

Commentary

The prevalence of virus induced liver disease in Pakistan is among the highest in the world. Both Hepatitis B and Hepatitis C lead to chronic active and chronic persistent hepatitis resulting in the development of cirrhosis. As the infection also causes DNA damage it is often complicated by the development of hepatocellular carcinoma. The best treatment for this is liver transplantation. Having said this the relative inaccessibility of transplantation for the vast majority of Pakistanis as well as the advanced stage at first detection in most patients makes this treatment unsuitable for many. In this scenario adjuvant treatments have been demonstrated to improve both survival and quality of life. Trans Catheter Chemo Embolisation (TACE) remains the main stay of these adjuvant therapies. This has traditionally been done with the chemotherapeutic agent suspended in iodinated oil. The rate of delivery and therefore tumour necrosis has been variable. Additionally the availability of iodinated oil has also become unreliable. The introduction of drug eluting beads as the embolic agent may address these issues. Skowascha et al report mid term follow up of the use of one brand of drug eluting beads (DC Beads). Their interim report suggests that the beads are easy to use and efficacious.

Heyea et al reiterate an old adage. Presence of gas in the portal venous system has a high associated mortality. Over half of their study patients with gas in the portal venous system died. The location of the gas was a good predictor of the site of pathology with ischaemia being the most important contributor. It must be remembered that it is not the presence of gas in the portal system that leads to the associated morbidity but the underlying cause.

Borges et al describe a useful test in non alcoholic steatosis (NASH) more commonly referred to in the lay press (and also some medical circles) as fatty liver. With the association of NASH with the metabolic syndrome the appearance of fatty changes is not uncommon in our population. Hepatorenal ratios may be a useful objective adjunct to the subjective appearances.

Wang et al help to address an issue that commonly faced by neurosurgeons and radiologists taking care of patients with sub arachnoid haemorrhage (SAH). Is the CT angiogram good enough to replace the formal catheter study? Catheter angiography is associated with a small but significant morbidity especially in the setting of an acute SAH where there may be associated vasospasm. CT angiogram offer a convenient, low risk and relatively non invasive way of imaging the intracranial circulation. The evidence now suggests that with the modern scanners the diagnostic performance matches that of its invasive cousin. This should (and in many centres has already) become the standard of care for SAH patients.

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Midterm follow-up after DC-BEAD™-TACE of Hepatocellular Carcinoma (HCC)

AIM: To determine local response, its predictors and survival and complication rates after DC-Bead™-TACE in patients with hepatocellular carcinoma (HCC).

MATERIALS AND METHODS: DC-Beads™ are non-resorbable, polyvinyl-alcoholic hydrophilic microspheres. They release high amounts of chemothera-

peutics directly into the tumour. Delivery is sustained over time, tumour feeders are embolised. We used beads from 100–300 to 500–700 µm loaded with Doxorubicin (max. 150 mg/4 ml). Fifty patients (mean age: 68.5 ± 8.8 years) with HCC were analysed. DC-Bead™-TACE was performed once or repeated in two-month intervals. Imaging scans (CT or MRI) were done one-month following each procedure. To evaluate tumour response EASL and RECIST criteria was applied. If eligible, every patient received a non-selective TACE.

RESULTS: 128 DC-Bead™ sessions were performed: 127 showed technical success, 120 successful stasis. Complications occurred in 7% (9/128): active bleeding into the tumour (n = 1), liver failure (n = 1), liver abscess

(n = 1) ascites (n = 3), pleural effusion (n = 1), false aneurysm (n = 1) and hypoglycaemia (n = 1). At imaging after the 1st, 2nd, 3rd and 4th–8th session, objective response (complete + partial) was 49%, 67%, 67% and 31%, progressive disease was seen in n = 11/50. Baseline diameter and differentiation significantly impacted response. Median overall survival was 25.1 months (95% [CI]: 18.3–31.9) with an estimated cumulative survival rate at one and two-to-four years of 66.7% and 45.7%, respectively.

CONCLUSION: DC-Beads™ can be safely and effectively control HCC. Survival and response rates are encouraging, complications are low. Many factors are involved in response to treatment like liver function or child state.

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Portomesenteric venous gas: Is gas distribution linked to etiology and outcome?

PURPOSE: To investigate various anatomical locations of portomesenteric venous gas detected by computed tomography (CT) and their relationship with the underlying etiology and the outcome.

METHODS: The study group consisted of 47 cases with evidence of portomesenteric venous gas detected on abdominal CT examinations, 12 cases were identified through a retrospective PACS search, 35 were prospectively included. The presence of gas at specific anatomical locations in the portomesenteric venous vasculature was assessed according to a pre-defined classification: the arcade vessels close to the bowel segments followed by segmental vessels, the superior mesenteric vein, the extra- and intrahepatic portal vein. The etiology of portomesenteric venous gas and its prognosis were assessed by review of surgical reports, histopathology and medical records. Surgery was performed on 30 patients.

RESULTS: Overall 68.1% of cases were of ischemic etiology. Gas present in the arcade vessels was the best indicator for ischemia (sensitivity 93.8%; specificity 70.0%, positive predictive value 90.9%, negative predictive value 77.8%) compared to other locations and the mere presence of portomesenteric gas independent from the location. The overall mortality rate was 53.2%. Only gas in the arcade and segmental vessels were associated with considerably higher mortality rates (65.8% and 75.0%, respectively) and acceptable frequency (occurrence in 80.9% and 59.6%, respectively).

CONCLUSIONS: The study results indicate that the presence of gas at specific anatomical locations in the portomesenteric venous system, namely the arcade and segmental vessels, may serve as strong indicator for ischemic etiology and poor prognosis in the assessment of individual cases.

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Sonographic hepatorenal ratio: A noninvasive method to diagnose nonalcoholic steatosis

PURPOSE: To evaluate the accuracy of the sonographic hepatorenal ratio (HRR) in the diagnosis and grading of nonalcoholic steatosis, using biopsy as the reference.

METHODS: Ultrasound (US) and liver biopsy were performed in 42 patients with nonalcoholic fatty liver disease. Forty healthy volunteers without steatosis at US and without risk factors for nonalcoholic fatty liver disease were also studied. The HRR was obtained by dividing the mean brightness level of region-of-interest pixels in hepatic parenchyma by that in renal parenchyma. Needle biopsy samples (hematoxylin-eosin stained) were classified as mild (5 - 33% fatty infiltration), moderate (>33 - 66%), or severe (>66%) steatosis. Spearman coefficient was used to evaluate the correlation between HRR and steatosis grade, analysis of variance for differences between subgroups,

and receiver operating characteristic curve analysis for sensitivity and specificity.

RESULTS: Significant correlation was found between HRR and histologic steatosis ($r = 0.80$, $p < 0.01$). The HRR cutoff for predicting steatosis was ≥ 1.24 (sensitivity, 92.7%; specificity, 92.5%). The mean $\pm$ SD HRRs in controls and steatosis subgroups were control 1.09 ± 0.13 , mild 1.46 ± 0.24 , moderate 1.52 ± 0.27 , severe 2.04 ± 0.3 and were significantly different from each other except between mild and moderate steatosis subgroups.

CONCLUSIONS: The HRR is a noninvasive, objective, and simple method that could be used to diagnose and grade hepatic steatosis.

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320-Detector row CT angiography for detection and evaluation of intracranial aneurysms: Comparison with conventional digital subtraction angiography

AIM: To compare the diagnostic performance of 320-detector row computed tomographic angiography (CTA) with digital subtraction angiography (DSA) for the detection and characterization of intracranial aneurysms.

MATERIALS AND METHODS: Fifty-two consecutive patients with non-traumatic subarachnoid haemorrhage (SAH) and suspected intracranial aneurysms were evaluated from January 2009 to October 2011. All underwent both 320-detector row volume CTA examination and DSA. CTA volume data were transmitted to a VITREA workstation and two physicians with experience in diagnostic imaging of the nervous system independently carried out image post-processing and assessed the results. The three-dimensional (3D) CTA and DSA images were assessed using intraoperative findings as the reference standard.

RESULTS: In 52 patients, 54 aneurysms were detected; 48 patients underwent surgery for 50

aneurysms. The overall sensitivity, specificity, and accuracy of 3D CTA were 96.3, 100, and 94.6%, respectively. Meanwhile, the overall sensitivity, specificity, and accuracy of DSA were 98.1, 98.1, and 95.1%, respectively. For aneurysms less than 3 mm, the sensitivity, specificity, and accuracy of 3D CTA were 81.8, 100, and 93.3%, respectively. The sensitivity, specificity, and accuracy of DSA for small aneurysms were 90.9, 100, and 96.2%, respectively. 3D CTA was superior to DSA in demonstrating aneurysmal calcification, parent artery, and surrounding vascular anatomy.

CONCLUSIONS: 3D CTA is a highly sensitive, specific, and non-invasive imaging method for diagnosis and evaluation of intracranial aneurysms. It also allows for precise depiction of aneurysm morphology. Therefore, 320-detector row CTA may be used as an alternative to DSA as a first-line imaging technique in patients with SAH.