

## Commentary

Acute gastrointestinal haemorrhage is an acute emergency. Identification of the source is vital to the appropriate management of this condition. Traditionally upper and lower GI endoscopy and red cell labeled nuclear medicine scans are used to find the source. This approach often fails and the next step then is conventional angiography. The availability of this technique is severely limited. With the advent of multi detector row Computerised tomography, another tool has been added to this mix. Several studies have demonstrated the efficacy of MDCT angiography in this situation. Stiener et al reinforce this and draw attention to the need for being meticulous.

Multiple sclerosis is a progressive neurological disorder of unknown etiology. The fact that it effects young adults and there is no known cure makes it a very emotive disorder. Over the years there have been several theories to its causation. The latest has been the venous obstruction theory. This has led to many thousands of venograms being carried in MS suffers. There have also been attempts to perform venoplasty to cure the condition. Some with disastrous outcomes. The MR imaging group in MS has come out very strongly against this theory.

So far brain perfusion and diffusion work in Pakistan has concentrated on their applications in cerebrovascular disease and stroke. Their utility is however far wider than this very narrow field. Price et al demonstrate another very important use of these techniques in the grading and classification of gliomas. The grade of tumour determines the cell density and the disruption of the blood brain barrier. Diffusion Weighted Imaging can predict the first and Perfusion Weighted Imaging the second. These applications will help in better management of these patients.

Fatty liver or Hepatic Steatosis is a very common finding during upper abdominal ultrasound exams. Williamson et al demonstrate that US is a good modality for moderate to severe steatosis but its performance in mild cases was not very good. This suggests that this diagnosis should be given with caution when changes are very subtle.

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## Abdominal Imaging 2011, 36:115-25

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### Acute gastrointestinal bleeding: CT angiography with multi-planar reformatting

Acute gastrointestinal bleeding is a common medical emergency, which carries a significant mortality. CT Angiography is an important non-invasive diagnostic tool, which can be used to plan subsequent endovascular or surgical management. The cases

presented demonstrate that a meticulous and systematic approach to image interpretation is necessary, in particular, to detect focal sites of contrast extravasation and small pseudoaneurysms.

## AJNR Am J Neuroradiol 2011; 32: 424-7

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### Multiple Sclerosis and Chronic Cerebrospinal Venous Insufficiency: The Neuroimaging Perspective

**CONCLUSION:** CCSVI is a sonographic construct that is poorly reproducible and questionable in terms of known pathophysiologic factors established in MS. The neuroimaging findings reviewed here do not support the CCSVI theory in MS, but rather point to a concomitant disturbance of the brain microcirculation

in patients with MS, which deserves further investigation but can be well explained by secondary vascular inflammatory changes known to occur with this disease. As a consequence, endovascular treatment of presumed vascular abnormalities in MS should be discouraged vigorously.

## AJNR 2011;32: 501-6

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### Correlation of MR Relative Cerebral Blood Volume Measurements with Cellular Density and Proliferation in High-Grade Gliomas: An Image-Guided Biopsy Study

**BACKGROUND AND PURPOSE:** As newer MR imaging techniques are used to assist with tumor grading, biopsy planning, and therapeutic response assessment, there is a need to relate the imaging characteristics to underlying pathologic processes. The aim of this study was to see how rCBV, a known marker of tumor vascularity, relates to cellular packing attenuation and cellular proliferation.

**MATERIALS AND METHODS:** Nine patients with histologically proved high-grade gliomas and 1 with a supratentorial PNET requiring an image-guided biopsy were recruited. Patients underwent a DSC study. The rCBV at the intended biopsy sites was determined by using a histogram measure to derive the mean, maximum, and 75th centile and 90th centile values. This measure was correlated with histologic markers

of the MIB-1 labeling index (as a marker of glioma cell proliferation) and the total number of neoplastic cells in a high-power field (cellular packing attenuation).

**RESULTS:** There was a good correlation between rCBV and MIB-1 by using all the measures of rCBV. The mean rCBV provided the best results ( $r = 0.66$ ,  $p < .001$ ). The only correlation with cellular packing attenuation was with the 90% centile (rCBV 90%,  $r = 0.36$ ,  $p = .03$ ). The increase in rCBV could be seen over 1 cm from the edge of enhancement in 4/10 cases, and at 2 cm in 1/10.

**CONCLUSIONS:** rCBV correlated with cellular proliferation in high-grade gliomas but not with cellular packing attenuation. The increase in rCBV extended beyond the contrast-enhancing region in 50% of our patients.

## Clinical Radiology May 2011; 66(5): 434-9

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### The use of ultrasound to diagnose hepatic steatosis in type 2 diabetes: Intra- and interobserver variability and comparison with magnetic resonance spectroscopy

**AIM:** To compare ultrasound gradings of steatosis with fat fraction (FF) on magnetic resonance spectroscopy (MRS; the non-invasive reference standard for quantification of hepatic steatosis), and evaluate inter- and intraobserver variability in the ultrasound gradings.

**MATERIALS AND METHODS:** Triple grading of hepatic ultrasound examination was performed by three independent graders on 131 people with type 2 diabetes. The stored images of 60 of these individuals were assessed twice by each grader on separate occasions. Fifty-eight patients were pre-selected on the basis of ultrasound grading (normal, indeterminate/mild steatosis, or severe steatosis) to undergo 1H-MRS. The sensitivity and specificity of the ultrasound gradings were determined with reference to MRS data, using two cut-offs of FF to define steatosis,  $\geq 9\%$  and  $\geq 6.1\%$ .

**RESULTS:** Median (intraquartile range) MRS FF (%) in the participants graded on ultrasound as normal, indeterminate/mild steatosis, and severe steatosis were 4.2 (1.2–5.7), 4.1 (3.1–8.5) and 19.4 (12.9–27.5), respectively. Using a liver FF of  $\geq 6.1\%$  on MRS to denote hepatic steatosis, the unadjusted sensitivity and specificity of ultrasound gradings (severe versus other grades of steatosis) were 71 and 100%, respectively. Interobserver agreement within one grade was observed in 79% of cases. Exact intraobserver agreement ranged from 62 to 87%.

**CONCLUSION:** Hepatic ultrasound provided a good measure of the presence of significant hepatic steatosis with good intra- and interobserver agreement. The grading of a mildly steatotic liver was less secure and, in particular, there was considerable overlap in hepatic FF with those who had a normal liver on ultrasound.