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Commentary

Hepatocellular carcinoma (HCC) has reached endemic proportions in this region due to the very high prevalence of viral hepatitis. Considerable radiological resources are used in the early detection of these tumours. Some studies had suggested that MR imaging with liver specific agents were better at detecting and characterizing early disease. Baeka et al report their experience where they have compared gadoxetic acid enhanced MR with multiphase CT. Gadoxetic acid is a liver specific agent and is taken up and excreted by the hepatocytes in the bile. It uses gadolinium as its paramagnetic component. In their study they demonstrate that for lesions over 1 cm in size the diagnostic performance was the same. Gadoxetic acid enhanced MR was however better for smaller lesions. As most of the tumours we encounter are larger than 1cm this study may suggest that multiphase CT is adequate however an alternate view is that screening programs using gadoxetic acid enhanced MR may improve the detection of early disease and improve overall outcomes. Unfortunately none of the liver specific agents are currently available in Pakistan.

Staying with HCC the treatment options available in Pakistan are limited. The opportunities for liver resection or transplant are limited to one or two centres only. Trans catheter chemo embolization (TACE) is slightly more easily available. TACE is often considered to be inferior to surgical resection especially in early/small HCC. Hsua et al demonstrate that this is not the case the outcomes for surgical resection and TACE are similar even for early disease. This is heartening both for gastroenterologists as well as intraventional radiologists.

Contrast imaging for the urinary tract with conventional intravenous urography has largely died out due to the advent of non contrast CT. The non contrast CT offers many advantages such as short examination times, preclusion of the need for contrast agents and a high sensitivity. Carussa et al have interestingly tried to make a case for reintroduction of contrast in urinary tract imaging albeit with CT scanning. Their findings suggest that adding contrast in cases of ambiguity may help. This is validation for a practice that is fairly universal. So the recommendation in cases of haematuria/stone disease is In the first instance use non contrast CT. If the findings are unclear add contrast CT.

Lastly an educational article rather than original research. I often see either poorly or wrongly reported MR scans for fistula in ano. This Radiographics review by Carido et al is an excellent introduction and guide for reporting these complex cases.

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Hepatocellular carcinoma in patients with chronic liver disease: A comparison of gadoxetic acid-enhanced MRI and multiphasic MDCT

AIM: To compare the diagnostic performances of gadoxetic acid-enhanced magnetic resonance imaging (MRI) and multiphasic multidetector computed tomography (MDCT) in the detection of hepatocellular carcinoma (HCC) in patients with chronic liver disease.

MATERIALS AND METHODS: Institutional review board approval was obtained for this study and informed

consent was obtained from all patients. Fifty-one patients (43 men, eight women; age range 32–80 years) with 73 HCCs underwent gadoxetic acid-enhanced MRI and multiphasic MDCT. Two readers independently analysed each image in three separate reading sessions. The alternative free-response receiver operating characteristic (AFROC) method was used to analyse the diagnostic accuracy. Positive and negative predictive values and sensitivity were evaluated.

RESULTS: A total of 73 HCCs were detected in 51 patients. Although not significant ($p > 0.05$), the areas under the receiver operating characteristic curves were 0.877 and 0.850 for MDCT, 0.918 and 0.911 for dynamic MRI, and 0.905 and 0.918 for combined interpretation of dynamic and hepatobiliary phase MR images. Differences in sensitivity, specificity, and positive and negative predictive values between the readers were not statistically significant ($p > 0.05$). Combined interpretation of dynamic and hepatobiliary phase MRI images was more useful than MDCT in the detection of HCC lesions ≤ 1 cm in diameter for one reader ($p = 0.043$).

CONCLUSION: Gadoxetic acid-enhanced MRI and MDCT show similar diagnostic performances for the detection of HCC in patients with chronic liver disease. However, the combined interpretation of dynamic and hepatobiliary phase MRI images may improve diagnostic accuracy in the detection of HCC lesions ≤ 1 cm in diameter.

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Superselective transarterial chemoembolization vs hepatic resection for resectable early-stage hepatocellular carcinoma in patients with Child-Pugh class a liver function

PURPOSE: In contrast to hepatic resection (HR) for resectable early-stage HCC, the efficacy of transarterial chemoembolization (TACE) is controversial. This study is designed to compare the long-term outcome of TACE using superselective technique with hepatic resection for the treating resectable early-stage HCC and Child-Pugh class A liver function.

METHODS: In total, 185 consecutive patients with resectable early-stage HCC and Child-Pugh class A liver function were included: 73 patients received superselective TACE (group I) and 112 patients underwent HR (group II). We evaluated the therapy-related recurrence and long-term outcome and in both groups. The risk factors of recurrence and mortality were assessed by Cox's model.

RESULTS: The mean survival time of group 1 patient was similar to that of group 2 patient (40.8 ± 19.8 vs 46.7 ± 24.6 months respectively, $p = 0.91$). The 1, 3 and 5 year overall survival rates after TACE (group I)and HR (group II) were 91%, 66%, and 52% and 93%, 71%, and 57%, respectively ($p = 0.239$). The 1, 3 and 5 year recurrence-free survival rates in groups 1 and 2 were 68%, 28%, and 17% and 78%, 55%, and 35%, respectively ($p < 0.0001$). Serum albumin, tumour size, tumour number and recurrence interval were independent risk factors for mortality. Serum albumin level, tumour size, tumour number, and treatment modality of TACE or HR could predict HCC recurrence.

CONCLUSION: TACE is an efficient and safe treatment for resectable early-stage HCC with overall survival rates similar to that of HR. Thus, TACE is indicated in selected patients with resectable early-stage HCC.

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Unenhanced versus multiphase MDCT in patients with hematuria, flank pain, and a negative ultrasound

OBJECTIVES: To compare the impact of unenhanced and contrast-enhanced multi-detector computed tomography (MDCT) for the detection of urinary stones and urinary obstruction in patients with suspected renal colic.

METHODS: 95 patients with suspected renal colic underwent a three-phase MDCT for evaluation of the urinary tract. The unenhanced scan and the multiphase examination were reviewed retrospectively by two radiologists for the characterization of urinary stones and signs of obstruction. Results of unenhanced MDCT were compared with those obtained during the second review of the entire multiphase examination.

RESULTS: Overall diagnosis of urinary stones revealed an accuracy of 97.0% for unenhanced, and 98.9% for multiphase MDCT with a significant difference between both protocols (mixed-effects logistic regression: odds ratio 3.3; p = 0.019). With 3 versus 15 false positive ratings, multiphase MDCT was superior to unenhanced MDCT for the diagnosis of urinary stones.

There was no significant difference in detecting signs of obstruction. Inter-reader agreement for overall stone detection was excellent on both unenhanced (kappa 0.84) and multiphase (kappa 0.88) MDCT.

CONCLUSION: Contrast-enhanced multiphase MDCT offers distinct advantages compared to an unenhanced approach for the assessment of urinary stone disease, and therefore should be considered as a complementary examination for patients with inconclusive findings.

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MR Imaging Evaluation of Perianal Fistulas: Spectrum of Imaging Features

ABSTRACT: Perianal fistulization is an inflammatory condition that affects the region around the anal canal, causing significant morbidity and often requiring repeated surgical treatments due to its high tendency to recur. To adopt the best surgical strategy and avoid recurrences, it is necessary to obtain precise radiologic information about the location of the fistulous track and the affected pelvic structures. Until recently, imaging techniques played a limited role in evaluation of perianal fistulas. However, magnetic resonance (MR) imaging now provides more precise information on the anatomy of the anal canal, the anal sphincter complex, and the relationships of the fistula to the pelvic floor structures and the plane of the levator ani muscle. MR imaging allows precise definition of the fistulous track and identification of secondary fistulas or abscesses. It provides accurate information for appropriate surgical treatment, decreasing the incidence of recurrence and allowing side effects such as fecal incontinence to be avoided. Radiologists should be familiar with the anatomic and pathologic findings of perianal fistulas and classify them using the St James's University Hospital MR imaging–based grading system.