A Letter from the Radiologist

NEW MRI CONTRAST AGENT FOR BETTER CHARACTERIZATION OF LIVER LESIONS

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April, 2009— Major recent advances in MRI technology available on Olympic Radiology's new Achieva 1.5 Tesla scanner, including faster more powerful gradients, 16 channel phased array coil, and new advanced pulse sequences have resulted in dramatic improvements in image clarity. While multislice CT remains the most common modality for clinical hepatic imaging, MRI on a current, advanced capabilities system has lesion to liver contrast superior to CT without the use of ionizing radiation. The addition of new hepatocyte specific contrast agents furthers the advantage of MRI over CT.

Eovist is a gadolinium contrast for MRI that has the vascular and equilibrium phase enhancement characteristics of other gadolinium contrast agents. Because it is excreted 50% by the liver and 50% by the kidneys, it also has a delayed hepatic uptake phase by functioning hepatocytes. MRI imaging protocols with Eovist provide information concerning T2 weighted signal, and T1 weighted signal pre-contrast, post-contrast arterial phase, and post contrast equilibrium phase. An additional T1 weighted sequence 20 minutes following injection provides hepatocyte phase information not available from CT or conventional MRI imaging. Lesion conspicuity of primary or metastatic malignancy, which does not uptake the contrast, is increased as compared to uninvolved liver, which enhances. Hepatocyte uptake is also useful in characterizing benign liver lesions. For instance, focal nodular hyperplasia will demonstrate Eovist uptake due to functioning hepatocytes, as compared to hepatic adenomas, which do not.

Eovist hepatic imaging may be most useful in the following situations:

- When the presence or absence of liver metastases is crucial, such as patients contemplating hepatic resection.
- In identifying hepatocellular carcinoma in at-risk individuals.
- For the evaluation of liver lesions in children and young adults who are more sensitive to the possible adverse effects of ionizing radiation.
- Problem solving for the characterization of lesions discovered on a CT or ultrasound

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