diagnostic accuracy of multiphase enhanced computed tomography scan in differentiating pleomorphic adenoma and Warthin tumor of parotid gland origin in clinically suspected patients keeping histopathology findings as gold standard.

METHODS: This is a descriptive cross-sectional study conducted in Radiology department of Dow medical college, Dow University of Health Science, Karachi from November 2020 to October 2021. This study included 158 patients with parotid gland tumor who referred for contrast enhanced CT scan of head and neck. CT images were obtained before and after contrast injection in multiple phases at 30s, 120s and 8 min in multiple planes. Images were analyzed and compared with histopathology. The primary performance outcomes of multiphase CT Scan head and neck in differentiating pleomorphic adenoma and Warthin tumor of parotid gland origin were determined in terms of sensitivity, specificity, accuracy, positive predictive value and negative predictive value keeping histopathology findings as gold standard.

RESULTS: There were 45 males and 113 females with mean age of 53.4±10.9 years. Out of 158 patients, 98 (62%) and 60 (38%) were differentiated into pleomorphic adenoma and Warthin tumor respectively by multiphase CT while 101 (64%) and 57 (36%) were diagnosed respectively on histopathology. Diagnostic accuracy of multiphase contrast enhanced CT scan was 88.0% in diagnosis of parotid gland tumor with sensitivity of 89.1%, specificity of 86.0%, PPV of 91.8% and NPV of 81.7% was found by using histopathology findings as gold standard.

CONCLUSION: Multiphase Contrast Enhanced CT scan is reasonably good and non-invasive imaging modality in differentiating pleomorphic adenoma and Warthin tumor.

P-34

Resolution, SNR, signal averaging and scan time in MRI for metastatic lesion in spine

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MRI image quality is compromise between resolution, scan time, Signal Averaging (NSA/NEX.), SNR and Integrated parallel acquisition technique (SENSE). Any compromise in any of these parameters can lead to poor quality images that can lead to misdiagnosis. The higher the image resolution, the better the small pathologies can be diagnosed, thus it is the goal of imaging a good quality scan by using a standardized protocols. We present a case of 74 year old man with severe lower back pain. His initial MRI did not reveal any significant pathology; however a repeat MRI revealed metastatic involvement of the lumbar vertebrae. Standardized MRI protocols have been developed after much study to optimize all the parameters. Any modification in the protocols to reduce image time is therefore hazardous. It is therefore imperative that they be followed in order to avoid generating suboptimal images.

P-35

Sensitivity of shear wave elastography in differentiating benign and malignant solid breast lesions

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OBJECTIVE: To determine the sensitivity of shear wave elastography to differentiate benign and malignant solid breast mass lesions in correlation with histopathology.

METHODS: This study comprised 105 consecutive patients with palpable solid breast mass lesions who were subjected to ultrasound shear wave elastography (SWE) followed by Trucut biopsy for histopathology. Two images of each lesion over the central and pericentral stiff areas were taken. Minimum, mean, and maximum values were calculated. Statistical analysis was carried out using SPSS 20. The ROC curve was developed. Sensitivity, specificity, PPV, NPV, and cutoff values for benign and malignant lesions were calculated in relation to histopathology results.

RESULTS: A total of 105 patients with solid breast lumps were evaluated in this study. On histopathology, out of 47 benign lesions, 21 (44.6%) were found malignant, while all 58 clinically and radiologically diagnosed cases were malignant on histopathology. The mean age of the patients with benign histopathology was 43.9±9.7 years, while the mean age of patients with malignant histopathology was 43.7±9.2 years. The cut-off mean elasticity value was 75kpa any lesion with a value above 75 will be malignant, while those below will be benign. The area under the ROC curve was 0.966 for mean, 0.848 for minimum, and 0.975 for the maximum elasticity with a sensitivity of 95% for mean, 110.5% for maximum, and 52% for minimum; specificity of 87.2%, 86.17%, and 80.9% with a PPV of 89.15%, 75%, 89.83%, and NPV of 89.13%, 87.87%, and 95% for mean, minimum, and maximum elastic values, respectively.

CONCLUSION: SWE offers quantitative information on elasticity, or the stiffness of the tissue, which can assist in separating benign from malignant lesions. Biopsy is still the gold standard, but it can be used as a non-invasive and trustworthy method of identifying Breast lesions.

P-36**Acute enzymatic mediastinitis as a complication of acute pancreatitis - A rare presentation**

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Acute pancreatitis is an acute inflammation of pancreas and potentially a life threatening condition. It can cause many thoracic complications which include pulmonary edema, pleural effusion, empyema, pericardial effusion, cardiac arrhythmias, mediastinal collections, enzymatic mediastinitis, pulmonary thromboembolism, and thoracic aorta pseudo aneurysm. Acute enzymatic mediastinitis is one of its serious and life threatening complication which is very rare and only few cases are reported in literature till date. It shows characteristics imaging features on CECT scan with heterogeneously enhancing lesion in posterior mediastinum. We report a case of 35-years female with previous history of recurrent pancreatitis now presenting with epigastric pain, vomiting and cough. Chest radiograph showed mediastinal widening and widened right paratracheal stripe. Ultrasound abdomen showed a large thin walled cystic lesion in epigastric region arising from pancreatic tissue and mild ascites. CECT chest and abdomen revealed necrotic area in pancreas with thin walled cystic area representing pancreatic pseudocyst formation. Heterogeneously enhancing lesion was noted in posterior mediastinum extending from arch of aorta along descending thoracic aorta till level of diaphragm. Mild ascites and bilateral pleural effusions were also seen. Patient was promptly referred to Surgery department where intravenous antibiotics were administered and further management was started.

P-37**Primary disseminated intra-peritoneal hydatidosis: An uncommon presentation of a common disease**

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Hydatidosis is a zoonotic disease caused by larvae of *Echinococcus granulosus*. Canids and ungulates remain definitive and intermediate hosts in life cycle of *E. granulosus*, respectively. Humans though can act as accidental intermediate hosts. The organs commonly affected are liver (70%) and lungs (20%). However, intra-abdominal hydatidosis can be observed in rare cases in organs such as spleen, kidney, pancreas and peritoneum. Hydatidosis can be primary or secondary, with primary disease occurring due to ingestion of *E. granulosus* eggs. In secondary form, cysts develop by rupture of primary cysts due to surgery, trauma, or other agents. It has been reported that peritoneal hydatidosis is usually due to daughter cysts (secondary cysts). Primary peritoneal hydatidosis is rare & accounts for only 2% cases of abdominal hydatidosis. We report herein a rare case of primary disseminated intra-abdominal hydatidosis with multiple organ involvement.

P-38**Hypopharyngeal carcinoma with cutaneous metastasis: a case report**

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Occurrence of cutaneous metastasis in hypopharyngeal carcinoma is an extremely rare event reported in literature with an incidence of only 0.8 to 1.3%. Their presence poses a poor prognosis, treatment failure/disease relapse, and median survival of 7-8 months. Dermatological evaluation should be a part of follow up of patients with head and neck squamous cell carcinoma

(HNSCC) in order to rule out cutaneous metastasis. Early diagnosis of cutaneous metastasis would have a positive impact on treatment response and disease prognosis. We report a middle aged female patient, known case of hypopharyngeal squamous cell carcinoma, who initially showed partial response to chemoradiotherapy. Later, she developed cutaneous nodules in the region of right axilla and bilateral lateral chest wall posterior to posterior axillary folds. Excision biopsy of one of these nodules showed metastatic squamous cell carcinoma. Patient was again referred to Oncology Department and her chemotherapy was planned for cutaneous metastasis. Being uncommon, the occurrence of cutaneous lesions in a patient of hypopharyngeal carcinoma should prompt detailed evaluation to rule out metastasis. Early detection will help in improving prognosis and median survival.

P-39**Axillary node metastases invasive transitional cell carcinoma of urinary bladder - a rare entity**

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Axillary lymphadenopathy is a common clinical presentation of variety of benign and malignant diseases. However majority of patients with unilateral axillary lymph node enlargement have an underlying malignancy in which association with breast carcinoma being the commonest one. In most of these patients there will be a discernible primary tumor, either clinically or radiologically. However in axillary lymphadenopathy with negative mammogram, other malignant causes should also be considered in addition to occult breast cancer and these can be metastases from other primary tumors for e.g. lung, genitourinary tract, gastrointestinal, ovarian, thyroid carcinomas and malignant melanoma. Axillary node is an uncommon site of metastases from Transitional cell carcinoma (TCC) of urinary bladder even from its muscle invasive form. Distant metastasis from low grade superficial tumors without muscle invasion or regional metastasis is a very rare occurrence. Here we present a case of axillary nodal metastases from non-muscle invasive (superficial) bladder cancer without history of local recurrence and regional metastases.

P-40**Benign fibrous histiocytoma in breast – uncommon etiology with common presentation**

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Benign fibrous histiocytomas are among the most common soft tissue tumors and made up of mixture of fibroblasts, histiocytes and chronic inflammatory cells. These are commonly found in skin and less commonly in deep soft tissues. There are reports of the presence of malignant counterpart of fibrous histiocytoma in the breast however existence of benign fibrous histiocytoma in breast is a very rare occurrence. We present here a case of benign fibrous histiocytoma at uncommon location with common presentation.

P-41**Esophageal achalasia in an infant**

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Achalasia is derived from a Greek term meaning “without relaxation”, which aptly explains the pathophysiology of the condition. Esophageal achalasia, also known as achalasia cardia, is a neuromuscular disorder of unknown etiology attributed by aperistalsis of the esophagus and the failure of lower esophageal sphincter to relax. The usual presentation of patients is between 25 to 60 years of age and is extremely rare in infants. We have a case of esophageal achalasia in a 9-month infant who presented with regurgitation of solid food; and respiratory symptoms, like lip cyanosis and perspiration, while feeding. She was diagnosed after a barium meal and underwent dilatation. However, due to lack of relief of symptoms, exploratory laparotomy, Heller esophago cardiomyotomy and Dor's Fundoplication was performed. Surprisingly, the patient returned to our institution with similar complains just 7 months later and was diagnosed with recurrent or secondary achalasia on contrast meal study for which she was treated with dilatation.

P-42**Can a benign lesion metastasize?**

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Uterine leiomyomas are common; occurring in 20-30% women after 35 years. Benign metastasizing leiomyoma is an unusual growth pattern; less than 150 cases have been reported in literature. We present a case of a 54-year female, who was referred for ultrasound abdomen due to abdominal pain. She had undergone total abdominal hysterectomy and bilateral salpingo- oophorectomy two years back for uterine fibroids. Her ultrasound showed large omental nodular masses of variable sizes. Multiple pulmonary nodules were present on chest imaging. Ultrasound-guided biopsy of large mobile omental nodular mass in left flank was performed. Histopathology revealed neoplasm containing fascicles and bundles of spindle cells with eosinophilic cytoplasm and elongated nuclei, without cytological atypia, increased mitosis or necrosis. Findings were consistent with leiomyoma. Final diagnosis was benign metastasizing leiomyomas. She was treated with aromatase inhibitor; follow up imaging after three months showed interval reduction in pulmonary and omental masses. Radiological diagnosis, followed by histopathological confirmation is important in recognizing this benign entity in order to prevent patient mismanagement.

P-43**Hepatobiliary variants on magnetic resonance cholangio-pancreatography**

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Biliary duct anatomy is complex with the existence of many common and uncommon variations. The right hepatic duct drains the segments of the right liver lobe and has two major branches: the right posterior duct draining the posterior segments, VI and VII, and the right anterior duct draining the anterior segments, V and VIII. The right posterior duct usually runs posterior to the right anterior duct and fuses it from a left approach to form the right hepatic duct. The left hepatic duct is formed by segmental tributaries draining segments II-IV. The common hepatic duct is formed by fusion of the right hepatic duct

and the left hepatic duct. The cystic duct classically joins the common hepatic duct below the confluence of the right and left hepatic ducts. The most common anatomic variants in the branching of the biliary tree involve the right posterior duct and its fusion with the right anterior or left hepatic duct. MRCP is a reliable non-invasive imaging technique for demonstration of bile duct morphology, which is useful in planning complex hepatobiliary surgeries and interventions and thereby preventing iatrogenic complications. The purpose of the current study was focused on determining the anatomical variants of the biliary tree on MRCP in patients at Radiology department, CMH Abbottabad.

P-44**Osteoid osteoma of the blade of scapula camouflaged as scapulothoracic bursitis: a case report**

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Osteoid osteoma is a benign bone tumor of the developing skeleton that usually occurs in young adults, commonly involving the diaphysis of long bones. In almost half of the cases, it involves the femur and tibia. Bone pain is usually the only presenting symptom that subsides with analgesics. The wing of the scapula is an unusual site for osteoid osteoma. We present a rare case report of horny osteoid osteoma of the wing of the scapula causing scapulothoracic bursitis in a patient who presented with a history of minor trauma to the right shoulder and shoulder region pain. Physical examination of the patient was unremarkable except for a small palpable swelling along the posterior axillary line close to the scapula. No limitation in the range of motion of the shoulder joint was demonstrated. Baseline investigations, X-rays of the shoulder joint, and ultrasound of the swelling were advised. On ultrasound, there was a linear streak of collection with internal moving echoes visible with movement of the shoulder joint. For further tracking of the collection, multi-detector computed tomography (MDCT) was advised, which revealed an osteoid osteoma having two horns causing impingement on the scapulothoracic bursa with resultant scapulothoracic bursitis.

P-45**Additional value of ^{99m}Tc MIBI SPECT/CT in ectopic parathyroid adenoma**

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Primary hyperparathyroidism is common in females occurring in 1 per 500 women. Ultrasonography is usually used to diagnose the parathyroid disease as it is a non-invasive diagnostic modality. But this has been shown to lack the ability to analyze ectopic parathyroid despite having good sensitivity. Dual-phase parathyroid scintigraphy using Technetium- 99 m-MIBI is another tool that has a high sensitivity to ascertain parathyroid adenoma, especially in ectopic cases. The sensitivity of this can be increased using a SPECT scan. The SPECT scan can give an accurate anatomical location of ectopic parathyroid tissue that is of prime importance from a surgical point of view. We present a similar case in which SPECT/MIBI was used to diagnose ectopic parathyroid adenoma.

A seventy-three year old female was referred to the nuclear medicine department with complaints of neck swelling. USG showed nodules in both lobes of the thyroid. The baseline workup reported serum Ca level of 11.2 and increased PTH levels of 194 pg/ml. After the required patient preparation, Parathyroid scanning was done employing dual phase ^{99m}Tc-MIBI scintigraphy. 300 MBq of tracer was injected, anterior static imaging of the neck was acquired every 15 minutes till 01 hours, and then sequential images were taken at 2, 3, and 4 hours. Additional SPECT/CT images of the neck are also acquired. This scintigraphic study showed an avid tracer lesion in the right upper neck region suggestive of ectopic parathyroid, which was previously not shown in ultrasonography of the neck. Surgical consultation for the removal of adenoma was advised. This case showed that ^{99m}Tc MIBI SPECT/CT provides additional help in localization of ectopic parathyroid.

P-46**Burkitt lymphoma: a case report**

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Burkitt lymphoma is an aggressive B-cell lymphoma predominantly affecting children. Median age is 8 years with a male predominance (M: F=4:1). It is considered endemic in parts of Africa. Burkitt lymphoma affects many organs at the time of presentation. It can be treated with chemotherapy. In children prognosis is good with five years survival rates of more than 90%. We report a case of a five-year boy with bilateral parotid gland and anterior chest wall swelling on right side, along with low-grade fever for one month. His HB (7.6 g/dL) and platelets (85000/mm³) were decrease and ESR was 25 mm/hr. Rest of the baseline investigations including WBC count were normal. On ultrasound solid cum cystic masses were seen in bilateral parotid regions and in the anterior chest wall. CECT Neck revealed soft tissue density masses in bilateral masseter muscles with bony erosions of adjacent mandibles and inhomogeneous enhancement after contrast administration. On CECT chest soft tissue density lesion in anterior chest wall caused erosion of the adjacent ribs. CECT abdomen showed bilateral para vertebral soft tissue density lesions, which were causing erosion of the adjacent vertebrae. Mesenteric lymph nodes were also enlarged. Imaging findings were suggestive of lymphoma, which was confirmed on biopsy as Burkitt lymphoma.

P-47**Cemento - ossifying fibroma**

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Cemento-ossifying fibroma is a rare benign fibro-osseous neoplasm commonly involving the jaws majority of lesions occur in mandible bone. It can be discovered as incidental finding on radiological imaging. Symptomatic patients present an with slowly growing mass involving the jaws commonly in mandible bone and can attain a large size over time. It can cause facial deformity if left untreated. We present such a case of Cemento- ossifying fibroma involving the right hemi-mandible bone, its radiological imaging findings including X-ray (OPG) and CT scan, and histopathology.

P-48**Type VI choledochal cyst: A very rare case**

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Type VI choledochal cyst is an unusual congenital dilatation of the cystic duct. It is extremely rare, with only a few cases documented in the literature. Choledochal cysts, also known as common bile duct cysts, are congenital cystic dilatation of any part of the bile ducts. It has been conventionally classified into five major types. This classification excludes isolated cystic duct cysts. The first case was reported in 1991 and named as type VI biliary cyst. It is mostly symptomatic, with right upper quadrant pain, fever, and jaundice as common symptoms. For an accurate diagnosis, Magnetic Resonance Cholangiopancreatography (MRCP) is required. A 50-year male patient presented to the outpatient department with right upper quadrant pain (RUQ) occurring intermittently over the previous year, with each episode lasting approximately one week. There was no previous history of fever, jaundice, or weight loss. Except for tenderness in the RUQ, physical examination revealed no abnormalities. The hemogram and blood chemistry results were both normal.

The gallbladder was normal on abdominal ultrasonography, which was used to investigate the cause. A thin-walled, tubular, cystic lesion was discovered in the porta hepatis region, with no association to CBD. His MRCP revealed a cystic out pouching arising from the cystic duct. There was no correlation with the CBD. The gall bladder and the remainder of the biliary channels were unremarkable. Type VI choledochal cyst was diagnosed. The purpose of this case report is to review the pictorial radiological signs of type VI choledochal cyst on MRCP and ultrasonography.

P-49**Circumportal pancreas - A rare variant of pancreatic embryology**

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Pancreas and pancreatic duct-related anomalies, including some normal variants, are often reported as coincidental findings in asymptomatic individuals. Ectopic pancreas, annular pancreas, pancreatic divisum, circumportal pancreas, and pancreatic ducts variations are some known anomalies and variants. Pancreatic divisum is the most frequently known congenital disorder of the pancreas, occurring in approximately 10 % of humans. Circumportal pancreas is a rare annular variant with a prevalence of 1.1-2.5 %, in which the portal vein or splenoportal confluence is bordered by the pancreatic tissue. We present a case of a 65-year-old female who came for CT enteroclysis with the complaint of diffuse abdominal pain. Her CT enteroclysis revealed pancreatic parenchyma surrounding the portal vein like an annulus occupying an infraplenic location . The pancreatic duct was coursing anterior to the portal vein. The pancreas otherwise appears normal. The pancreatic duct was of normal caliber. The portal vein was usual. There was no evident bowel-related mass appreciated. This rare entity presents a diagnostic challenge for a radiologist because misinterpretation of the circumportal pancreas as a pancreatic head mass can significantly impact clinical outcomes, i.e., postoperative pancreatic fistula, and can help surgeons plan better approaches for pancreatectomy.

P-50**Creeping mediastinal lymphangioma transgressing anatomical compartments: a rare case**

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Lymphangiomas synonymously referred to as lymphatic malformations are rare non neoplastic lesions of vascular origin showing lymphatic differentiation. These are most commonly reported in children within the neck and axillary region, however, mediastinum remains the commonest site in adults where the diagnosis is usually incidental on imaging done for non-specific symptoms. Lymphangiomas owing to benign proliferation of lymphatic channels can show trans-spatial and trans-compartmental infiltration creeping and transgressing through anatomical zones with high recurrence risk and therefore pose significant radiological challenge in diagnosis and surgical challenge in treatment. We present the case of a 48-year female who initially presented with progressively worsening shortness of breath, cough and hemoptysis for 2 to 3 years. Her initial workup was unremarkable, however upper GI endoscopy showed external compression on esophagus. She underwent contrast enhanced CT chest revealing a large non-enhancing soft tissue attenuation lesion with variable Hounsfield units centered within posterior mediastinum causing significant mediastinal widening with mild anterior displacement of heart.

The mass draped along the anterior vertebral margin encasing descending thoracic aorta with non-visualization of esophagus separately and gaining access across the perivascular route in intra pulmonary region on left side. There were no enhancing solid component. Fat attenuation areas with associated mediastinal or pericardial infiltration was seen. On the basis of imaging diagnosis of mediastinal lymphangioma with pulmonary hilar extension was suggested. The patient underwent thoracotomy with complete dissection of the mediastinal tumor and made subsequent uneventful post-operative recovery.

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CT chest featuring pulmonary artery aneurysm: A rare case report

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Pulmonary artery aneurysm is a rare entity in the spectrum of thoracic cavity lesions. Various etiologies are associated with it such as structural cardiac anomalies, structural vascular anomalies, pulmonary hypertension, vasculitis and infection. Patients with PAA are usually asymptomatic or present with nonspecific symptoms. Therefore, making the treatment controversial. CT scan plays an important role in the diagnosis of pulmonary diseases. The treatment of choice is surgical intervention to avoid fatal rupture of aneurysm. Here we present a CT Chest of such patient who came to us and was diagnosed as PAA.

P-52

Importance of delayed phase in characterization of liver lesions on CECT scan

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OBJECTIVE: To identify the importance of delayed phase in characterization of hepatic lesion on CT liver dynamic.

METHODS: This study was conducted at Rehman Medical Institute Peshawar from 1st January 2020 to 30th June 2021. Data was collected from Health Management & Information System after obtaining ethical approval. 100 patients with hepatic lesions were selected randomly irrespective of age or gender restriction. All the scans were performed on 128-slice CT scanner. After getting renal functions report each patient was orally hydrated and contrast was injected at the rate of 1.5ml/kg body weight. Liver was scanned in arterial venous and delayed phases. All the findings in distinct phases were noted. All the scans were interpreted and reported by consultant radiologists. Data was put into MS excel and results were obtained.

RESULTS: A total of 100 scans were analyzed including both benign and malignant conditions. Out of 100 cases 3 came out to be abscesses, 13 cysts, 13 hemangiomas, 58 hepatomas, 4 cholangiocarcinoma, and 9 were metastasis. 5 types of findings were noted in the delayed phase of triphasic scan. Either there was complete washout, no washout, delayed enhancement, no enhancement or washout and progressive filling of the lesion by the contrast material. In benign lesions no washout was seen in delayed phase in the abscess wall. There was progressive filling in hemangioma and no enhancement or washout was seen in cyst. In all 58 cases of hepatocellular carcinoma there was complete washout of the contrast irrespective of the size, location, gender, or age of the patient. No washout was seen in metastatic liver conditions and delayed enhancement was noted in all cases of cholangiocarcinoma.

CONCLUSION: Delayed phase is very important in identifying and differentiating benign and malignant hepatic lesions.

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MRI imaging of Dyke-Davidoff Masson syndrome - A case series

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Dyke-Davidoff-Masson syndrome (DDMS) is a rare neurological disorder with an unknown incidence. It is caused by brain injury from a variety of causes, particularly in infancy. Cerebral hemiatrophy/hypoplasia, hemiparesis on the opposite side, seizures, compensatory osseous hypertrophy and capillary malformations (in some cases) are characteristic imaging features. There are two varieties of DDMS: congenital and acquired (during early life due to brain damage, usually traumatic). Infantile causes includes neonatal vascular insult or infection. Patient develops symptoms during perinatal period or infancy. Trauma, tumors, infections, ischemia, haemorrhages, seizures and infections are the primary causes of acquired type. We present a cases series of 07 patients diagnosed at JPMC, who presented with history of seizures, headache, hemiplegia and intellectual disability. Subsequent MRI brain revealed diffuse atrophy of one of the cerebral hemispheres with prominence of sulci and gyri, compensatory calvarial thickening and hyperpneumatization of frontal sinuses, ethmoid and mastoid air cells. Dyke- Davidoff-Masson syndrome is a rare syndrome primarily diagnosed through radiological analysis, MRI is powerful imaging modality with pertinent imaging features associated with this syndrome because clinical symptoms are nonspecific. Seizure management is the main goal of the majority of supportive treatments.

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Spontaneous heterotopic pregnancy: a rare condition

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Heterotopic pregnancy is simultaneous occurrence of intrauterine and extrauterine pregnancy. This condition is very rare. The estimated incidence is 1 in 30,000 normally conceived pregnancy. The risk of heterotopic pregnancy increases in patients with risk factor for ectopic pregnancy and with advent of assisted reproductive techniques (ART). Heterotopic pregnancy is life threatening condition so it's timely diagnosis is important for early surgical management and to reduce the incidence of further complications and mortality. The aim of this case report is to present a case with early diagnosis of this rare condition. This case refers to 28 years old female with gestational age of about 6 weeks presented with complain of lower abdominal pain. Trans abdominal ultrasound was performed, which revealed intrauterine pregnancy with yolk sac. No fetal pole was evident. It was associated with a large heterogeneous complex adnexal mass and small amount of hemoperitoneum. MR imaging was done, which revealed heterogeneous abnormal signal intensity lesion in left adnexa with T1W hyperintense signal. Laparotomy was done, it revealed left sided ruptured ectopic tubal pregnancy with 1000ml of hemoperitoneum. Left sided salpingectomy was then done. The specimen was sent for histopathology, which confirm the diagnosis of ectopic pregnancy. On follow-up ultrasound scan after 2 weeks patient underwent in missed abortion. Heterotopic pregnancy is a rare condition, however pregnant women with unusual lower abdominal pain and adnexal lesion, the heterotopic pregnancy should be kept among the differential diagnosis possibilities. The presented also signifies the importance of thorough and careful ultrasound examination of adnexa in patient with intrauterine pregnancy for early diagnosis of this rare condition, so that prompt surgical management can be done in due time and reduce the incidence of women morbidity and mortality.

P-55**Embolization of bilateral inferior vesical arteries in refractory hemorrhagic cystitis in post radiation cervical carcinoma****Muhammad Mehraiz Khan***Department of Radiology, Institute of Nuclear Medicine and Oncology (INMOL), Lahore, Pakistan.**Email: mahrezkhan2015@gmail.com*

Hemorrhagic cystitis occurs due to the formation of thin blood vessels in the mucosa and the accompanying edema of the bladder mucosa. This entity is formed due to pelvic irradiation or chemotherapeutic drugs. Conservative treatment such as hydration and irrigation of the bladder can be initially done, but it is insufficient for massive hemorrhagic cystitis. For the later, a surgical option is the last resort that includes ligation of the hypogastric arteries and urinary diversion with or without cystectomy.

Percutaneous embolization of the feeding vessels is a minimally invasive option with less morbidity than open surgical treatment. We report our experience of doing embolization of bilateral inferior vesical arteries. A 52-year female, known case of carcinoma cervix, referred to Interventional Radiology (IR) department for embolization of bilateral inferior vesical arteries for refractory hemorrhagic cystitis. The patient's primary disease was not resectable back in 2019, so chemoradiotherapy started with eight chemotherapy and six radiotherapy cycles. The patient was on USOH for three years, then developed gross hematuria. She presented to the Urology department, where intra-vesical silver nitrate was given. Still, the bleeding did not stop, and she was referred to the IR department. The right femoral artery was punctured, and both ipsilateral and contralateral inf. vesical arteries were identified. Digital subtraction angiography was done, and there was contrast extravasation into the urinary bladder. Then both vessels were embolized using the PVA particles (100–300-microns). Post embolization, DSA was again performed, and there was no contrast leaking into the UB. Patient was followed after 24 hours in the Urology ward. Her urine was clear of blood. Her Hb improved up to 9 g/dL after 24 hours and to 12.5 g/dl after 48 hours.

P-56**Coarctation of aorta diagnosed by renal artery Doppler ultrasound in a young hypertensive patient -a case report****Saira Bilal, Sana Hadia Qaiser***Department of Radiology, Punjab Institute of Cardiology, Lahore, Pakistan.**Email: sanahaider92@gmail.com*

Coarctation of aorta is a congenital anomaly occurring due to narrowing of aortic arch, usually distal to left subclavian artery origin. Diagnosis is often overlooked until late stages, when patient presents with congestive cardiac failure. Here we present a case of a 15-year female patient evaluated by renal Doppler ultrasound due to persistent hypertension. Ultrasound showed decreased peak systolic velocities, elevated end-diastolic flow and low resistance pattern in both renal arteries with prolonged acceleration time, giving tardus parvus pattern. Abdominal aorta waveform showed reduced peak systolic velocity, spectral broadening and loss of triphasic waveform, raising suspicion of a more proximal stenosis at level of aorta. Bilateral upper limb Doppler showed normal PSV with triphasic pattern of arteries however lower limb arteries showed loss of triphasic pattern and reduced PSV. Renal Doppler Ultrasound is a simple, affordable and non-invasive test that can be used as a screening tool in young patients with persistent hypertension to rule out coarctation of aorta before proceeding to more costly methods like CT Aortogram.

P-57**Misplaced intrauterine contraceptive device (IUCD): A diagnostic dilemma****Hina Pathan, Imrana Masroor, Shaista Afzal***Department of Radiology, Aga Khan University Hospital (AKUH), Karachi, Pakistan.**Email: hina.pathan@aku.edu*

We present a case of a 36-year woman with an accidental finding of two contraceptive devices, one being present inside the uterine cavity and the other one located in the abdomen. The patient presented to the Emergency Department with missed periods, abdominal pain and positive serum beta HCG test. She had history of postpartum IUCD insertion, possibility of ectopic pregnancy was suspected. Ultrasound showed early intrauterine pregnancy without IUCD. As the IUCD was placed postpartum it was considered that it had expelled. She subsequently chose to have termination of this pregnancy so another intrauterine contraceptive device was inserted. After 9-months she presented with abdominal pain along with a pelvic radiograph showing two contraceptive devices. A limited CT-scan pelvis was then performed which showed one IUCD inside the uterine cavity and another in the lower abdomen. The misplaced intrauterine contraceptive device was removed laparoscopically. Patients with IUCD should be monitored, if clinical exam and ultrasound show suspicion of misplacement then a plain film of abdomen is the next preferred imaging modality for locating the misplacement.

P-58**Incidental renal peripelvic lymphangiectasia with bilateral renal vein thrombosis in patient with an obstructing distal ureteric calculus****Farzana Rahim,¹ Masroor Ahmad,² Ijaz Ahmad¹***¹ Department of Radiology, Balochistan Institute of Nephro-Urology, Quetta, Pakistan.**² Department of Radiology, Bolan Medical Complex Hospital, Quetta, Pakistan. Email: docfarzanarahim@gmail.com*

Renal peripelvic lymphangiectasia is an uncommon lymphatic malformation, Usually discovered incidentally due to its vague clinical presentation. Its association includes renal vein thrombosis. We present a case of a young male who presented with acute right flank pain due to an obstructing right distal ureteric calculus. Left kidney showed a cystic lesion in left renal pelvis with increased perinephric vascularity. CECT confirmed the cystic lesion with associated chronic thrombus in left renal vein; a thrombus was also noted in right renal vein. Renal lymphangiectasia is a benign condition but its timely diagnosis is important to reduce its pressure effects on the renal parenchyma and hilar lymphatics, and to timely address its associations and complications.

P-59**Incidental finding of ventral herniation of the gall bladder****Asma Javed, Sadia Azmat Khan***Department of Radiology, Islamabad Diagnostic Centre, Islamabad, Pakistan.**Email: dr.asmajdq@hotmail.com*

Incarcerated abdominal wall hernias may contain a variety of contents, but very rarely contains the gall bladder. A different management approach is taken if diagnosed. A 50-year male presented for cholelithiasis and a sinus tract in RHC. MRI showed lithiasic gallbladder showing partial herniation through right subcostal region to subcutaneous region with cholelithiasis and cholecystitis. The anterior wall of herniated part of gall bladder showed ill-defined interface with overlying skin. This was further confirmed on sonogram which showed the fistulous track containing calculi in gall bladder. Incarcerated gall bladder hernia is an extremely unusual condition, best diagnosed by CT scan. Management should involve operative reduction, cholecystectomy and consideration of repair of the defect.

P-60**Greater trochanteric pain syndrome diagnosed by MRI hip joint in a diabetic patient - A case report**Saira Bilal, **Amna Kazmi***Department of Radiology, Punjab Institute of Cardiology, Lahore, Pakistan.**Email: dramnakz@gmail.com*

Greater trochanteric pain syndrome refers to pain that originates from lateral hip joint. Most common in middle aged females, it occurs usually due to injury to the soft tissues that lie over the upper aspect of the thigh bone. MRI is the favoured modality for evaluation of the hip region disorders. A 65-year male patient came to indoor radiology department with history of right sided hip pain. Physical examination revealed mild tenderness at right lateral hip joint. MRI was advised to rule out Trochanteric bursitis/greater trochanteric pain syndrome. It showed sleeve fluid pocket lateral to right greater trochanter, low signal on T1 and high signal on T2 and STIR sequences Abnormal hyperintense signals on T2 and STIR noted involving lateral fibers of gluteus maximus and adductor Magnus muscles, adjacent to the trochanteric bursa. MRI should be utilized in a simple systemized approach by MSK radiologist in order not to miss a finding that may influence the surgical outcome of the patient presenting with greater trochanteric pain syndrome.

P-61**Hypothalamic hamartoma- A rare cause of central precocious puberty**

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Hypothalamic hamartoma is a well-known rare neurological cause of central precocious puberty and gelastic seizures and may remain asymptomatic for long period. It is rare and non-progressive tumor like congenital malformation. Precocious puberty defined as children attained the puberty before age of 8 years in girls and 9 years in boys. We presents such a case of precocious puberty due to hypothalamic hamartoma in 5 year old boy and its radiological imaging findings.

P-62**HRCT manifestations of pulmonary edema: An imaging guide to diagnosis**

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OBJECTIVE: The objective of this study was to show various radiological manifestations of pulmonary edema on HRCT for better diagnosis.

METHODS: In this cross sectional retrospective study of about 100 patients done in tertiary care hospital of Lahore, we collected data regarding various presentations of pulmonary edema on high resolution computed tomography (HRCT) done on 16-slice CT machine. The data was collected in pictorial form along with their complete history, age, gender and clinical progress

RESULTS: Various radiological manifestations of pulmonary edema as Kerley's lines, peri-bronchial cuffing, hilar congestion and cephalization, interstitial thickening and pleural fluid were collected and results were tabulated considering various variables.

CONCLUSION: Knowledge of various presentations of pulmonary edema is necessary to make an accurate diagnosis as this can be really beneficial to the patient.

P-63**Implementation of radiation protection program (RPP) in accordance with regulatory requirement in a high volume radiology department of a public sector hospital in Peshawar, Pakistan**

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OBJECTIVE: Basic purpose was to highlight the radiation safety measures taken in a public sector hospital towards the implementation of radiation protection program to ensure safe radiation culture both for staff, patients and public.

METHODS: Descriptive analysis was carried out in the largest public sector hospital of KPK to highlight the radiation safety measures taken in order to implement the radiation protection program in developing safe culture toward radiation practice. The first step taken started with the induction of Medical Physicists as several radiation safety standards lacking were identified by the Physicists, matters were discussed with higher authorities, immediate actions were taken and achieved considerable success towards the implementations of safe radiation culture in accordance with regulatory requirements.

RESULTS: All the weak zones were identified and safety measures were taken and addressed accordingly. Radiation safety culture is emerging in its true sense according to regulatory standards and radiation protection program (RPP) has been implemented in the Radiology department of LRH and its true enforcement is ensured by daily safety rounds by observing various operational aspects of RPP and technical training of radiation workers is being conducted to develop their skills regarding safe culture of radiation practice.

CONCLUSION: Radiation protection program has been implemented through team effort of all stakeholders as per regulatory guidelines, safety standards are being followed regarding safety of radiation workers, doctors, patients and public in general.

P-64**Extra - pulmonary presentations of tuberculosis**

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OBJECTIVE: To analyse the radiological findings, imaging manifestations and typical distribution patterns which lead to the diagnosis of tuberculosis even in cases that mimic malignancy, have a negative contact history or negative tuberculin irrespective of initial clinical suspicion, history or tuberculosis test findings.

METHODS: Findings were studied in 26 patients having extra pulmonary presentations of TB analysed in the Radiology Dept of Khyber Teaching Hospital, Peshawar during the time period from August 2019 to August 2022. Different imaging radiological modalities like X-ray, ultrasound, MRI and Multidetector CT were used.

RESULT: Tuberculosis involved a wide variety of organs. The main radiological findings were dystrophic calcifications, necrotic lymphadenopathy, cystic areas, micro-nodules, tuberculoma and abscess formation.

CONCLUSION: It is very important and fruitful for a radiologist to know and identify the different ways tuberculosis can present and its typical manifestations in different organs on several imaging modalities which can increase the detection rate in high-risk populations, and help in further management. Extra-pulmonary tuberculosis can occur regardless of a patients immune status and hence; a thorough radiological evaluation is imperative where ever clinically suspected.

P-65**Incidental right Bochdalek hernia with interruption of inferior vena cava and hepatic venous collateral continuation in a young girl**

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Bochdalek hernia is one of the most common type of congenital diaphragmatic hernia usually on left side. Bochdalek hernias are usually detected in the neonatal period presents with respiratory distress and cyanosis. It is asymptomatic in 14% of patients (usually in female with right sided hernia) and 12% of patients with a Bochdalek hernia may have associated cardiac, pulmonary or gastrointestinal abnormalities but associated IVC abnormalities were not described. A 15-year female had lower abdominal pain and ultrasound done which shows markedly upward displaced liver. Her plain CT scan done initially showed herniation of liver and colon in right hemi thorax. Contrast CT scan demonstrated right Bochdalek hernia associated with interruption of inferior vena cava and hepatic venous collateral continuation. The association of a bochdalek hernia with anomaly of the IVC is rare, with only two cases described in literature.

P-66**Jejunal duplication cyst in a child - a rare presentation**

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Enteric duplication cysts are rare congenital anomalies that present with variable symptoms like abdominal pain, distension and vomiting depending upon the site. They can occur in the foregut, midgut and hindgut and often diagnosed in the neonatal period with ultrasound or CT scan. Pathology confirms the intestinal origin of cysts. Jejunal duplication cysts represent an exceedingly rare subset of these duplication cysts, ileal cysts being the most common. Surgical resection is appropriate management due to known complications like obstruction, hemorrhage, perforation, and malignant degeneration. The aim of this poster is to discuss a 10-year child presented at Radiology department of Khyber Teaching Hospital, Peshawar with history of on and off abdominal pain. Radiological workup revealed a cystic lesion which was subsequently confirmed to be a jejunal duplication cyst.

P-67**The shortest route to identifying small bowel pathology - role of computed tomography in small bowel obstruction**

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OBJECTIVE: Small bowel obstruction (SBO) is a common emergency diagnosis based on clinical signs and radiographic findings. It is estimated to account for 2% of all patients with abdominal pain. It accounts for 12–16% of hospital admissions in the United States. There is a consensus regarding the use of CT in the evaluation of patients with SBO, and many studies reported that CT is a helpful tool to diagnose SBO, identify causes and the transition point, and most importantly, detect ischemia, which requires prompt surgical intervention. Our study highlights the causes of SBO diagnosed per CT scan abdomen calling for emergency surgical intervention.

METHODS: After IRB approval we performed a cross sectional study conducted at Shifa International Hospital, upon patients from January 1, 2020 to June 30, 2021. We retrospectively reviewed cross-sectional computed tomography scans of 600 patients who presented with acute abdomen. Among them, 230 were diagnosed with small bowel obstruction. There 79 (34.9%) patients were female, whereas 151 (65.1%) patients were males. Mean age was 55 + 3 years.

RESULTS: Adhesions were the most common cause of small bowel obstruction. The distribution being adhesive disease (37.5%), neoplasm (17.7%), herniation (9.1%), inflammatory bowel disease (7.8 %), intussusception (5.2%), volvulus (2.6%) and others (4.7%).

CONCLUSION: CT has an essential role in the accurate diagnosis of cause of the intestinal obstruction. Safe and effective management depends on prompt and accurate.

P-68**Lead encephalopathy with characteristic brain magnetic resonance imaging findings**

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Lead poisoning is a rare multisystem disorder, more commonly affecting children. Occupational exposure, traditional medicines, and contaminated alcohol have been associated with lead encephalopathy in adults. Here, we present a case of MR imaging findings in a patient working in a lead factory presenting with complaints of fever and generalized tremor for the last 10 days. On clinical examination, the patient showed memory loss, mild disorientation, and paraparesis. There was bilateral hypertonia and hyperreflexia, up going plantars, and spastic gait. The blood lead level was high (>1.0ug/dl). The patient was evaluated with MR imaging, which showed bilateral symmetrical involvement of thalami, external capsule, basal ganglia, brainstem and subcortical white matter of temporal lobes. This case highlights the importance of recognizing clinical markers and characteristic imaging findings, which can provide clues to an early diagnosis of this otherwise rare clinical condition, and avoid further lead exposure.

P-69**Extra nodal marginal B cell lymphoma of mucosa associated lymphoid tissue (MALT) lymphoma of breast: A rare entity**

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Breast lymphomas are rare breast tumors accounts for only 0.5% of all breast malignancies and 1% of non Hodgkin lymphoma (NHL).¹ Breast lymphomas are usually categorized in to primary and secondary. Primary breast lymphomas (PBL) accounts for less than 1% of breast malignancies and less than 2% of extranodal NHL. Secondary breast lymphoma (SBL) refers to systemic lymphoma either along with PBL or secondary to the breast and accounts for about 17% of secondary breast metastasis with prevalence of 0.07%. It is the most common cause of metastasis to the breast.² Extranodal marginal B cell lymphoma of mucosa associated lymphoid tissue (MALT) of breast is extremely rare with an incidence of 9-28%. Here we present a case of bilateral breast lymphoma in a 60-year female who came with complain of bilateral breast lumps. Radiologists and clinicians need to be aware of this rare entity to avoid misinterpretation. Multimodal imaging approach will help in proper diagnosis. However, biopsy and histopathological evaluation remain the gold-standard for diagnosis.

P-70**Pyopneumothorax with mediastinitis- A rare complication of a common procedure**

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Nasogastric tube insertion is a simple and commonly performed bedside procedure. Indications for NGT insertion can be for diagnostic or therapeutic purposes such as for medication administration and nutritional supplementation. As insertion of NGT is usually done without any imaging guidance, malpositioned tubes into tracheobronchial are not uncommon. Malpositioned tubes can happen from 0.3-15%. Pneumothorax has also been reported in upto 1.2% of patients. This can cause unexpected and serious pulmonary complications, nasopharyngeal, esophageal and gastric trauma and perforation. Significant pyopneumothoraces with mediastinitis are rare but potential complications that clinicians need to be aware of. We herein report a case of 1-year child having pyopneumothorax with mediastinitis and emphysema, following NGT insertion diagnosed on MDCT Chest.

P-71**Recurrent anaplastic meningioma with scalp metastasis: a case report**

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Meningiomas have three histological grades. Risk of recurrence is reported to be associated with grade III being at highest risk of recurrence ranging from 60-94%. Occurrence of recurrence at multiple sites and scalp metastasis in anaplastic meningioma are an extremely rare event with an reported incidence of only 0.1%. Their presence poses a poor prognosis, treatment failure and disease relapse. We report an old female, known case of anaplastic meningioma, who had undergone for surgery twice and radiotherapy. Initially, the case presented with solitary dural based extra-axial tumor with CSF cleft and buckling of white matter, T2 heterogeneously hypointense and post contrast enhancement in right parietal lobe – histopathology revealed anaplastic meningioma WHO grade III. Later on she underwent radiotherapy at surgical bed. Her recent MRI brain showed multiple soft tissue extra-axial masses in temporal and parietal lobes with significant post contrast enhancement. Multiple soft tissue nodules are also seen in adjoining scalp. Excision biopsy of one of these scalp nodules showed metastasis from anaplastic meningioma. The occurrence of extra-axial brain lesions at multiple sites and development of scalp metastasis in a patient of anaplastic meningioma is a rare event.

P-72**Audit of adequacy of MRI imaging of shoulder - a multicenter quality improvement project**

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OBJECTIVE: To assess and optimize the imaging planes and coverage of shoulder MRI in radiology departments of multiple centers.

METHODS: This multicenter audit included all the shoulder MRI performed at Fauji Foundation Hospital (FFH) Rawalpindi Radiology Department, The Diagnostic center Lahore and at University of Child Health Sciences and Children Hospital, Lahore. All shoulder MRI performed during past 3 months were included. Percentage of examination with adequate coverage and percentage of oblique coronal and sagittal planes orthogonal to supraspinatus tendon was assessed.

RESULTS: There was 100% adequate coverage in FFH however, the total adequate oblique sagittal scans calculated to be 71% with inadequate scans of 29%. The total adequate oblique coronal scans calculated to be 82.4 % with inadequate scans of 17.6%. Results of study conducted at both hospitals of Lahore revealed 100% adequate imaging coverage and planes.

CONCLUSION: Shoulder coverage on MRI is excellent in all centers, needs improvement regarding imaging planes in FFH Rawalpindi in which maximum problem was in imaging planes more so in oblique sagittal. For this, there should be education to MR technologists and reaudit to assess improvement in technique after 1 month.

P-73**MRI findings of Maple syrup urine disease-a metabolic central nervous system disease**

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Maple syrup urine disease (MSUD) is a rare inherited autosomal recessive disease. It is characterized by impaired metabolism of branched-chain amino acids, which is caused by deficiency of branched chain α -ketoacid dehydrogenase enzymes complex. This leads to accumulation of branched chain amino acids includes leucine, isoleucine, and valine and their toxic by-products (ketoacids) in blood, urine and cerebrospinal fluid. The usual clinical presentation of patient is irritability, lethargy, poor feeding, vomiting, poor growth, and developmental symptoms. MSUD is characterized by radiological imaging features of cytotoxic brain edema affecting the white matter, and involving the corticospinal tracts, thalami, globus palladi, midbrain, dorsal brain stem and cerebellum. Here we present MRI features of classic MSUD in neonate which was later confirmed on biochemical investigations.

P-74**An audit to evaluate prompt imaging of acute pancreatitis**

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OBJECTIVE: To perform dynamic CT pancreas within 72-96 hours of initial symptoms for detection and staging of severity of acute pancreatitis.

METHODS: This descriptive prospective study was conducted over a span of 06 months from January till July 2022 in the Radiology Department of Rehman Medical Institute. Twenty two successive patients presenting to the ED (emergency department) with suspicion of acute pancreatitis based on clinical and lab findings were taken. Dynamic pancreatic CT were then suggested to them. We collected the data of these patients from HMIS (Health Management Information System) and noted down in a digital spread sheet. This data was then analyzed.

RESULTS: The target of this audit was to do Dynamic pancreatic CT in 95% of the patients with suspicion of pancreatitis within 72-96 hours of initial presentation. Out of 22 patients, 16 (72%) patients had Dynamic pancreatic CT within this range. Rest of the scans were conducted later due to various reasons.

CONCLUSION: The target of 95% for all standards was not achieved in the current study. Re audit should be done in 12 months along with collaboration from general surgeons.

P-75

POEMS syndrome - A case report

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Polyneuropathy, organomegaly, endocrinopathy, monoclonal gammopathy, and skin changes (POEMS) syndrome is a rare paraneoplastic syndrome, primarily affecting the elderly male population. It is a debilitating syndrome known to involve multiple organ systems. Given the rare occurrence of such cases, the likelihood of misdiagnosis is close to 85%. One such case of a 50-year female was reported at our setup. She was a known case of diabetes mellitus and hypertension, who presented to the emergency Department with complaints of lower back ache as well as bilateral lower limb pain and weakness, progressively worsening over the past ten days. On physical examination, patient was found to have bilateral pedal edema with venous Doppler negative for deep venous thrombosis. Patient's initial laboratory investigations showed raised infective markers for which she was started on broad spectrum antibiotics. However, blood culture performed prior to starting antibiotic therapy came back negative. Laboratory tests revealed haemoglobin of 14.6 g/dL with peripheral blood film showing microcytic and hypochromic red blood cells with erythrocytosis. Computed tomography (CT) chest, abdomen and pelvis and magnetic resonance imaging (MRI) of the spine done at an outside facility showed sclerotic bone lesions in lumbar vertebrae raising concern for metastasis to the spine. Considering these lesions, a repeat MRI of the whole spine was carried out. Histopathology of the biopsy from the right iliac bone showed few small foci of increased plasma cell proliferation suggestive of plasma cell neoplasm with positive CD138 and MUM-1 immunohistochemical stains. On further investigation, free Kappa and free Lambda levels were raised, measuring 39.60 mg/L and 38.0 mg/L respectively, with normal Kappa to Lambda ratio of 1.04. There was an M-spike of 0.4 grams on serum protein electrophoresis. Immunofixation showed IgG lambda monoclonal gammopathy. Patient then underwent bone trephine biopsy. Bone marrow aspirate showed 7% plasma cells while trephine showed interstitial plasma cells. It was difficult to exclude plasma cell dyscrasia on bone trephine biopsy. After detailed laboratory and radiological workup, the patient was diagnosed with POEMS syndrome, fulfilling Dispenzieri's criteria, and was managed accordingly.

P-76

Post laminectomy remote bilateral cerebellar hemorrhage with impending hydrocephalus: a rare occurrence

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Remote cerebellar hemorrhage is a rare but important complication due to dural opening following supratentorial craniotomy and less commonly spinal surgery. Mostly it is asymptomatic otherwise patient can present with delayed awakening from anesthesia, reduced consciousness, gait ataxia, motor deficit, nausea, vomiting and headache. We present a case of 32-year female who had sciatic pain for which she underwent re-do spinal surgery. She had laminectomy of right para-central disc herniation at L5/S1 level. It resulted in unintended durotomy which was stitched and drain was placed. On following day she

developed hypertension, severe headache and restlessness. CT brain suggested bilateral cerebellar hemorrhages with Zebra sign. She was having CSF discharge from the wound and drain site. Later she developed fits, acute bacterial meningitis and right sided paraparesis. She responded very well to treatment. This case report describes a rare condition of remote bilateral cerebellar hemorrhage post spinal surgery.

P-77

Surface diaphyseal aneurysmal bone cyst (ABC) in a young boy mimicking as osteosarcoma- a limb salvaging radiological initiative

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Interpretation of bone tumors have always posed a diagnostic dilemma especially in terms of distinction between benign and malignant lesions which subsequently determines treatment plan and management. Although histopathology remains the gold standard of diagnosis, however, imaging plays a pivotal role in augmenting histopathological findings in borderline cases. We present a rare case of surface diaphyseal aneurysmal bone cyst masquerading as telangiectatic osteosarcoma in a 16-year male patient presenting with pain around knee joint where radiological features paved way in discriminating benign from malignant differentials and eventually helped in salvaging the limb. It is important to highlight that ABC can both present as a primary bone lesion (in 80 % of the cases) where it is referred to as ABC per se and develop secondarily within previously benign lesions such as osteochondroma, osteoblastoma, chondroblastoma and fibrous dysplasia where the appearance is labeled as secondary ABC or aneurysmal bone cyst like changes. An import clue in distinction from sarcomatous lesions in addition to absence of malignant/aggressive periosteal reaction is percentage involvement of fluid - fluid level. A benign lesion with secondary ABC like changes shows cystic component occupying more than 2/3rd of lesion volume as was seen in our case where the fluid - fluid level involved the entire lesion volume.

P-78

All dural based glittering lesions are not meningioma! a rare intracranial presentation of primary CNS lymphoma

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Primary dural lymphoma (PDL) is an extranodal non-Hodgkin lymphoma that accounts for less than 1% of all central nervous system lymphomas. Primary dural lymphoma is epicentered in dura mater, and it is often diagnosed as meningioma or acute subdural hematoma due to its radiological characteristics. Surgery is the mainstay of treatment; PDL is relatively benign with good outcome. Neuroimaging findings are similar with meningiomas: both tumors present with extra-axial lesions that appear iso-hypointense on T1-weighted MR images and diffusely enhance with gadolinium. Moreover, dural tail sign, en plaque thickening of meninges, calvarial hyperostosis, and bone erosion have been common findings in both, but underlying vasogenic edema appears most common in PDL, depending on mass size and location. Cerebral convexities are the most common site of involvement, but other sites are falx, tentorium, sellar, and suprasellar regions. Other differential diagnoses include dural metastasis, fibrous tumors or neurosarcooidosis. PDL are biologically indolent, with survival rates at 5-year at around 70%, and positive response to surgery and adjuvant radiotherapy. We present a rare case of Primary Dural Lymphoma mimicking a meningioma. Our case illustrates that intracranial lymphoma may rarely present as a wide dural-based mass mimicking a meningioma radiologically So it must be considered in the differential diagnosis for all extra-axial enhancing lesions.

P-79**Procedural sedation and analgesia in radiology**

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This CIRSE Standards of Practice document provides best practices for the safe administration of procedural sedation and analgesia (PSA) for interventional radiology procedures in adults. It is aimed at health professionals involved in the provision of sedation and analgesia during interventional radiology procedures.

The choice of sedation technique performed depends on

1. Type and duration of the procedure
2. Anesthesiologists' availability
3. Patient's health status
4. Patients' preference

PSA can range from local or regional to general anesthesia. In addition, percutaneous image guided nerve blockade techniques can influence PSA.

P-80**Transarterial embolisation of cystic artery pseudo aneurysm: a rare complication of acute cholecystitis**

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Pseudo aneurysm of cystic artery is an extremely rare complication which may occur in association with cholecystitis, liver biopsy, biliary interventions, pancreatitis and laparoscopic cholecystectomy. We report the case of a 55-year male patient who presented with complaint of right upper quadrant pain, haematemesis and melena, he underwent CT scan abdomen that revealed perforated gall bladder with cystic artery pseudo aneurysm secondary to acute cholecystitis. An angiogram was performed that confirmed small cystic artery pseudo aneurysm. Selective embolisation of cystic artery was done, resulting in complete exclusion of pseudo aneurysm. The patient recovered completely.

P-81**Radiation protection in interventional radiology and fluoroscopy suite**

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The objectives of this posters are to:

1. Review the effectiveness of various accessory radiation shielding devices to provide protection to operators performing fluoroscopically guided interventional procedures.
2. Understand how to optimally place radiation shields to reduce occupational exposure.
3. Evaluate the accuracy of marketing claims made by manufacturers of radiation protection devices.
4. Determine how to best develop occupational exposure reduction methods for practical clinical implementation.

The most effective placement of a UBS is close to the operator and tight to the patient surface. Mobile and table-mounted LBSs are equally protective for the same height. Radioprotective drapes provide upper body protection from radiation but provide less protection than a properly placed UBS. Radiation dose to the brain of a fluoroscopy operator is expected to be relatively low

(8% of the left collar dose). Actual brain dose reduction provided by a radio-absorbent surgical cap is minimal. Lead glasses with large areal coverage provide the best lens protection.

P-82**Radiographic patterns on chest x-ray as a supporting imaging tool in triaging of suspected Corona virus disease (COVID) patients**

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OBJECTIVE: To evaluate the radiographic patterns on Chest X-Ray (CXR) in accordance with Modified Brixia Scoring as supporting imaging tool in triaging of COVID-19 pneumonia.

METHODS: In this cross-sectional study, chest radiographs of suspected COVID patients at emergency triage, LRH over a period of three months were evaluated for patterns of COVID pneumonia and scored in accordance with modified Brixia score. Each zone was categorized as score of one for interstitial pattern, two for mixed interstitial /alveolar pattern and three for alveolar pattern. Radiographic patterns consistent with COVID pneumonia or patients having strong clinical suspicion were advised Polymerase Chain Reaction (PCR) tests.

RESULTS: Total 2,225 individuals were screened for patterns of COVID-19 pneumonia on chest radiograph. Out of these 1465(65.8%) had normal chest radiograph and 760(34.2%) had abnormal findings. Out of the total, 648 suspected COVID patients were selected for PCR. The radiographic patterns ranged from mixed interstitial/alveolar pattern in 261(40.3%) patients, alveolar pattern in 231(35.6%), interstitial pattern in 87(13.4%), pleural effusion in 12(1.9%), other findings in 5(0.8%) while 52(8%) suspected COVID patients had normal radiographs. The PCR was positive in 326(50.3%), negative in 100(15.4%) and inconclusive in 60(9.3%) while 162(25%) were lost to follow up. Amongst the 52-suspected COVID patients having normal chest radiographs 10 were positive on PCR, 21 negative, 7 suspected and 2 inconclusive, while 12 were lost to follow up.

CONCLUSION: Chest radiograph is used for triaging of suspected COVID pneumonia patient in emergency settings. It assesses the severity of disease according to modified Brixia scoring for treatment plan.

P-83**Radiological imaging of abdominal trauma in children**

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Trauma is a leading cause of death in children aged greater than one year. Blunt trauma is the most common reason for injury. The abdomen is the third most common injured region after head and extremities. It has a high mortality rate of 8.5% and is the most unrecognized injury. Abdominal Imaging via CT scan is the most commonly employed technique for diagnosing intra abdominal injury (IAI). But radiation doses need to be minimized and MRI should always take precedence over CT while imaging the pediatric population. This age group is the most sensitive to radiation and subsequent cancer development. The initial evaluation of pediatric trauma, following the Advanced Trauma

Life Support/ Advanced Pediatric Life Support (ATLS/APLS), is similar to Adults. There is the primary survey followed by chest and pelvic X-rays. CT is the imaging modality of choice for further assessment of severity, especially in hemodynamically stable children. CT scanning is a quick and non-invasive technique, considered most accurate and it is widely available. Due to blunt trauma, the spleen is the most common solid organ injured, followed by the liver. Pancreas can be injured if pressed against the vertebral body. There have also been instances of devascularization of the bowels due to mesenteric injury, with subsequent bowel perforation. Gunshot wounds and stab wounds also make up a subset of pediatric injuries. The pattern of injury in pediatric population differs from adults due to a distinctively different anatomy hence imaging should be tailored accordingly. The purpose of this pictorial review was to educate junior radiologists and a revisit for seniors for a better understanding of abdominal trauma imaging in children.

P-84

Radiology work flow implementation and assessment in a high volume tertiary care public sector hospital

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OBJECTIVE: To emphasize the importance of implementation of an efficient Radiology work flow management system (WMS) in order to develop a time efficient, filmless radiology work flow.

METHODS: This Qualitative study was carried out in Radiology department of Lady Reading Hospital Peshawar from March 2015 to April 2018 to analyze the radiology work flow and its contributing factors, which play a pivotal role towards better patient service delivery with optimum quality, end user and patient satisfaction. Performa was designed comprising essential measurable tools of radiology work flow. The questionnaire once filled was compiled and statistically analyzed.

RESULTS: The results showed that radiology work flow efficiency has increased considerably with the introduction of various supporting factors with values < 0.001 .

CONCLUSION: The study revealed that a modern up to-date radiology workflow system is the requirement for a time efficient smooth patient service delivery with the challenge of best practice application keeping the patient, radiologist, radiographer and above all the referring physicians satisfaction as the aim. This involves an imaging cycle starting from patient data to conducting an imaging examination according to protocols and data processing and image viewing.

P-85

Rational use of computed tomography scan head in the emergency department of a high volume tertiary care public sector hospital

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OBJECTIVE: To emphasize the rational use of Computed Tomography (CT) head in emergency department (ED) of a high volume tertiary care hospital.

METHODS: This retrospective observational study was conducted in Radiology Department of Medical Teaching Institute Lady Reading Hospital (MTI-LRH), Peshawar, Pakistan from November 2017 to January 2018. Patients of all ages and both genders presenting to the emergency department with post traumatic

and non-traumatic indications for emergency CT head scan were included in the study. The imaging was performed on GE 16 multi slice Optima CT system. The imaging protocol included slice thickness of 3-5mm, non-contrast study for cases of head trauma or suspected stroke. Where needed intravenous contrast was administered e.g. to exclude meningitis in patients presenting with severe headache. Patients undergoing CT examination for regions of the body other than head and brain were excluded from the study as their number was insignificant. Reporting was done on PACS and results analyzed using latest SPSS version.

RESULTS: Out of 4284 CT scans performed in emergency department 90.8% were CT head (3893). Among 3893 CT scan head done in ED, 2581 cases were reported normal (66.29%), while 1312 cases had positive findings (33.7%), including post traumatic and non-traumatic.

CONCLUSION: Misuse of CT head is common especially in an emergency setting. Emergency physicians should be encouraged to obtain a detailed history and perform a thorough physical examination with reference to internationally standardized guidelines, while ordering CT scan.

P-86

The correct use of reporting workstation

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OBJECTIVE: To assess the correct use of reporting workstation by using simple guidelines.

METHODS: This audit is a cross sectional study conducted in the Radiology department of Rehman Medical institute, Peshawar in August 2022. A questionnaire was devised that included contents encountered by the working staff at different workstations, mainly radiology residents and consultant radiologists. It included eye tests, break-in between work hours, postural assessment, voice recognition dictation devices and adjustable seating arrangements. The target of our audit was to achieve maximum percentage in all these contents.

RESULTS: Only 32 % staff had eye tests in the last 5 years while 68% did not have any eye checkup. 63% staff had their postural assessment while 37% did not have it. Only 16% used voice recognition dictation devices while the remaining 84% did not use it. 100% staff took a break (2-3 times) for 10 minutes in between working hours, having adjustable seating and optimum lighting at their workstations.

CONCLUSION: The targets of our study were not met for departmental staff who engage in routine workstation reporting sessions.

P-87

An audit of magnetic resonance cholangio- pancreatography in the evaluation of pancreatco- biliary disease

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OBJECTIVE: To evaluate accuracy of magnetic resonance cholangio-pancreatography (MRCP) in evaluation of pancreaticobiliary disease.

METHODS: This is to assess the local practice of MRCP in Radiology department of Rehman Medical Institute, Peshawar. Cases presented to the

Gastroenterology department with complaint of jaundice and abdominal pain were included in the study (n=50), who were referred between August 2021 to August 2022 to Radiology Department. MRI was done on 1.5t GE MR. The total 50 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 was used for entering and analysis of data.

RESULTS: Patients presented to the radiology for MRCP having jaundice and epigastric pain. There findings were assessed in which 34 patients had biliary calculi and rest of 16 patients had biliary strictures in which 69% of the patients were above 40 years of age who presented with biliary colic. Rest of the 31% were below 40 years. Most of the patients had biliary colic due to biliary calculi were female constituting (71%) whereas strictures were seen predominantly in males.

CONCLUSION: Biliary calculi were more common cause for biliary colic and jaundice with more predominance in females. Strictures were seen mostly in males in age group above 40 years.

P-88

An Audit to assess diagnostic quality of chest radiographs

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OBJECTIVE: To assess the diagnostic quality of chest radiograph at RMI Peshawar.

METHODS: This was a prospective descriptive analysis done in Radiology Department of Rehman Medical Institute Peshawar over a period of 48 hours (2 days). Chest radiographs of 106 patients were randomly selected from PACS. From the total radiographs performed, groups were made into in-patient and outdoor patient and these were further subdivided into PA and AP chest x-rays. Paediatric and portable chest x-rays were excluded. The adequate chest radiograph should be in PA view, standing, acquired in end inspiration and coverage should include both hemidiaphragms as well as thoracic inlet.

RESULTS: The data collected showed that out of 106 patients, 72 (67%) were outpatients and 34(32%) were in patients. Among the in patients 33 (97%) were PA views and 1 (2.9%) was AP view. Outpatients 71 (98%) were PA views and 1 (1.3%) was AP view.

CONCLUSION: Target of audit was met in current study as 97% chest radiographs were adequately done in PA view.

P-89

An audit to evaluate the adequacy of the large joints magnetic resonance imaging

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OBJECTIVE: To evaluate the adequacy of MRI of the large joints by assessing optimize coverage and imaging planes under the recommendations of ACR.

METHODS: This was a clinical audit done at Department of Radiology, Rehman Medical Institute Peshawar, in August 2022. Scans of 60 patients who underwent MRI of large joints in August 2022 were studied retrospectively to assess the coverage and imaging planes of MRI of the large joints. Routine MRI examination image series for large joint is acquired in the axial, coronal and sagittal planes; some of which may be obliquely acquired. Our target was

to achieve 100% readable image series with no or mild movement's artefacts, 100% adequate coverage and 100% correct imaging planes as per ACR guidelines.

RESULTS: In total of 60 consecutive MRI of large joints, 99% of MRI scans performed had adequate coverage, imaging planes and readable image series with no or mild movement's artefacts. The remaining 1% MRI scan had inadequate imaging planes and coverage.

CONCLUSION: About 99% MRI of large joints were adequate. Rest of the MRI had inadequate coverage. MRI scan of large joints should fulfill the international set criteria i.e., with adequate coverage, adequate image planes and readable image series with no or mild movement artefacts.

P-90

An Audit of sedation and pain management in interventional radiology

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OBJECTIVES: To evaluate the efficacy and safety of different analgesics and sedative agents utilized in interventional radiological procedures based on patients' expectations pre-procedure and their experiences post procedure in the setting of a teaching hospital radiology department.

METHODS: This audit was conducted in interventional radiology department of Rehman Medical Institute Peshawar after approval from ethical and academic committees. All the patients had preprocedural counselling regarding the procedure and complication. All patients were asked preoperative about expectation and post operative about the amount of pain they perceived during the procedure and scaled according to pain chart. The pre-procedural assessment and sedation plan were documented in each patient's notes. The vitals during the procedures were monitored and documented. The standards for this audit were as follows, with target of 100%. Patients should be offered and given adequate and effective sedation/analgesia during an interventional radiological procedure if deemed appropriate. Patients who require the use of sedation should undergo pre-procedural assessment and have a sedation plan in place. Patients who are sedated should be monitored appropriately and regularly as set out by the RCR guidelines.

RESULTS: We collected the data of 50 patients who had procedures done from 1 to 25th August 2022. The age of patients varied from 18 to 87 years with a mean of 51 years. Female and male patients were 26 and 24 in number respectively. Only 30% patients had history of different procedures. All patients had discussion about the analgesia and sedation during procedure. Patients had expectation of pain score of 8, 9, 10 about 20%, 24% and 16% respectively. All patients got analgesics and 70% were given sedation. All the patients were monitored during the procedures and the vitals documented. In post procedure period, patient was questioned regarding experienced pain intensity as 4,6,7, 8 and 9 at log scale of 1-10 with a percentage of 8%, 4%, 2% and 2% respectively. No patient had experienced pain of 10. Only 16% patients wanted to have more analgesia as compared to what they got during procedure.

CONCLUSION: All the targets of audit we met, so it was a successful audit.

P-91**Are we missing the basics?? A retrospective conventional approach to diagnosis of phalangeal tuft epidermal inclusion cyst proving dilemmatic on the recommended gold standards**

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Epidermal inclusion cysts are common cutaneous lesions that represent proliferation of squamous epithelium within a confined space in the dermis or subdermis. These lesions are commonly encountered in peripheral body parts such as toes and fingers, usually following trauma and manifest clinically as slowly growing benign dermal nodules that may become painful. In routine clinical practice MRI examination is the recommended gold standard for lesion characterization. Conventional radiography is nowadays regarded as less specific yet remains highly sensitive in demonstrating soft tissue swelling, cortical scalloping and possible well-defined osseous or soft tissue nodular lesions that may guide in the eventual diagnosis. We report a case of 48-year female presenting with complaint of pain in the right hand little finger referred for a hand MR examination but lesion characterization proved difficult and henceforth the patient was recalled for additional more conventional radiography which ultimately helped in clarifying the diagnosis.

P-92**Acute appendicitis: An atypical presentation as left lower quadrant pain in setting of undiagnosed intestinal malrotation with associated vascular anomalies and left isomerism**

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Acute appendicitis is one of the most frequent causes of acute right lower quadrant abdominal pain requiring emergency surgical intervention. Clinical examination. Routine blood tests are sufficient for a provisional diagnosis, with CT scan as the most sensitive modality for diagnostic confirmation. Rare instances of appendicitis presenting as epigastric or left quadrant pain in cases of undiagnosed intestinal malrotation particularly in adults may present as a diagnostic dilemma and may at times even progress to catastrophic outcome. We report a case of 39-year male patient with undiagnosed intestinal malrotation presenting with a recent history of left lower quadrant pain where acute appendicitis with associated left isomerism and aberrant vascular anomalies were ultimately grasped on the abdominal CT examination.

P-93**Imaging follow up for tumefactive demyelinating lesions: Aide to effective management**

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Tumefactive demyelinating lesions are locally aggressive form of demyelination which usually manifest as solitary or couple of lesions, with a size criteria of greater than 2 cm. These Lesions are considered to be a separate entity, placed on a spectrum between multiple sclerosis and post infectious demyelination. Most patients with multiple sclerosis will go on to develop large tumefactive demyelinating plaques with the progression of their disease. Good response to corticosteroids or other immunosuppressive agents has been documented with either a substantial decrease in size or else complete disappearance of

the lesion on follow-up imaging. We present a known case of multiple sclerosis in a 14-year boy referred for a brain MR examination with a recent history of bilateral lower limb weakness. The examination confirmed a large tumefactive plaque in the left parietal lobe in addition to confluent white matter signal abnormalities. The findings were conferred on report with emphasis on the need for follow up imaging to assess the response to corticosteroid therapy as well as to guide future management. Detailed history along with followup examinations in such patients can thus provide valuable guideline for effective management.

P-94**Neurogenic tumor: An alternate consideration for a right paraduodenal nodal mass**

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Abdominal neurogenic tumors are most commonly located in the retroperitoneum and adrenal glands however, rarely can they be encountered in other locations such as the urinary bladder, bowel wall, abdominal wall and gallbladder. Whilst their intraabdominal location remains rare, they must be taken into consideration in the differential diagnosis of antra abdominal and retro-peritoneal masses. We report a case of 11-year male patient presenting with complaint of pain and gradually increasing lump in the right flank of the abdomen. The patient subsequently underwent abdominal ultrasound and CT examinations and was thus referred with a request to percutaneously biopsy the abnormality which had been labelled as paraduodenal paracaval lymphomatous nodal mass. A repeat ultrasound examination showed that the lesion is well encapsulated and predominantly cystic with central small relatively freely floating fibrillar component and a decision was made not to biopsy this lesion given the pretest probability of a yield from a biopsy was extremely low. So instead, the patient was subjected to an abdominal MR examination which confirmed its relatively benign nature, thus an alternate probability for neurogenic origin of the lesion, likely neurofibroma or ganglioneuroma was considered. After due consideration with the referring physician and family, it was decided to follow the patient on a 3 months interval ultrasound examination.

P-95**Clinical and CMR findings in patients of ARVC, a rare entity**

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OBJECTIVES: To describe the features of arrhythmogenic right ventricular cardiomyopathy (ARVC) on cardiac magnetic resonance imaging (CMR).

METHODS: It is a retrospective study. Patients with CMR and clinical findings of ARVC scanned at RIC in year 2021-2022. Their features were noted according to standard criteria.

RESULTS: All four patients were male with a mean age of 32.75 ± 15.65 years. On CMR, majority of patients fulfilled imaging criterion of revised Task Force Criteria of ARVC and half of them had biventricular involvement. Majority of these patients had clinical and ECG findings consistent with ARVC.

CONCLUSION: Cardiac Magnetic Resonance imaging (CMR) has surfaced as an unmatched non-invasive imaging tool for appropriate identification of ARVC as well for diagnosing left ventricular myocardial fibrosis which increases risk of sudden death.

P-96**Primary dysmenorrhea due to Mullerian duct anomaly: a diagnostic challenge in radiology**

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Mullerian duct dysgenesis results in various congenital anomalies including unicornuate uterus with a rudimentary functional horn. This is a rare congenital anomaly with a frequency of 1/100,000. However the true incidence and imaging findings are largely undiscussed as according to studies only symptomatic cases are reported. Unicornuate uterus has an impact on the fertility of young females most commonly presenting with dysmenorrhea, dyspareunia, endometriosis, hematometra, UTI and in severe cases with torsion of the rudimentary horn. Keeping in view the anatomical variations of unicornuate uterus, the various symptoms associated with it and sparse literature on this topic we present the imaging findings of a young female who presented to the emergency department with severe lower abdominal pain and a palpable mass. On imaging she had a unicornuate uterus with a non-communicating functional rudimentary horn.

P-97**Arteria lusoria and Kommerell aneurysm with esophageal fistulous communication: Report of a rare case**

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An aberrant right subclavian artery with a Kommerell aneurysm is seldom seen. Kommerell aneurysm has the proclivity and inclination to rupture, therefore, accurate diagnosis is critical. We report a case of 80-year old man who presented to the emergency department with a 2-month history of mild cough and 2 hematemesis. The patient was vitally stable and a chest radiograph was performed to evaluate the pulmonary findings. Marked superior mediastinal widening of about 15.7 cm in maximum transverse dimension was noted without any lobar collapse or pneumothorax. An urgent CT aortogram was done that showed a contained ruptured aneurysm at the origin of the aberrant right subclavian artery having retro esophageal course with a largely contained sac of what appears posterior mediastinal hematoma reaching up to carina measuring approximately 7.3 x 8.8 x 10.3 cm (AP X TR X CC). An imperceptible anterior wall of hematoma was noted with the esophagus and multiple internal air locules concerning communication with the esophagus. Irregular star-shaped fronds of active contrast extravasation are seen in this largely contained sac. The rest of the visualized arteries show no stenosis or pseudoaneurysm. Overall findings were suggestive of the variant anatomical origin of the right subclavian artery with Kommerell aneurysm and its esophageal fistulous communication. Precise diagnosis plays a crucial role in the successful management of this potentially fatal and lethal condition.

P-98**Popliteal artery entrapment syndrome**

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Popliteal artery entrapment syndrome is a rare but potentially limb threatening peripheral vascular disease occurring predominantly in young adults. We report a case of a 27-year man who presented with intermittent claudication on the left side. CT angiography revealed left focal narrowing of the popliteal artery due to compression of the artery by the medial head of the gastrocnemius muscle. The mechanism, presentation, imaging findings, and management of this rare disease are discussed.

P-99**Situs inversus totalis as incidental finding in a breast carcinoma patient**

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Situs inversus totalis is a rare term used for mirror imaging of the body organs as a result of transposition of the abdominal and thoracic viscera causing right-left asymmetry. Several associations are linked with situs inversus. 42-year female presented for investigation of her recently diagnosed invasive ductal carcinoma. On CT scan, incidental findings of total inversion of her body organs was noted. Patient was unaware of her medical condition.

Lack of knowledge may pose great danger to patient's life if not detected before surgical or radiological interventions. CT scan is a roadmap for establishing the diagnosis. Breast carcinoma is rarely seen/ reported with situs inversus totalis.

P-100**Atypical differential of recurrent abdominal pain with obstructive symptoms in adults: SMA syndrome**

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Abdominal pain account for 5 to 10 percent of all Emergency visits and demands an extensive workup for a rapid and complete diagnosis.

Ultrasonography and Computed Tomography remain a forefront of imaging modalities in leading to the cause of the symptoms. Assistance of cross sectional imaging also helps in discovering rare cases more frequently. During the period of six months between 1st January 2022 and 30th June 2022, our Emergency department took care of two cases of relatively infrequent superior mesenteric artery syndrome.

SMA syndrome or arterio-mesenteric duodenal compression syndrome or cast syndrome is an atypical cause of duodenal compression between the superior mesenteric artery and aorta resulting in hindrance of gastric emptying. Two adult males presented with episodes of worsening abdominal pain, nausea and vomiting. Computed tomography of abdomen and pelvis revealed a distinct air fluid level in stomach and proximal duodenum. There were obvious decrease in aortomesenteric distance and reduction in its angle with the aorta, with subsequent compression of third part of duodenum. Conservative management were unsuccessful and the cases were surgically managed with exploratory laparotomy.

SMA syndrome, while may not be considered the common cause of intestinal obstruction, should scrutinized for in relevant cases with history of rapid loss of body fat.

P-101**Testicular implants (multi sequential MRI) – a rare procedure for cosmetic purposes**

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An artificial implant inserted into the scrotum is called a testicular prosthesis. Boys who are born without testicles or who have lost one due to an illness or injury can use an implant for cosmetic satisfaction. The implant does not work

like a natural testicle; instead, it just serves to enhance the appearance and alleviate psychological concerns. The testicular prosthesis can be done in patients with cancer, undescended testis, or trauma. For more than 50 years, testicular implants have been in use. Dr. Ralph Bowers of New York City implanted the first artificial testicles in 1939 using Vitallium, a nonferrous alloy of Chromium, Cobalt, and Molybdenum. All the implants available today are filled with saline, gel, or an elastomer. Testicular implants are not standard in our country. But one can come across them in their radiological practice, such as in our case.

We present a case of 30-year male that came to us with a history of mild scrotal pain for two weeks, predominantly on the right side. There was no history of trauma. He gave no history related to any type of surgery. He mentioned a scrotal USG from a private clinic which was unremarkable and was suggested an MRI pelvis with contrast. The patient didn't reveal he had a testicular implant from abroad because the undescended testis later atrophied and had to be removed. The MRI showed a hyperintense outer rim and fluid-filled center in bilateral scrotal sacs. This was probably a saline-filled prosthesis; later, the patient was retrospectively asked about the implant procedure and then he gave the history of bilateral undescended testes which were removed almost 20 years back. This is a unique case in our clinical settings so the radiologists should be aware of the radiological aspects of a testicular implant in countries such as ours, where there are few to no testicular implant facilities.

P-102

An intraabdominal organized gossipiboma

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Despite the advances in the medical sciences and increased safety measures, there are a few unfortunate times when post-procedure complications can occur due to human errors presenting with intraoperative or post operative symptoms. Gossipiboma is also a rare complication that can occur due to human negligence. The term Gossipiboma forms as a complication of inflammatory reaction to a surgical sponge or a laparotomy pad left mistakenly in the body of the patient after a surgical procedure. The term Gossipiboma is a combination of two words from two different languages; Gossypium a Latin word which mean cotton and boma a Kiswahili word which means plan of concealment. Their incidence is reported to be 1 in 1000 to 1500 surgery. We also present here a case of a 67 year old male who had a previous history of right sided PCNL five years back. No immediate post procedure complications occurred however the patient recently presented to us with left flank pain for 3 months. His CT scan was done which incidentally showed an organized gossipiboma in the retroperitoneum on the right side.

P-103

Uncovering the sellar lesions – breaching the traditional features of neuroradiology

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Neuroimaging analyses detect a lesion through its epicenter, where radiologist place it into a particular lesion given its typical features. Certain tumors do not follow the tradition. Here we are presenting two cases of sellar and suprasellar origin with uncommon tissue diagnosis.

Case 1: A 37-year patient developed progressive dementia. MRI was performed which revealed a bi-lobed butterfly lesion in the region of centrum semiovale bilaterally, extending and crossing the midline with involvement of body of corpus callosum and hypothalamus extending into the third ventricle. Differential given for these findings was glioblastoma multiforme and lymphoma.

Case 2: A 20-year girl had chronic headache and decreased visual acuity associated with, nausea for the last 3 months. She went through a non-enhanced CT brain as an initial evaluation of the complaint, where a hypodense fluid attenuation sellar mass with suprasellar extension compressing optic chiasma was seen. Further MRI was performed which revealed a cystic sellar and suprasellar mass heterogenous intense post contrast enhancement with internal serpiginous non enhancing areas. There was mild right parasellar extension closely abutting the right cavernous ICA which remained patent. Superiorly, it was severely compressing and elevating optic chiasm more towards the right side, favouring craniopharyngioma.

Both patients went through biopsy. Histopathology report of former case revealed to be germinoma whereas in the later it was chondrosarcoma. Our cases reports common tumors with their rare presentation and site. This will help improving our understanding of brain lesions, leading to better clinical care for patients and clinician in better management.

P-104

Pulsus parvus et tardus in bilateral renal arteries on flow doppler leading to the diagnosis of coarctation of the aorta

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Coarctation of the aorta is a congenital malformation, which is sometimes hard to diagnose in early stages, which can lead to secondary hypertension which is refractory to medications. Therefore early detection and correction of coarctation of the aorta is important. A 14-year female presented with the complaints of nausea, vomiting and occasional epigastric discomfort. On examination patient was well oriented to time and space, during physical examination the patient's blood pressure measured to be 200/110 mmHg on the right arm and 195/105 mmHg on the left arm. Patient was admitted for the workup of secondary hypertension and underwent several investigations including bilateral renal flow doppler, pulsus parvus et tardus was observed during renal doppler flow and subsequent CT aortogram and full body CT angiogram was requested and diagnosis of coarctation of aorta was made. Diagnosis of coarctation of aorta is made by physical examination and clinical suspicion, hence it's mostly missed in early stages. Patients presenting with secondary hypertension should undergo aortic and renal arteries flow dopple. *Pulsus parvus et tardus* in renal arteries and abdominal aorta should raise the suspicion of any proximal aortic stenosis or obstruction.

P-105

Hemiuterus with non-communicating rudimentary functional horn (class U4-hemiuterus Mullerian duct anomaly): Report of rare case

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Hemiuterus with non communicating rudimentary horn is rarely seen with incidence of 0.1-3.8%. Its early detection and surgical intervention is crucial to prevent gynaecological and obstetrical complications including hematometra, endometriosis and ectopic pregnancy. We report a case of 13-year girl who presented to our out patient department with a 2-month history of left flank pain, dysmenorrhea and menorrhagia. The patient was vitally stable and an ultrasound abdomen and pelvis was performed to evaluate the cause. Left kidney was noted in left hemipelvis i.e ectopic location, with fluid distended left fallopian tube, small atrophied uterus and adjacent suspicious looking fluid filled rounded structure. Later on, MRI pelvis was done which confirmed that suspicious rounded structure to be a non communicating rudimentary horn of 5.3x4.5x5.8 cm with internal hematometra, small sized unicornuate

uterus measuring 2.7x1.7x7.5 cm and left hematosalpinx. CT scan correlation showed additional finding of scoliotic spine deformity. Overall findings were suggestive of the class U4-hemi-uterus Mullerian duct anomalies with associated renal anomaly of left ectopic kidney.

P-106

Where would you least expect hydatid cyst? isolated on spleen!

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Hydatid disease is parasitic disease caused by infestation of echinococcus. This parasite is endemic in cattle in Pakistan and where meat is staple, burden of infestation cannot be disregarded. The disease is a globally endemic and WHO estimates that at any moment, about a million people are infected by the disease; mostly in low income countries. Hydatid disease commonly affects the liver followed by lungs, kidney, bones and brain. Spleen, pancreas and heart are rarely affected and isolated splenic infection are rarely reported. The rarity of splenic hydatid disease even in endemic region makes it a challenging diagnosis to clinicians and radiologists alike and hence the treatment approach may increase the disease burden to the patient. We present a case of a young male with recurrence of isolated splenic hydatid cyst. Conservative and surgical approach to treatment of the disease was inadequate at first intervention to contain the disease. In subsequent presentation, Ultrasound followed by Computed Tomography was deployed which provided necessary imaging assistance to the surgical team to adequately treat the disease. The first imaging for any cysts would be an USG and characterization of the cysts provides insightful details of the undergoing disease process.

P-107

Tuberculosis- the master of many faces

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OBJECTIVE: To evaluate the radiological patterns of extra-pulmonary tuberculosis.

METHODS: It was a retrospective cross-sectional study. All patients who were diagnosed to have extra-pulmonary tuberculosis on any radiological modality in from August 2019 to August 2022 were included in the study. Patients with all ages were included in the study. Radiological findings including organ/area involved, pattern of distribution, extent of disease, single / multifocal disease and presence of concomitant pulmonary tuberculosis were included in data.

RESULT: A total of 26 patients met the inclusion criteria. The most common radiological findings were dystrophic calcifications and necrotic lymphadenopathy. Other findings include cystic areas, micro-nodules, tuberculoma and abscess formation in brain, multiple/ single splenic granulomas, greater trochanteric tuberculosis, atlanto axial and spinal tuberculosis with paraspinous abscesses.

CONCLUSION: It is very important for a radiologist to know and identify the different patterns tuberculosis can present and its typical manifestations in different organs on several imaging modalities which can increase the detection rate in high-risk populations, and help in further management.

P-108

Boerhaave syndrome: A rare complication of drinking excessive carbonated drinks

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Boerhaave syndrome is a rare and life-threatening emergency and is defined as spontaneous esophageal rupture caused by elevated intra-esophageal pressure. Although the most common cause of spontaneous esophageal rupture is forceful vomiting and retching, other causes include weight lifting, abdominal trauma, defecation and childbirth. We present to you a unique case of Boerhaave syndrome secondary to a carbonated beverage ingestion. A 22-year male patient presented to the emergency department of Aga Khan University Hospital with complaints of abdominal pain, chest pain and fever. According to the patient, he was alright ten days back however after ingestion of multiple carbonated beverages during an event, he suddenly developed chest pain along with epigastric discomfort which worsened with time. Baseline x-ray demonstrated a left sided hydropneumothorax. For further evaluation CT scan was performed which showed a large loculated left sided hydropneumothorax and collapsed underlying lung. A rent was also noted along the left lateral esophageal wall just above the gastroesophageal junction with peri-esophageal collection which appeared to have communication with the left-sided pleural cavity and the hydropneumothorax. Based on the cumulative findings, diagnosis of Boerhaave syndrome with pleuro-esophageal fistula was made.

P-109

Post-COVID myocarditis on cardiac MRI - first case series at Rawalpindi Institute of Cardiology

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OBJECTIVE: To determine cause of symptoms of acute cardiac dysfunction with normal coronary arteries in post-COVID-19 patients refractory to routine treatment, using CMRI and to modify treatment accordingly.

METHODS: It was retrospective case-series. Clinical and radiological data of patients was analyzed.

RESULTS: Cardiac MRI with contrast was performed on 07 patients on 3 Tesla MRI. Imaging findings showed decreased left ventricular ejection fraction with hypokinetic myocardial walls, edema and late myocardial enhancement. Based on the CMR findings, the patients were diagnosed as acute myocarditis using the modified Lake Louise Criteria.

CONCLUSION: CMR is recommended as a promising tool to solve various problems in the diagnosis of myocarditis as well as in acute myocarditis associated with the disease of COVID-19. In such cases intravenous immunoglobulin and corticosteroids in combination have been widely used to date with effective results. Our patients received similar treatment along with antiarrhythmics and beta-blockers with uneventful hospital stay.

P-110**Awareness about the role of a clinical application specialist (CAS) in the Radiology community**

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OBJECTIVE: To determine the level of awareness among the radiology community regarding the role of clinical application specialist.

METHODS: An online survey form was prepared and circulated among the Radiology community all over Pakistan. A total of 76 responses were collected through survey forms. The survey has 39.47% participation of qualified radiologists and the remaining were trainees at different hospitals in Pakistan.

RESULTS: A total percentage of 47.36% reported that medical imaging clinical Application Specialist (CAS) never visited their hospital or respective imaging modality. Around 42.1% answered that CAS wasn't able to understand or answer their queries. Considering the services provided by CAS, 55.26% were moderately satisfied. However, 64.4% of surveyed individuals think that interaction with CAS can help improve quality in their department. Only 32.8% of persons have their queries answered by CAS on the same visit/same day. CAS for MRI was consulted around 32.8% of the times while application visit for other modalities including CT, Ultrasound, X-ray, and Radiotherapy were also been observed.

CONCLUSION: In this era where diagnostic imaging is an essential part of the management of any disease hospitals should seek the services of clinical application specialist for quality assurance of Radiology department.

P-111**Assessment of the image quality of abdominal radiograph**

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OBJECTIVE: To assess the diagnostic image quality of plain abdominal Radiographs in adult patients.

METHODS: A random sample of plain abdominal radiographs of 60 patients was taken over a period of one month from 22, July till 23, August 2022 at the department of Radiology, Rehman Medical Institute, Peshawar. The plain abdominal radiographs were selected from PACS. The images were viewed through PACS workstation using Synapse®. For each abdominal radiograph performed, the image quality and adequacy were assessed. A standard abdominal radiograph performed should include the symphysis pubis and both hemi-diaphragms and extend laterally to cover abdominal wall and ensure that all bowel is included. Microsoft excel 2016 was used in entering and analysis of data.

RESULTS: Patients included in our study had been referred to the radiology department RMI, Peshawar with different abdominal symptoms i.e. acute abdomen, vague epigastric discomfort and flank pain. Plain abdominal radiograph was performed for each patient and assessed accordingly. Out of 60 adult patients, 38 were male patients and 22 were female patients. 51.7% abdominal radiograph were adequate and according to the standard given by international guidelines, 48.3% were inadequate and did not cover the appropriate anatomical landmarks of the patients as per standards. The overall quality of the films was good in 93.3% radiographs and only 6.6% films were of poor quality.

CONCLUSION: Out of the 60 patients, only 51.7% abdominal radiograph were adequate. The abdominal radiographs quality could be improved with good technique and patient communication about the procedure. Proper positioning of the patient can also improve the quality of abdominal radiograph. The quality of abdominal radiograph is very important as it has clear effects on the clinical usefulness of the investigation. Exposure adjustment should be done for each patient differently according to patient size and body habitus. Appropriate coverage of the anatomical landmarks should be done.

P-112**Incidence of fabella on X-ray**

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OBJECTIVE: To determine the incidence of fabella on x-ray knee.

METHODS: This is a cross-sectional retrospective study done at x-ray suite Radiology department, Liaquat National Hospital, Karachi. This study included 162 patients. The lateral knee radiographs taken using standard exposure factors and a 30 to 40 degrees flexion were reviewed. Patients were grouped according to age and gender and presence or absence of fabella was documented in each group. Statistical analysis was performed to determine the incidence of fabella in various age groups and genders.

RESULTS: Out of 162 subjects, 97 (59.9%) were females and 65 (40.1%) were males. Fabella was present in 68 (42%) subjects out of which 42 (61.8%) were females and 26 (38.2%) were males. Subjects were also stratified into various age groups. The mean age of subjects was 54.3 years (range 10-95 years). Out of 162 subjects, 23 (14.2%) were <30 years of age, 50 (30.9%) were 31-50 years of age and 89 (54.9%) were >50 years of age. Fabella was present in 8 (11.8%) subjects of <30 years age, 24 (35.3%) subjects of 31-50 years age and 36 (52.9%) subjects of >50 years age. The incidence of fabella was slightly higher among females. Overall age group between 31-50 years had higher incidence of fabella.

CONCLUSION: Having known incidence of anatomical variants could be useful to radiologists, surgeons and other health care practitioners to manage the patients with knee joint pathologies. Such high incidence of fabella among our population necessitates the need to look for its association with relevant clinical symptoms of pathologies related to knee joint. It will further help us to establish the frequency of its association to various knee pathologies. This study would also provide fundamental data for further studies related to anatomical variants that may help us to improve our clinical and radiological knowledge related to various pathologies of knee joint.

P-113**An audit to evaluate the success rate of CT guided biopsies**

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OBJECTIVE: To evaluate the success rate of CT guided biopsies.

METHODS: This audit was performed in Radiology department of Rehman Medical Institute Peshawar over a period of three years. We collected the record of type of needle used, no of cores acquired and biopsy report. As per international guidelines, standard is that the diagnostic yield varies with technique, tissue, and type of lesion with a range from 70-92% for FNA cytology and 93-100% for histological core biopsy specimens. The audit target was set variable depending upon site/technique of biopsy.

RESULTS: Total of 60 biopsy procedures were selected, which were performed CT guided. 32 patients were male. The age varied from 2 to 84 years with a mean of 44.8 years. Only 2 biopsies performed under general anesthesia. In most of patients cutting needle/biopsy gun was used. The gauge and type of biopsy gun varied case by case. In most of cases semiautomatic biopsy gun used with Gauge varying from 16-20. The reports showed that only two biopsies did not achieve any sample representative and were requested re biopsy. In another two biopsy results provisional diagnosis was given and requested either for complete excision or more sample for establishing final diagnosis. The overall success rate was 93.4%.

CONCLUSION: Our audit results meet the target i.e. 93-100% success rate for cutting needle biopsy. We will do reaudit after 6 months to maintain this success rates. To maintain this success rate, we suggest discussing the results of the audit with the radiologists and pathologists involved, introduce a biopsy logbook to encourage follow-up of cases, Ensure feedback to radiologists from pathologists and clinical colleagues.

P-114

Predicting axillary nodal metastases in breast cancer patients based on imaging features of primary breast malignancy and clinicopathological characteristics

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OBJECTIVES: To determine the predictive factors of axillary lymph node metastasis in breast cancer patients using the imaging features of primary breast malignancy and to determine impact of clinico-pathological characteristics of primary breast malignancy on axillary lymph nodes metastasis.

METHODS: This descriptive retrospective study was an institutional review board-approved study. In this study, 354 patients with breast cancer were recruited, and their preliminary pre-operative ultrasound and digital mammogram findings and post-operative histopathology results were collected. The interrelation of imaging findings and pathological features of breast cancer with axillary lymph node metastases was ascertained by univariate analysis. Valid predictors were taken into account in multivariate analysis.

RESULTS: Among the 354 patients, 220 (62.1%) had axillary nodal metastases and 134 (37.9%) did not. The parameters of breast mass size, posterior features on ultrasound, mammographic breast density and BIRADS are important independent predictors of axillary nodal metastases. Skin involvement by breast cancer is also independently associated with metastases in axillary lymph nodes. Grade of tumor and lymphovascular invasion can also provide vital information regarding prediction of axillary nodal metastases. We did not find significant association of breast cancer types and immunohistochemical markers.

CONCLUSIONS: There are some imaging characteristics, which can provide insight in prediction of axillary nodal metastases in patients with breast cancer. Ultrasound imaging and mammographic features of primary breast mass, along with some clinico-pathological features can act as valuable prognostication factors to detect axillary nodal metastases.

P-115

An audit of radiology communication systems for critical findings

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OBJECTIVE: To figure out the adherence of department of radiology, to the standards laid down for reporting critical and urgent radiological findings.

METHODOLOGY: This was a cross-sectional analytical study carried out in the Radiology department of Rehman Medical Institute Peshawar from 1st August 2021 to 31st August 2022. The sample size was 83 and it was a non-probability consecutive. All patients with significant, actionable or unexpected findings where the radiologists thinks that the findings are important and timely intervention may be necessary were included. Data was analyzed using Microsoft Excel and SPSS version 22 (Armonk, NY: IBM Corp.).

RESULTS: A total of 83 imaging reports with critical conditions were found in departmental record of critical findings reports including 58 CT scans, 10 MR scans, 7 Ultrasounds and 7 X-rays. Out of 83, 71 cases (86%) were reported and communicated on time with the referring clinician while the remaining 12 (14%) were either misreported or not timely communicated by the on-duty resident with the clinician. 19% of the CT scans and 14% of the ultrasound scans were not reported in a timely manner. All the MR scans and X-rays containing critical findings were reported on time.

CONCLUSION: A major portion of the data record of the delivery of all critical findings reports is not properly maintained. Moreover, there is no electronic system available for communication with the referring clinician through PACS. The reports with critical findings are conveyed manually through phone call by residents on duty.

P-116

Comparison of two processing softwares for evaluation of quantitative parameters in TC99m MAG-3 renography

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OBJECTIVE: To correlate the differential renal functioning of dynamic renal scintigraphy calculated by two different gamma cameras softwares.

METHODS: 40 patients (20 males and 20 females with mean age of 14.2 ± 15.4 years) were enrolled in the study. MAG-3 scans were processed on XELERIS and SYNGO-P softwares separately to compare differential renal functioning as percentage uptake, peak uptake, peak to ½ peak uptake and diuretic T½. The paired sample t-test was applied to compare the parameters of both softwares.

RESULTS: There was no significant difference in the results of MAG-3 scan on both softwares as statistical analysis shows >0.05 p-value of renal percentage uptake, peak uptake, peak to ½ peak uptake and diuretic T½.

CONCLUSION: There was no significant difference in Differential Renal Functioning (DRF) on both XELERIS and SYNGO-P softwares. The processing on different softwares with the respective attributes by using same methods, size of ROI's and background does not change the quantitative DRF parameters and thus will not affect the diagnosis and choices of treatment for the patient. So, the scan can be performed and processed on any software (XELERIS and SYNGO-P) will give the same results.

P-117**Incidence of nodal and distant metastasis and their correlation with primary breast tumor size on pre-therapy FDG PET-CT imaging**

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OBJECTIVE: To evaluate relation between primary tumor size and metastases (nodal and non-nodal) using baseline FDG PET-CT.

METHODS: We recruited 214 consecutive breast cancer patients who were referred for FDG PET-CT imaging for initial staging. Patients were categorized in to four groups based on primary tumor size (T1:

= 2 cm; T2: >2 cm and = 5 cm; T3: > 5 cm; T4: any size involving chest wall or skin). For each group we determined ipsilateral axillary nodal, extra-axillary (including contralateral axillary) nodal, visceral and skeletal metastases seen on FDG PET-CT imaging.

RESULTS: 47/214 patients had T1 tumor and found to have 15% axillary, 47% extra-axillary, 68% visceral and 38% skeletal metastases. 104/214 patients had T2 tumor and found to have 21% axillary, 45% extra-axillary, 61% visceral and 37% skeletal metastases. 34/214 patients had T3 tumor and found to have 26% axillary, 47% extra-axillary, 76% visceral and 35% skeletal metastases. 29/214 patients had T4 tumor and found to have 45% axillary, 69% extra-axillary, 79% visceral and 41% skeletal metastases. On regression analysis, highest positive linear correlation was found for ipsilateral nodal metastasis ($r = 0.945$) followed by extra-axillary nodal ($r = 0.772$), visceral ($r = 0.763$) metastases. No significant correlation was found between primary tumor size and skeletal metastasis ($r = 0.362$).

CONCLUSIONS: We found a linear correlation between primary tumor size and presence of metastases to nodes (highest for ipsilateral nodes) and viscera and favoring the conventional linear model. However, no linear correlation was found between presence of skeletal metastases and primary breast tumor size.

P-118**Radial scar: A diagnostic and management dilemma**

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The radial scar is not true scar; they are usually idiopathic. The definitive diagnosis requires core needle biopsy, fine needle aspiration and frozen section because the accurate pathologic diagnosis of these types of lesion is difficult. A 50-year lady presented to AKUH with the complaint of left breast suspicious lesion on imaging. She subsequently underwent ultrasound guided core biopsy, which revealed ductal hyperplasia. After considerable deliberation, the patient was electively admitted for wide local excision of left breast lesion. The pathology finally revealed radial scar, sclerosing adenosis and usual ductal hyperplasia. The radial scar is included in high risk breast lesions category because of the risk of under sampling or associated underlying malignancy so they are usually biopsied and removed.

P-119**Optimization of CT KUB in investigation of renal colic – A multicentre quality improvement project**

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OBJECTIVE: The aim of this multicenter audit was to assess the percentage of excess supra-renal CT images while imaging KUB.

MATERIAL AND METHODS: Data of CT KUB from nine Radiology departments was collected from different cities of Pakistan in the first audit round. These include Fauji Foundation Hospital (Rawalpindi), The Diagnostic Centre (Lahore), KRL General Hospital (Islamabad), NESCOM Hospital (Islamabad), Combined Military Hospital (Abbottabad), Balochistan Institute of nephro-urology (Quetta), Jinnah Postgraduate Medical Centre (Karachi), University of Child Health Sciences and Children Hospital (Lahore) and Khyber Teaching Hospital (Peshawar). Percentage of unnecessary axial images above the level of highest kidney was calculated in light of RCR guidelines. Second round of audit will be performed after arranging mid-term educational sessions for the CT technologists. This re-audit will assess the improvement in current practice.

RESULTS: Percentage of excess scan length above kidneys ranged from 0-64%.

CONCLUSION: RCR guidelines are not being followed by any of the participating radiology departments in first round of audit.

P-120**Incidental gallstones in patients undergoing unenhanced CT KUB (computed tomography of kidney, ureter and urinary bladder)**

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OBJECTIVE: The objective of study is to determine the frequency of gall stones in patients undergoing CT KUB.

METHODS: Retrospective analysis of CT KUB scans of 345 patients from January to June 2021 will be done. Data regarding age, gender, CT KUB finding related to KUB stones and gall stones were recorded.

RESULTS: A total of 345 patients, with male to female ratio of 1:3.8 were included in study. Majority (76.5%) of patients were in their 4th to 7th decade of life. Out of 345, 243(70.4%) scans were positive for KUB stones. Among these 243 subjects, 22(9.1%) showed hyperdense gall stones. Out of 102(29.6%) patients with no KUB calculi, 11(10.8%) showed gall stone. Over all a total of 33 out of 345 (9.6%) belonging to both groups showed incidental gall stone pathology. Among these 87.9% were females and 12.1% were males; majority were in their 6th decade of life (33.3%).

CONCLUSION: Gall stones can mimic right renal symptoms or co-exist. It is important to report them so that patient can be managed accordingly.

P-121**Pseudo-aneurysm of lingual artery: a rare complication of squamous cell carcinoma of tongue and a cause of oral bleeding**

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Pseudo-aneurysm of lingual artery a branch of external carotid artery is rarely seen. Most of cases of pseudo-aneurysm occur after trauma, surgery, inflammation, post chemotherapy, radiotherapy and infection. Pseudo-aneurysm of lingual artery secondary to lingual carcinoma with oral bleeding is a rare presentation, hence we discuss the CT imaging findings of lingual artery pseudo-aneurysm in a patient with known case of carcinoma of tongue on chemotherapy and radiotherapy presented with oral bleeding.

P-122**An audit to assess the technical quality of hysterosalpingography service in radiology department**

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OBJECTIVE: To assess the quality of hysterosalpingography (HSG) service when compared to National Standards for radiation dose and locally devised standards for procedure success.

METHODS: This was an audit study carried out in the Radiology department of Rehman Medical Institute Peshawar from 1st to 31st August 2022. Our sample size was 20 and it was a non-probability consecutive sampling (all patients coming for HSG in the duration were included). The age range was 25 to 40 years, and patients presented with infertility. The following criteria were assessed for technical quality of HSG: Radiation Dose (National DRL not more than 200 cGycm, 100% compliance required), Screening Time: (0.7 minutes, National Dose limit, 100% compliance required), Cervical cannulation local standard set at > 95% (100% compliance required), four key images (early uterine filling, late uterine / early tubal filling, late tubal filling and free spill of contrast, 100% compliance required) and report (95% concordance required of resident report as compared to final report from consultant). The key images should be of good diagnostic quality and the report should be accurate. Data was analyzed using Microsoft Excel and SPSS version 22 (Armonk, NY: IBM Corp.).

RESULTS: Our results are totally based on parameters mentioned as standard which are dose, screening time, quality of study, report accuracy, cervical cannulation and four key images. We concluded from our results that out of 20 patients 5 patients (25%) had an average dose above 200, while the rest of 75% had standard average dose within required limits. Among 20 patients, 5 patients (25%) had screening time above 0.8 keeping 0.7 as standard, whereas rest of 75% had standard screening time. Three patients (15%) had unsuccessful cannulation. Four key images were 100% adequate in all patients. Among 20 patients 9 (45%) patients had good quality study, 7 patients (35%) had average study and 4 patients (20%) had poor quality study. Report accuracy of our study was 100%.

CONCLUSION: We concluded from our results that HSG service was technically inadequate in 25% cases having increased radiation dose, 25% cases with increased radiation time and 20% cases with poor quality study. The audit target of 100% was not achieved. Re-audit after 6 months is planned. There is variation in the performance of this procedure in every hospital setup (both in technique and personnel). HSGs may be performed by trained radiographers, radiologists, nurses, or some gynecologists.

P-123**Detection of renal parenchymal disease on B-mode ultrasound**

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OBJECTIVE: To determine the accuracy of the ultrasound examinations performed in detecting renal parenchymal disease (RPD).

METHODS: This study was a retrospective review of 52 US examinations of the kidneys performed at AKUH, Karachi. The images of each examination were reviewed by independent radiologists who were blinded to the original reports. Results were segregated according to the grades of RPD (I-IV) and compared to the interpretations that were originally reported. Images in which the liver was not adequately covered were excluded. Similarly, patients younger than 18 years of age, those with end stage renal disease, and examinations that were performed on machines other than Aplio and Xario were excluded. US examinations were performed by radiologists or sonographers with at least 3 years of sonographic experience.

RESULTS: Patients' age ranged from 18 to 78 years (mean = 51.63 years). Out of the 52 examinations reviewed, 28 had no RPD, 18 had grade I RPD bilaterally, 2 had grade II RPD bilaterally, one had grade IV right-sided RPD and grade III left-sided RPD, 2 had grade III RPD bilaterally, while one patient with right-sided nephrectomy had grade II left-sided RPD. In comparison, 10 out of the 52 examinations were reported as RPD in the original reports, and only one examination was assigned a grade.

4% develop vulvar varicose while the incidence of vaginal varicose is rarer. These varices develop mostly during the second and third trimesters and may show spontaneous resolution after pregnancy, however present a threat to the patient in case of bleeding. It is therefore crucial for the radiologists to be aware of such findings while evaluating patients with symptoms of pelvic venous congestion syndrome. Here we present a case of a pregnant female with imaging findings consistent with pelvic venous congestion with parametrial and perivaginal varicosities.

CONCLUSION: Although ultrasound has shown high sensitivity in detecting renal changes related to RPD, our study showed that early and mild renal parenchymal changes are missed very frequently by most operators.

P-124**Impact of COVID-19 on workflow pattern and Radiology Residency program at a tertiary care teaching hospital**

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OBJECTIVE: To assess and analyze the impact of the Coronavirus disease (COVID-19) pandemic on Radiology residency program and workflow pattern from Radiology trainees and consultants perspective.

METHODS: Questionnaire survey was distributed to trainees and consultants to assess the impact of COVID-19 on the Radiology work pattern and residency program over the period of one year in comparison with the pre-COVID era. Forty Radiology trainees and eight consultants submitted completed performance and the results were analyzed using SPSS version 20.

RESULTS: Workload in response to the COVID-19 pandemic decreased according to 75% of trainees and a significant decrease was observed by 17.5%. All the consultants agreed that workload had decreased during pandemic. A majority of the trainees (77.5%) report it was easy to attend teaching sessions and 37.5% of consultants also agreed. Trainees were deployed for bedside ultrasound of COVID-19 patients, and 52% of trainees were apprehensive and weren't keen for the deployment. Radiographs of COVID-19 patients were reported with confidence by 55% of trainees, 45% of trainees

applied COVID-19 severity scoring methods. 50% trainees expressed satisfactory reporting expertise with indirect supervision by consultant; however, the rest of the trainees did not feel confident, and some indicated that direct consultant supervision would improve their reporting skills.

CONCLUSION: The COVID-19 pandemic quantitatively reduced the volume of work, but qualitative evidence showed the reporting skills of trainees improved as they shouldered more responsibility and had to work more independently under indirect supervision of consultants working from home.

P-125

Pelvic venous congestion with extensive parametrial and perivaginal varicosities during pregnancy on MRI – A rare case

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Pelvic venous congestion syndrome is a rare syndrome presenting mostly in females with a constellation of signs and symptoms including dyspareunia, dysmenorrhea, pelvic pain, dysuria and varicose veins in the vaginal and vulvar regions. It is an infrequent presentation during pregnancy, only 2-4% develop vulvar varicose while the incidence of vaginal varicose is rarer. These varices develop mostly during the second and third trimesters and may show spontaneous resolution after pregnancy, however present a threat to the patient in case of bleeding. It is therefore crucial for the radiologists to be aware of such findings while evaluating patients with symptoms of pelvic venous congestion syndrome. Here we present a case of a pregnant female with imaging findings consistent with pelvic venous congestion with parametrial and perivaginal varicosities.

P-126

Post traumatic facial artery pseudoaneurysm

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Facial artery a branch of external carotid artery rarely develops an aneurysm due to its superficial location and small size that mostly leads to complete dissection rather than laceration of the vessel. Pseudo-aneurysms develop in the superficial temporal arteries in this region. Rupture of this aneurysm can lead to extravasation of blood within the adjacent soft tissues resulting in hemorrhage in some cases. Only a few cases of facial artery aneurysms have been reported in publications. We are therefore discussing here a case of left facial artery pseudoaneurysm secondary to trauma and its radiological imaging findings on CT angiogram.

P-127

Information offered to patient after consent for radiological procedure

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OBJECTIVE: To assess intradepartmental practices about proper patient guidance and whether patients undergoing radiological procedure are offered record of their consent or not.

METHODS: This was a descriptive retrospective study to audit informed consent forms over a period of three months from 15 May to 15 August 2022. A total of 120 patients were selected. Clinical Record of patients undergoing intervention procedures at the IR suite of Rehman Medical Institute Were collected. Patient records were assessed in terms of containing consent discussion or consent form. All patients should be offered a written /audio/visual record of their consent as per standard practices outlined by General Medical Council guide on decision making and consent. Target was to check that 100 percent of consent forms should have an attached carbon copy or if consent form does not incorporate carbon copy, 100 percent of patient notes should have some mention written / audio/visual information about the discussion being offered to the patient. Data was collected in terms of containing carbon copy or/and patient notes mentioning offer of written or audio or visual information to the patient. We intended to secure target of 100 percent. Data was analyzed using SPSS version 22.

RESULTS: 100 percent patients were offered full information about the procedure. All the patients had been informed about the consent.

CONCLUSION: Intervention radiology suite of Rehman medical institute obtained 100% audit target of information offered after consent for radiological procedures.

P-128

Role of radiologists in multidisciplinary team meetings

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OBJECTIVE: At assessing the quality and amount of involvement of radiologists in MDTs and problems in organizing MDTs both in terms of administration and time management.

ATERIAL AND METHODS: An online Google questionnaire consisting of 17 questions with both open ended and multiple-choice answers was forwarded to radiologists belonging to different hospitals of Pakistan. Descriptive analyses were performed.

RESULTS: Total 76 radiologist , 45(59.5%) qualified radiologists and 31(40.8%) trainees took part in survey. 68(89%) of them attended MDTs but only 30(40%) of them review imaging before meeting. 8(10.5%) out of 75 couldn't attend meeting; (66.7%) due to their busy schedule and (33%) because they are not formally invited. 74% additional information provided by radiologist during meeting which are requested by participant helped to refine/change 25-50% treatment plan. Problems related to MDTs were; inadequate documentation and available clinical information 42(56%), few images can be presented in meeting 26(34%),lack of accreditation with CME 61 (80%) and lack of annual appraisal by department 42(56%) .

CONCLUSION: Despite the decisive role of radiologist in MDT's, issues like inadequate clinical information provided to radiologist, lack of appraisal by department, lack of CME accreditation and improper preparation by radiologist due to workload are issues that should be addressed for a better patient care and to make MDT more fruit full.

P-129

Assessment of physicians perception about radiation hazards

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OBJECTIVE: To assess physician's knowledge about radiation hazards and referral guidelines while exposing patients to radiations.

METHOD: A descriptive cross-sectional study was conducted at Fauji Foundation Hospital, Rawalpindi. The total duration of the study was 6 months from July to December 2021. A carefully designed questionnaire addressing radiation hazards was distributed among consultants of various departments of Fauji Foundation Hospital and their responses were noted.

RESULTS: Majority of physicians had little knowledge of ALARA principle, FDA recommendations, ICRP and Gonadal shields but they considered CT scans as the most radiation-providing among radiological modalities.

CONCLUSION: This study highlighted the fact that there was little knowledge regarding radiation hazards among physicians and further measures were needed to educate them about these hazards to restrict unnecessary use of radiological modalities.

P-130

CT scan head in trauma

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OBJECTIVE: To assess appropriateness of CT head in patient presenting with head trauma.

METHODS: Patients were referred from emergency and neurosurgical department. We evaluated plain CT scans of 100 patients with head trauma. Bony soft tissue and brain findings were noted. Frequency was computed.

RESULTS: Among 100 patients 90% had bony fractures. Out of which 70% had simple linear fractures and 30 percent had comminuted fractures. Communicated fractures were associated with extradural and subdural hematoma in 80% of cases.

CONCLUSION: Non contrast CT head is the most appropriate initial examination in patients with minor or mild trauma. It plays major role in assessing simple and communicated fractures. When a fracture is identified, a careful search for adjacent soft tissue injury should be undertaken. It has pivotal role in assessing contusion, extradural and subdural hematoma.

P-131

Value of DW-imaging and MR spectroscopy in the evaluation of leukodystrophies

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Dysmyelinating diseases, or leukodystrophies, encompass a wide spectrum of inherited neurodegenerative disorders affecting the integrity of myelin in the brain and peripheral nerves. Most of these disorders fall into one of three categories - lysosomal storage diseases, peroxisomal disorders, and diseases caused by mitochondrial dysfunction - and each leukodystrophy has distinctive clinical, biochemical, pathologic, and radiologic features. Magnetic resonance (MR) imaging has become the primary imaging modality in patients with leukodystrophy and plays an important role in the identification, localization, and characterization of underlying white matter abnormalities in affected patients. MR imaging has also been extensively used to monitor the natural progression of various white matter disorders and the response to therapy. Although conventional magnetic resonance imaging has significantly contributed to recent progress in the diagnostic work-up of these diseases, diffusion-weighted imaging and MR-spectroscopy has the potential to further improve our understanding of underlying pathological processes and their dynamics through the assessment of normal and abnormal diffusion properties of cerebral white matter. Evaluation of conventional diffusion weighted and ADC map images allows the detection of major diffusion abnormalities and the identification of various edema types, of which the so-called myelin edema is particularly relevant to leukodystrophies. Depending on the nature of histopathological changes, stage and progression gradient of diseases, various diffusion weighted and MRS imaging patterns may be seen in leukodystrophies.

P-132

Noninvasive imaging of congenital coronary artery anomalies in adults: Role of multi-detector CT scan in clinical practice

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The congenital coronary artery anomalies that present in adulthood are relatively uncommon. However, ectopic origin of a coronary artery from the aorta is a diagnosis that must be excluded in young adult with typically ischemic chest pain or syncope. These anomalies have high clinical profile and the second most common cause of sudden exertion related cardiac death in athletes. Full non-invasive assessment of congenital coronary arteries anomalies or their exclusion may therefore be advantageous in various circumstances. Multidetector CT has rapidly evolved from the research setting to become a useful clinical tool and must now also be considered for this role. Submillimeter ECG gated MDCT allows rapid acquisition of whole heart with 3-D data in one scan. Importantly it has superior spatial resolution to MR imaging and as a result it appears to be promising tool for non-invasive diagnostic coronary angiography. The quality of imaging of main coronary arteries and side branches provided by MDCT may have importance when assessing congenital coronary artery anomalies. This review discusses the rationale for using MDCT for this indication, and examines the advantages and disadvantages of the technique.

P-133

Role of diffusion weighted MRI in differentiation of endometrioma from hemorrhagic ovarian cysts

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OBJECTIVE: We aimed to scrutinize the efficacy of diffusion-weighted MRI in differentiating endometrioma from hemorrhagic ovarian cysts.

METHODS: A retrospective study was performed at the Libyan Board of Diagnostic Radiology's Center for the Advancement of Medical Imaging, Tripoli, between August 2020 to March 2021. A total of 33 patients who were referred to the center for pelvic MRI with a suspicious pelvic mass were included in the study. All cases of hemorrhagic lesions found on pelvic MR imaging were gathered using the appropriate keywords. For each mass, T2 dark spots and T2 shading were observed and recorded. After blinded assessment of the cases, one of the radiologists also determined the size of all T2 dark spots and assessed the sites of the lesions.

RESULT: Nine of 26 endometriomas (34.62%) and none of the seven hemorrhagic cysts showed T2 dark spots. Twenty-four of 26 endometriomas (92.31%) and 3 of 7 hemorrhagic cysts (57.14%) demonstrated T2 shading. T2 dark spots were evaluated for their ability to distinguish endometriomas from hemorrhagic cystic lesions in terms of sensitivity, specificity, and positive (PPV) as well as negative predictive values (NPV) were 34.62%, 100%, 100%, and 29.17%, respectively. Similarly, for T2 shading, the sensitivity, specificity, PPV, and NPV were 92.31%, 57.14%, 88.89%, and 66.67% respectively.

CONCLUSION: Diffusion-weighted MRI, is fast, painless, effective and able to accurately diagnose endometriomas and distinguish them from functional hemorrhagic cysts using the presence of T2 spots, which is highly specific for more chronic lesions like endometriomas.

P-134**MRI findings of Leigh disease (subacute necrotizing encephelomyelopathy) - A rare case**

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Leigh disease is a rare, inherited mitochondrial DNA disorder presenting in infancy and early childhood resulting in death at an early age. It is also known as subacute necrotizing encephelomyelopathy. There is progressive neurodegeneration characteristically of the gray matter nuclei of the cerebellum, diencephalon, basal ganglia and brainstem. Despite the morbidity associated with the disease only few cases have been reported. We therefore present the case of a four-month girl who presented with fits and altered level of consciousness, with family history of mitochondrial disorders. Her workup was done and imaging findings are discussed below. The purpose of this case report is to help the radiologists in the diagnosis of this disease by elaborating the specific features of LEIGH disease.

P-135**The Herlyn-Werner-Wunderlich syndrome: a rare case**

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Obstructed hemivagina and ipsilateral renal agenesis (OHVIRA) is an uncommon and unique type of Müllerian duct anomaly and mesonephric duct malformation. Larger part of the instances of OHVIRA have been reported for an association with uterus didelphys. The presence of uterus didelphys with OHVIRA is known as Herlyn-Werner-Wunderlich Syndrome (HWWS). It occurs as a result of complete failure of the Müllerian ducts to fuse and accounts for about 5% of Müllerian duct anomalies. Initial manifestations usually appear as a result of secretions accumulating within the hemivaginal obstruction. Patients normally present in puberty, not long after menarche. Patients with HWWS can come with complaints of lower abdominal pain, severe dysmenorrhea, pelvic or vaginal mass, abnormal vaginal discharge, acute urinary retention, fever, or vomiting. Patients rarely present with infertility in adulthood. We present here a case of a 23-year female who presented through the outpatient department with complain of cyclical pelvic pain and was diagnosed as a case of OHVIRA syndrome primarily on ultrasound. Her MRI and CT findings are also discussed.

P-136**Diagnostic dilemmas in dysphagia : Radiology to the rescue!**

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Dysphagia is a common health problem specially in the elderly. It can be due to benign or malignant structural lesions, esophageal motility disorders, oropharyngeal dysfunction or neuromuscular disorders. Less commonly it may be due to extrinsic compression on esophagus. While endoscopy is excellent at delineating endoluminal causes of dysphagia, extrinsic compression is less likely to be diagnosed with this modality. In such cases, radiological evaluation is a promising alternative for clinching the diagnosis. We discuss 2 such cases of dysphagia having extrinsic compression of esophagus by normal anatomical variations to highlight as to how radiological evaluation using CT clinched the diagnosis in these cases. A 51-year male presented with dysphagia. Endoscopy was done but was inconclusive. Subsequently CT scan showed an elongated styloid process impinging on the lateral pharyngeal wall representing Eagles syndrome. Another patient presented with dysphagia. CT scan done in this patient showed an aberrant right subclavian artery arising

as fourth branch of left sided aortic arch and following an abnormal course posterior to the esophagus and anterior to cervical vertebra, compressing the former as it traversed to right side to reach its normal destination. This was diagnosed as arteria lusoria. The two cases underscore the importance of radiology in pinpointing the cause of dysphagia in both patients and providing a conclusive diagnosis.

P-137**An unusual radiological presentation of true hermaphroditism with both external genitalia**

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True hermaphroditism is a rare sexual differentiation disorder in which the external genitalia are ambiguous and the gonads contain both testicular and ovarian elements. True hermaphroditism has been replaced by ovotesticular disorder of sexual development, abbreviated as ODS. It is defined as the presence of testicular tissue with distinct tubules as well as ovarian tissue in the same gonad (ovotestis) or separately in a single person. 46, XX is the most common cytogenetic karyotype. The age and mode of presentation are variable with symptoms typically include hypospadias, urogenital sinus, inguinal hernia, cryptorchidism, gynaecomastia at peripubertal age, and lower abdominal mass. The non-invasive test of choice for detecting Mullerian and Wolffian duct derivatives is an MRI pelvis. Ultrasound can also be used to see the pelvic organs.

We present the case of a 15-year child reared as girl with gradual onset of deepening of voice, increased facial hairs and primary amenorrhea. She had Tanner's stage III female pattern pubic hairs and stage II breast development. On physical examination, there was a penile shaft with a normal urethral opening, a scrotal sac with normally located palpable testes, and a separate vaginal opening between the penile shaft and scrotum. A pelvic MRI revealed both testes within the scrotal sac to be normal in size, as well as a right-sided mild hydrocele and a left epididymal cyst. Normal corporal muscles were seen in the penile shaft (4cm). Prostate and seminal vesicle were not seen in their normal anatomical positions. An infantile-sized uterus with central endometrium and left-sided ovary was seen within the pelvis. There is non-visualization of right ovary. Correlative ultrasound revealed similar findings as well as normal echo texture and vascularity of testes. A diagnosis of ODS was made, and hormonal testing was recommended. Her karyotype was 46, XY with no mosaicism.

We present this case in order to review the pictorial radiological signs of Ovotesticular disorder of sexual development.

P-138**Intra-abdominal lymphangioma**

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Lymphangiomas are rare slowly growing benign tumors derived from lymphatic vessels. They occur in various anatomical locations of body like head, neck and abdomen. Abdominal cystic Lymphangiomas are rare intra-abdominal masses affecting the infants and young children, these may be detected incidentally on radiological investigations or present with abdominal distension, vague abdominal pain and life-threatening emergencies like bowel obstruction and torsion of cystic masses. We are discussing the case of an intra-abdominal lymphangioma in a 5-year child who presented to the pediatrics outpatient department with complaints of abdominal distention and pain. Her ultrasound and CT scan abdomen with contrast were done. She later underwent surgery and histopathology was sent.

P-139**The revelation of caput succedaneum after instrumental assisted deliveries: exclusively diagnosed on ultrasonography**

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Vacuum extraction delivery is one of the commonest and routinely available forms of assisted vaginal delivery in tertiary care hospitals. The association of caput succedaneum and mode of deliveries is sparsely discussed in any of the renowned platform. Here we are presenting case series of infants who presented to us with scalp swelling in our ultrasound suite and we diagnosed them as caput succedaneum exclusively on sonography with no need of CT or MRI scanning.

P-140**Quantification of differential renal function of pelvic kidney on MAG-3 scan**

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OBJECTIVE: To determine the best method of differential renal function (DRF) calculation by using only posterior images (POST), with the geometric mean (GM) and arithmetic mean (AM) method through both anterior and posterior imaging on Mercaptoacetyltriglycine (MAG-3) scintigraphy in pelvic kidneys.

METHODS: We retrospectively included 50 patients with pelvic kidneys who underwent MAG-3 scintigraphy with simultaneous anterior-posterior images taken by a dual-headed gamma camera from January 2019 to August 2022. Both anterior and posterior images were processed on SYNGOP software and differential renal function (DRF) was calculated by using only posterior image and geometric and arithmetic means. DRF <40% was considered as abnormal. The differences in DRF were statistically analyzed by paired T-test using SPSS 20 software.

RESULT: A total of 50 patients, including 32 males and 18 females with mean age 31 years. There were 19 right and 31 left pelvic kidneys. The mean value of the DRF determined by posterior images was 22.5 ± 13.99 , by arithmetic mean and geometric mean was 33.7 ± 15.9 and 33.06 ± 15.04 respectively showing statistically significant difference between posterior and mean methods. ($p < 0.001$). However, no significant difference was found in DRF calculated by arithmetic and geometric mean methods. ($p = 0.486$). 20% of ectopic renal units had DRF <40% on posterior image out of which 22.7% and 15.9% showed DRF >40% by arithmetic and geometric mean method respectively.

CONCLUSION: DRF quantification of pelvic kidneys calculated by GM and AM are better than posterior only images on MAG-3 scintigraphy as it overcomes the effects of variable renal depth of pelvic kidney on renal function.

P-141**CT appearance of neuroendocrine skeletal metastases detected with ⁶⁸GA-dotatoc PET-CT as part of same PET-CT examination**

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OBJECTIVES: To evaluate findings on computed tomography (CT) performed for neuroendocrine tumor skeletal metastatic lesions that were detected on

⁶⁸Ga-DOTATOC PET as a part of same examination, and also aim to evaluate the morphological features of the lesions.

METHODS: One hundred and thirty-nine consecutive patients were included in our study, among them twenty-four patients (16 male and 8 female mean age of 40 years) had met the criteria of inclusion. PET-CT images were acquired for all one hundred and thirty-nine patients.

RESULTS: Four hundred and sixty lesions in 24 patients were considered to be probable bone metastases at PET. Three hundred and forty-nine lesions were detected by both CT and PET-CT revealed 263 (75%) osteosclerotic lesions, 79 (22%) osteolytic lesions and 4 (1.14%) mixed type, however computed tomography (CT) showed negative results for one hundred and eleven lesions (24%).

CONCLUSION: CT images obtained as part of PET-CT scanning were useful in recognizing the precise location of bony lesions and thus help in avoiding the misdiagnosis of bone metastasis. However, CT scan had not revealed a large number of lesions which had shown tracer uptake. While according to the CT appearance, the detection of osteosclerotic lesions is more common than other metastatic lesions.

P-142**Tracer clearance at 20 minutes in MAG3 renal scans versus T1/2 clearance for symptomatic UPJ obstruction**

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OBJECTIVE: To increase the sensitivity of MAG-3 renal scan for UPJO by examining the utility of alternative measurement P20.

METHODS: From May to January 2021, 30 patients with unilateral or bilateral PUJO and underwent pyeloplasty. Pre and postoperative MAG-3 renal scans were also available. Software generated 20 min/peak ratio and diuretic T1/2 method were compared to see which method is sensitive for symptomatic PUJO. The data were analyzed by a generalized method using statistical computer software (SPSS version 20), applying paired t-test and analysis of variance for multi-group comparisons. A-value <0.05 was considered statistically significant.

RESULT: The study included 24 males (80%) and 6 females (20%). The mean age of the patients was 11.71 ± 10.59 years. The result shows the statistical significance study. The software-generated 20 min/peak ratio had greater reduction after the surgery. The diuretic T/12 also showed the clearance but it was considered non-significant.

CONCLUSION: A positive relationship between the pre and post-operative pyeloplasty of software-generated 20 min/peak ratio of renal scans. The study resulted in a significant p-value <0.05. This means the 20 min/peak ratio is more sensitive than diuretic T1/2.

P-143**Intra ventricular adult pilocytic astrocytoma of 4th ventricle - a rare variant**

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Pilocytic astrocytoma are low grade, WHO grade 1 tumors occurring predominantly in pediatric population. They account for 25% of pediatric and

1.5% of adult brain tumors. Intra ventricular tumors are a separate entity per se, but IV variants of PAs have been rarely reported in literature. Because of low volume of such cases reported in literature, a definite plan regarding their pre-op diagnosis, and management plan is lacking. A 25-year male, presented with obstructive hydrocephalus secondary to 4th ventricular lesion. He underwent posterior fossa craniotomy plus excision of this tumour, that turned out as Pilocytic astrocytoma on histopathology. Intra ventricular Pilocytic astrocytomas are extremely rare. Patients mostly do well following gross total resection of these tumors. but because of rare nature of these lesions, well established guidelines need to be made for their diagnosis, treatment and follow up.

P-144

Evaluation of differential renal function by various uptake intervals using technetium ^{99m} mercaptoacetyl triglycine (Mag-3) in patients with unilateral hydronephrosis

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OBJECTIVE: The purpose of this study is to evaluate split renal function (DRF) on different time intervals using Tc^{99m} MAG-3 in patients with unilateral hydronephrosis.

METHODS: From August 2020 to December 2020, 40 consecutive patients with unilateral hydronephrosis underwent Tc^{99m} MAG-3 in order to evaluate Differential Renal Function (DRF) by various uptake intervals. The uptake intervals were 1-2 mins, 1.5-2.5 mins, and 2-3 mins, out of which the DRF values at 1-2 mins was obtained as reference. The data were analyzed by using SPSS v.20 statistical test (independent sample t-test, Levene's test for equality of variances, Pearson correlation test) p value <0.05

RESULTS: In this study, 40 patients with unilateral hydronephrosis out of which 26 patients (65%) had left HN and 14 patients (35%) had right HN. The mean age of the patient was 20.21 years (minimum 3 months and maximum 68 years). A total of 72% were males and 28% were females. Their ages were divided into two groups. Group 1 =17 years and group 2 =18 years. No statistically significant difference was observed when compared DRF values at 1.5-2.5 mins, and 2-3 mins uptake interval with DRF values of reference (1-2 min) uptake interval among patients with all ages as well as the results were insignificant when DRF values among two age groups (=17 or =18 years) were evaluated.

CONCLUSION: There was no statistically significant difference in DRF values of two uptake intervals (90-150 sec & 120-150 sec) when compared with reference interval (60-120 sec) among patients with all ages. Moreover, no significant difference when patients were divided into two age groups (>18 years and ≤18 years) was observed.

P-145

Shoulder impingement syndrome: MR findings in 50 shoulders

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OBJECTIVE: To determine role of magnetic resonance imaging in evaluation of shoulder impingement and rotator cuff tendon tears.

METHODOLOGY: This was a cross-sectional analytical study carried out in the Radiology department of Rehman Medical Institute Peshawar over a period of two years. Our sample size was 50 patients having subacromial impingement. The age range was 20 to 70 years (median 45), and patients presented with persistent or recurrent rotator cuff. Data were collected retrospectively from the hospital's database, and the need for informed consent was waived off by permission from the hospital's ethical committee. MRI was performed for all patients on a 1.5T GE MRI with multi-slice acquisition using multi-channel-surface coils (8 and 16 channel). All patients underwent a routine imaging protocol of the joints, including PD and PD FATSAT in all planes. Two radiologists having three years of musculoskeletal reporting independently assessed the images. Data were analyzed using Microsoft Excel and SPSS version 22 (Armonk, NY: IBM Corp.). Qualitative variables were given as a number (n) and percentage (%). Descriptive statistics on quantitative variables were given as mean ± SD. Multivariate analysis was used to treat variables that were found significant in the univariate analysis, and p <0.05 was considered significant.

RESULTS: The common cause of subacromial impingement was degenerative AC joint changes, which were more seen in patients aged above 40 years. 53% of patients had type 3 and 4 acromion causing impingement on supraspinatus tendon. Two patients had OA with superior displacement of humerus and associated impingement of supraspinatus tendon. Rest of the patients had trauma associated findings with tears of labrum and osseous contusions. None of the patients had subcoracoid impingement.

CONCLUSION: Supraspinatus impingement is the most common impingement syndrome, in which OA related changes of acromioclavicular joint and type 3 and 4 acromion plays major role.

P-146

Audit of compliance with imaging referral guidelines and to assess prevalence of unnecessary repeats

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OBJECTIVE: To illustrate compliance with imaging referral guidelines and to assess prevalence of unnecessary repeats. Imaging referral guidelines are required by the European BSS Directive and national legislation, the Ionizing radiation (for Medical Exposures) Regulations.

METHODS: This retrospective study was conducted in the Radiology department of Rehman Medical Institute Peshawar. A random sample of n=30 patients was selected in including population of different age group in which out of 30, 14 were male and 16 were female patients. The clinical history and medical record of the patients were acquired from central database HIMS. Each case was thoroughly studied and assessed. Microsoft excel 2016 was used in entering and analysis of data. The target was compliance with ACR (American College of Radiology) guidelines for the vast majority of referrals with clinical presentations and a realistic and achievable target of 90% compliance.

RESULTS: Out of 30 examinations included in this study, 10 were from CT modality, 10 from MRI, 5 fluoroscopy, 3 ultrasound and 2 were plain radiographs. The MRI modality was showing most compliance with image referral guidelines. Patients presented to the Radiology. Out of 30 patients, 76.6% (n=23) examinations conducted were most appropriate and according to the image referral guidelines of ACR whereas 23.3% (n=7) were not appropriate and were not in line with the referral guidelines set by ACR.

CONCLUSION: Majority i.e. 76.6% of the examinations performed in radiology department were most appropriate and according to the image referral guidelines of ACR. Implementation and improvement may be done by continuing education and training and clinical audit.

P-147**Discrepancy between provisional reports of CT brain by radiology residents vs consultant radiologists; A clinical audit conducted at FFH Rawalpindi**

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OBJECTIVE: To assess the discrepancies between radiology residents and Faculty radiologists at Fauji foundation hospital Rawalpindi.

METHODS: Consecutive CT brain plain preliminary interpretations performed by on-call residents (second-year through fourth-year) over a period of 2 months were included. Patients were referred from emergency and wards. Eight radiology residents and 7 radiology consultants participated. Provisional interpretations by radiology residents were graded using ACR 2016 RADPEER scoring system. A prospective review of discrepant cases was performed to assess the percentage of discrepancy. Conclusions of both the provisional and final reports of each study were reviewed for concordance, with reference to the full report if needed.

RESULTS: There were 170 studies with complete reports. Discrepant reports were noted in 42 (24.7%) studies. Of these, 22 (12.9%) were assessed to be clinically significant and the majority of these (13) were due to interpretations which should be made most of the time.

CONCLUSIONS: Discrepancy rates in this study are comparable with previously reported data for discrepancies between attending radiologists and those between attending radiologists and residents' data. The majority of preliminary reports for on-call brain scans were concordant with final interpretations. Such provisional radiology reports provide important information to guide initial patient management.

P-148**Patient's satisfaction with radiology department-multicenter quality improvement audit**

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OBJECTIVES: To assess patient's level of satisfaction regarding services of radiology department with intent of making improvements.

METHODS: It was a questionnaire based research setting. This study was conducted at five different hospitals including Fauji Foundation Hospital Rawalpindi, Balochistan Institute of Nephrourology Quetta, Children hospital Lahore, Khyber Teaching hospital Peshawar, The Diagnostic Center Lahore. A total of 522 patients undergoing different radiological investigations in Radiology departments were assessed via questionnaires distributed amongst patients in outpatient department. The data was analyzed for descriptive statistics.

RESULTS: Out of 522 patients 85% were satisfied with their information regarding their investigation, 13% were very satisfied and 3% were unsatisfied. 95% patients were satisfied with the appointment time, 4% were very satisfied and 1% was unsatisfied. 94% patients had ease in finding department while 6% patients had difficulty in finding department. 93% patients were satisfied with waiting area and waiting time, 5% were very satisfied and 3% were unsatisfied. 85% patients were satisfied with attitude of duty staff, 14% were very satisfied and 1% was unsatisfied. 92% patients were satisfied with the expected radiological investigation, 6% were very satisfied and 2% were unsatisfied. 97% patients didn't require improvements while 3% required improvements in department.

CONCLUSION: Less than 95% patients were satisfied with information regarding their investigation, ease in finding department, waiting time, waiting area, attitude of duty staff and expectation regarding their investigation. Second round of audit will be done after educating the staff.

P-149**Knowledge of radiation hazards and radiation protection among non-radiology hospital paramedics and patient's referred to Radiology**

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OBJECTIVE: To evaluate the basic knowledge of the health care workers and the patients regarding radiation hazards and methods of radiation protection in a tertiary care setup.

METHODS: This is a cross-sectional study, conducted in the Radiology department of, Liaquat National Hospital Karachi. The study included the staff, doctors and patients who get exposed to radiations during their imaging workup. A questionnaire was given to the participants consisting of 16 questions, including demographic data and assessing basic knowledge regarding radiations. The total calculated sample size was 226. Data analyzed through SPSS and results formulated.

RESULTS: Total 226 were included into the study. 75.2% belonged to the age group of 18-32 years, remaining had age range of 33-52 years. 48.2% were males and (53.2%) were graduates and (76.1) previously underwent imaging. Most of participant thought that x-ray (67.7%) and CT-scan (58.4%) uses radiations: 31%, thought the same of mammography, of MRI (27.9%), of ultrasound (14.6%), DEXA (11.5%), PET (11.5%) and of PET-CT (19.9%) also emits radiations. 62.8% had perception that radiations are very hazardous to health. 27% patients had attended workshop on radiation awareness. Patients considered that radiations are hazardous for ovaries (53%), testies (41.6%), thyroid (40.7%), breast (25%), eyes (23%), kidney (17.7%) and liver (11.9%). The common source of knowledge was internet (45.1%), doctors (21.2%), staff (20.8%), friends (10.6%) and pamphlets (2.2%).

CONCLUSION: Medical radiology has its benefits but the associated radiation hazards exist and the awareness of the risks is important for the staff as well as the patient being exposed. Appropriate measure should be taken in order to spread awareness including sessions for the staff and doctors. A trained staff and well-informed doctors can help the patients as well.

P-150**Sample adequacy obtained with a 21g needle in fine needle aspirations of thyroid nodules**

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OBJECTIVES: To determine sample adequacy obtained with a 21G needle in fine needle aspirations (FNA) of thyroid nodules.

METHODS: This is a retrospective observational study carried out after approval of Research Ethical Committee. All patients who underwent a fine needle aspiration of thyroid nodule at the interventional radiology department whose cytology reports are also available. Non probability consecutive sampling was used.

The skin overlying the nodule was prepared in a sterile manner with povidone-iodine solution. After giving local anesthetic three to four passes were performed from nodule by moving the needle back and forth within the nodule, using 21 G needle. The needle was attached to a syringe and negative suctioning applied. Total 41 patients were included, using the two sample proportion formula on WHO sample size calculator. Criteria for adequacy were presence of six groups of well-visualized follicular cells, with at least ten cells per group on all slides and presence of follicular cells with significant cytological atypia. A minimum number of follicular cells is not required. The presence of numerous inflammatory cells. A minimum number of follicular cells was not required. The presence of abundant thick colloid was enough. A minimum number of follicular cells is not required if easily identifiable colloid predominates. Criteria for inadequacy were presence of fewer than six groups of well-visualized follicular cell groups with ten cells each on all slides, presence of poorly prepared, poorly stained, or obscured follicular cells, presence of cyst fluid, with or without histiocytes, fewer than six groups of ten benign follicular cells and presence of only abundant red cells, with rare lymphocytes and monocytes.

RESULTS: The study included 56 patients of which 10 (17.9%) were males and 46 (82.1%) were females. In most of these patients the size of the nodule was 2-3 cm (44.6% n=25 patients); 12 patients (21.4%) had nodules smaller than 2cm and 33.9% n= 19 patients had nodules measuring 3-5 cm. over all adequacy of the sample was 92.9% n= 52 samples, only 7.1% n=4 samples were inadequate. 21G needle provided adequate samples in most of the cases also lesser complications due to smaller size, proving it to be better alternative to other needles.

CONCLUSION: Thyroid gland due to its superficial location can be sampled via FNA. US-guided FNA is highly sensitive and specific diagnostic tool in the evaluation and diagnosis. Large core needles used previously cause more complications. 21G needles are equally effective and provide adequate samples for diagnosis with lesser complications.

P-151

A quality control audit of MRI brain perfusion imaging

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OBJECTIVE: To identify whether the MRI brain perfusion studies performed at SKMCH follow international standards.

METHODS: MR perfusion imaging has an ever-growing role in the world of radiology because of its role in evaluating a variety of cerebral pathologies, including tumors and ischemia. It can differentiate between tumor recurrence/progression or tumor necrosis in patient being treated by radiation. Of the various techniques devised for evaluating cerebral perfusion imaging, the dynamic susceptibility contrast method has been employed most widely among clinical MR imaging practitioners.

RESULTS: Slice thickness, IV catheter size, injection rate, total acquisition time, pulse sequence, flip angle and TE is according to ASFNr guidelines. However parameter like TR, matrix size and flip angle are not in accordance to the guidelines and needs to be readjusted. Adequacy of the contrast curve was 65% and inadequacy was 35%. 62% of patient reported as disease progression/radiation necrosis was subsequently proved in follow-up imaging. However, the initial report was not supported on subsequent imaging in 38% cases.

CONCLUSION: The result showed that most of the parameters were followed according to ASFNr, however few parameters like needs to be adjusted accordingly. It is suggested to change TR, flip angle and matrix size according to ASFNr GUIDELINES and conduct the scan with these settings.

P-152

Indications of computed tomography in severely injured patients

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OBJECTIVE: To assess the adequacy of clinical information on CT major trauma request form from emergency department. Clinical information on the radiology requests should fulfill the criteria set by Royal College of Radiologists for polytrauma CT. There is correlation between inadequate clinical information in referrals and inaccurate radiology reports.

METHODOLOGY: A random sample of 100 Computed tomography scans in severely injured patients was taken over a period of 3 years from August 2019 to August, 2022 in the Department of Radiology, Rehman Medical Institute, Peshawar. All the selected patients had been referred from Emergency department. CT scans included CT Head, CT whole body, CT chest and CT chest & Abdomen. The clinical details provided with the request form was assessed retrospectively for adequate clinical information, mechanism of injury and visible or suspected injuries for accurate radiologic reporting to avoid unjustified radiation exposure to patients. Data was collected in tabulated form and analyzed using Microsoft Excel 2016.

RESULTS: In total, 76% of the referrals had adequate clinical information with clear cut indications with fulfillment of criteria for polytrauma CT, mechanism of injury, and visible or suspected injuries, 11% had inadequate clinical information and 13% had no clinical information on referrals.

CONCLUSION: We concluded from our study that 76% referrals for CT in cases with trauma were adequate, whereas the remaining cases had inadequate or no clinical details available. This is less than the required 100% set by international guidelines. This is less than the required 100% set by international guidelines and criteria set by Royal College of Radiologists. All the referrals for polytrauma Computed tomography should have adequate clinical information, mechanism of injury and visible or suspected injuries for accurate radiologic reporting and avoidance of unjustified radiation exposure to patients. The results have been shared with concerned referrers and a re-audit is planned.

P-153

"Is that your final answer?"- an audit of provisional versus final reports of on-call CT imaging

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OBJECTIVE: The objective of this audit was to ensure a high standard of accuracy to be provided by the senior residents.

METHODS: This audit was performed at RMI (Rehman Medical Institute) Peshawar from 25 to 27 August 2022. Consecutive 36 out of hour (on call) scans were viewed on PACS (synapse 5) reported by senior residents on HMIS and provisional reports were printed. Later, these provisional reports were verified by a consultant radiologist. Discrepancies were identified, categorized as major (need change patient management and can alter outcome) or minor (do not change patient management and do not alter outcome). The target, keeping in reference international guidelines, was 5% for major discrepancies and 10% for minor discrepancies.

RESULTS: 36 out of hour scans were performed, out of which 17 were females and 19 were males. Total plain brain, brain with contrast, lumbar spine, Neck, Chest, CTPA, abdomen and pelvis, limb, HRCT, KUB were 3, 3, 1, 1, 5, 1, 15, 1, 2 and 4, respectively. Major discrepancies were missed brain metastasis and portal vein and thrombosis i.e., 2 out of 36 and minor

discrepancies were 6 out of 36. Most minor discrepancies were noted in CT abdomen & pelvis subgroup. The percentage of major discrepancies was 5.5% and minor discrepancies was 16.6%.

CONCLUSION: The major discrepancies were comparable with reference audit, but minor discrepancies were more than that.

P-154

Prevalence of fetal posterior cerebral artery in patients presenting with various neurological complaints in a tertiary care hospital

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OBJECTIVE: To assess the prevalence of fetal posterior cerebral artery in a tertiary care hospital in Karachi.

METHODS: Patients who presented with different neurological symptoms to Liaquat National Hospital, Karachi, underwent 1.5T MRI exposure and the data was analyzed.

RESULTS: Out of 226 patients, 71(31.4%) patients showed fetal posterior cerebral artery on time-of-flight sequence. The occurrence was more common in males than in females. Unilateral PCA was seen in 51(71.8%) cases of which 29(12.8%) were left sided.

CONCLUSION: Almost 1 in 3 people that presented to our institution had a FTP. Thus, it is important to vigilantly report its presence to ensure proper pre-surgical assessment to aid in determining mode of intervention, early detection of possible complications and maintain follow ups.

P-155

Peritoneal/ mesenteric clues in ascertaining gut related pathologies on contrast-enhanced CT abdomen

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OBJECTIVE: To determine ancillary mesenteric/ peritoneal cavity findings on contrast enhanced CT abdomen in investigation of equivocal cases of gut-related pathology.

METHODS: A total of 23 patients presenting to the Radiology department for contrast enhanced CT abdomen who demonstrated non-specific gut related abnormalities on imaging were included in the study for a period of three months from May to July 2022. Patients of all age and both genders were included; those having non-gut related findings or having definitive bowel pathology on CT were excluded from the study. Mesenteric/ peritoneal cavity findings were divided into a) vascular (congestion, stretching, crowding, ischemia), b) mesenteric inflammation (stranding, lymphadenitis), c) mesenteric apertures/ bands representing internal hernia, d) peritoneal cavity collections and their characteristics. e) peritoneal thickening with enhancement pattern and omental caking/deposits. Findings were confirmed with response to treatment, surgery, histopathology or cytology.

RESULT: Out of 23 equivocal cases without definitive focal gut lesion on CECT abdomen, 15 patients had ancillary peritoneal and mesenteric findings acting as imaging clues; 6 of these patients were lost to follow up, while 9 patients could be confirmed for definitive diagnosis on follow up. These included inflammatory mesenteric findings/ omental stranding in 4 patients (tuberculous 2; Crohn's 2), peritoneal collection/ leaked focal perforation with marginal enhancement in 1 (malignant lesion); peritoneal carcinomatosis in 1 (malignant); mesenteric apertures with thin bands (internal hernia with

secondary gut obstruction in 2; while mesenteric stranding with vascular stenosis in 1 patient. Only one patient labelled as focal gut leakage with secondary abscess turned out to be mucinous adenocarcinoma after excision biopsy while rest of the patients' diagnosis conformed to the imaging diagnosis. Hence out of 10 patients without definite focal gut lesion, ancillary mesenteric clues were sufficient to provide definitive diagnosis in 9 patients (90%).

CONCLUSION: Patients investigated for gut-related symptoms may not have clear-cut evidence of gut abnormality on CECT abdomen in some cases. Careful scrutiny of mesenteric abnormalities such as vascular congestion, inflammation, focal collections, pattern of enhancement of peritoneum, mesenteric bands, omental caking or deposits can act as diagnostic clues in ascertaining a diagnosis.

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The prevalence of facet joint arthrosis related to different age groups on magnetic resonance imaging

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OBJECTIVE: To assess the prevalence of facet joint arthrosis and its relation to the different age using magnetic resonance imaging.

METHOD: A retrospective study data is analyzed from 427 patients using MRI records and divided into the three groups based on their age. Group I is composed of 190 patients aged between 20-40 years, Group II included 191 patients aged between 40-60 years, and 45 patients older than 60 years are labeled as Group III.

RESULT: A total of 162 subjects out of 427 with group distribution as 64 subjects from Group I, 77 subjects from Group II and 21 subjects from Group III were affected with facet joint arthropathy. The prevalence of facet arthrosis in Group I aged 20-40 years was 34%, Group II aged 40-60 years was 40%, and group III older than 60 years was 46%. Final result showed that the group more affected was older than 60 years.

CONCLUSION: Our study on prevalence of facet joint arthropathy using magnetic resonance imaging reveals that the patients aged more than 60 years is mostly affected and the incidence of facet arthropathy increases with age.

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Introducing image based key feature questions (ib-kfqs) in radiology postgraduate program: An innovative approach

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OBJECTIVE: To assess and develop the image interpretation skills of radiology residents needs the incorporation of high quality assessment. This can be achieved using key features in image interpretation via using Image-based Key Feature Questions (IB-KFQs) in radiology written assessment.

METHODS: All the enrolled residents in the radiology residency program at DIR were included in the written assessment after approval from the institutional review board (IRB). The written assessment was conducted by using both types of formats, i.e., MCQs and IB-KFQs. The internal consistency and reliability of each test question was calculated by Cronbach's alpha. The Student t-test was used to compare mean scores between the two tests, i.e., MCQs and IB-KFQs. p-values of < 0.05 were considered statistically significant. Spearman's correlation coefficient was used to measure the correlation between the scores of IB-KFQs and MCQs.

P-158**Coarctation of aorta with aberrant right subclavian artery**

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Coarctation of the aorta is a congenital segmental narrowing of the aortic arch with severe hemodynamic repercussions and increased cardiovascular mortality. It can be pre-ductal or post ductal and according to that, inferior rib notching can be unilateral or bilateral. The unilateral rib notching in pre-ductal type is on right side. We report a case of coarctation of aorta with aberrant right subclavian artery and unilateral rib notching on left.

P-159**Oral lymphangioma of the tongue in a child: A case report**

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Lymphangiomas are congenital malformation usually uncommon, diagnosed in early infancy and childhood. They have a benign proliferation of lymphatic vessels and represent hemartoma of malformed lymphatics. They are extremely rare in the oral cavity. Distinctly involve the region of head and neck. Intraoral lymphangioma mostly involves anterior, dorsum and lateral border of the tongue followed by buccal mucosa, palate, gingiva, floor of the mouth and lips. Lymphangioma of the tongue may present as localized, diffusely enlarged growth to cause macroglossia associated with difficulty in swallowing, mastication, speech disturbance, airway obstruction and other deformities of maxillofacial structures. We present a case of 11 year child who was referred to our hospital with the complain of tongue swelling and was diagnosed to be a lymphangioma.

P-160**Thoracic complications of hepatic cirrhosis: spectrum of radiological findings**

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Patients with chronic liver disease exhibit various cardiovascular and pulmonary complications. Hepatopulmonary syndrome results in dyspnea due to intrapulmonary Arterio-venous shunting and ventilation-perfusion mismatch. Porto-pulmonary hypertension occurs in patients with portal hypertension. Intrathoracic Porto systemic collateral vascular pathways develop in patients with portal hypertension to allow decompression of the portal vein into the systemic circulation. Hepatic hydrothorax may develop in patients with cirrhosis and ascites. Massive necrosis of the liver from any cause may be associated with acute hypoxic respiratory failure, necessitating ventilatory support. Bacterial infection is common in cirrhotic patients because of a compromised host defense system. Hepatocellular carcinoma may produce hematogenous lung metastases, Intrathoracic lymph node metastases, direct intracardiac extension, and pulmonary embolism.

Interferon therapy for treatment of chronic active hepatitis C may disturb cellular immune activation in some patients and contribute to the onset and progression of sarcoidosis. Awareness of the various thoracic manifestations in chronic liver disease can be helpful for making a differential diagnosis and planning proper management.

RESULTS: The mean score of IB-KFQ was 29.24±11.41 and MCQ was 28.931 ± 11.41 respectively and both were found to be comparable to the mean score of MCQs. A positive correlation was observed between the MCQs score and the KFQs score (rho 0.823, p-value <0.001). **CONCLUSION:** The use of image-based key feature questions (IB-KFQs) in the radiology residency written assessment is a workable addition to the current MCQ format. The IB-KFQs are overly emergent in real-life scenarios and are beneficial to future radiologist training.

P-161**Comparing Effective Doses on Plain Abdominal CT Scans between two scanners of the Institute**

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OBJECTIVES: CT has been the source of half of the medical radiation, making it a significant contributor to ionization radiations. The objective of our study is(a) to calculate the effective dose in plain abdominal CT scans using CT dose metrics. (b) to compare the radiation doses between 16-slices scanner and 128-slices CT scanner.

METHODS: Plain Abdominal CT scans were performed on two scanners of the institute, according to thin section- departmental protocol. mAs was set, according to patients' weight and length of scanned area). Radiation parameters of each patient, i.e. CTDIvol, DLP, kVp, mAs were collected from the Post scan display readings. The effective dose (ED) was calculated from the conversion formula: ED = k x DLP; DLP (mGy.cm) =CTDI volume (mGy) × L (cm); CTDIvol = CTDI/pitch (mGy). Data was analyzed using SPSS version 21.

RESULTS: A total of 300 patients (M: 192, F: 108) were included in the study, with the age of 37 (IQR: 28-50) years. The ED was estimated to be 9.52mSv (8.64-10.37) and 9.46 mSv (8.71-11.02) for 16-slice and 128-slice scanners respectively, without statistically significant difference (p-value=0.319). No differences were observed when ED were compared for gender [males: 9.61mSv, p-value=0.701; [females: 9.33mSv, p-value= 0.178] for both scanners. A positive correlation of ED with age, weight, current, length of the scan was observed in 16-slice scanner and 128-slice scanner.

CONCLUSION: The difference in slice number of the CT scanners doesn't affect the amount of radiation exposure to the patient.

P-162**Non-viable cardiac segments in myocardial infarction on CMR- an emerging modality in pakistan: A pictorial essay**

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OBJECTIVES: To summarize the current state of the art Cardiovascular Magnetic Resonance (CMR) imaging performed in patients of myocardial infarction (MI) to visualize extent and transmuralty of permanent myocardial injury categorized according to 17 segment AHA model.

METHODS: It was retrospective observational study. CMR findings consistent with MI in patients were selected in a single center and catergerized as per model described above.

RESULTS: This pictorial essay shows MI with an emphasis on CMR imaging features. CMR not only has the capability to assess scarred myocardium but also cardiac morphology and function, providing a valuable imaging tool in the characterization of infarcted segments.

CONCLUSION: CMR is an emerging noninvasive diagnostic tool aided to diagnose MI. Extent and transmuralty of non-viable myocardium is performed according to 17 segment AHA model onCMR imaging which is an important predictor of successful outcome after intervention.