

MONTHLY NEWSLETTER

February 2005

BREAST IMAGING DINNER LECTURE

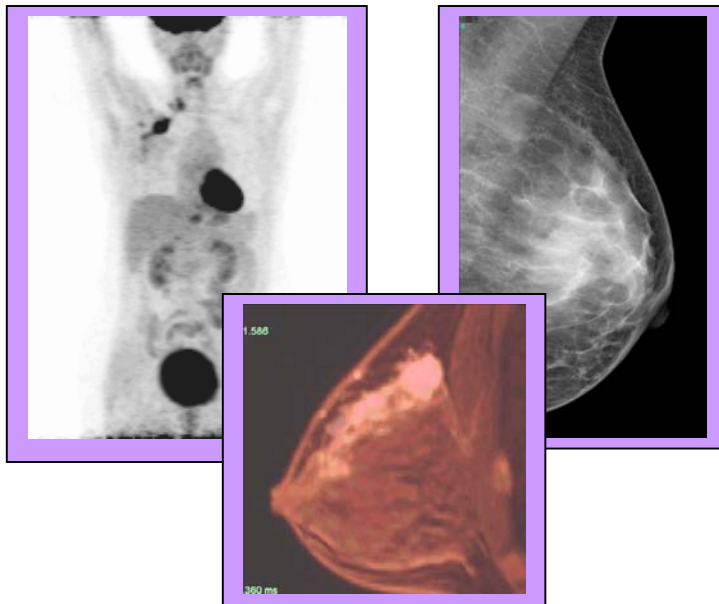
On Wednesday March 2, Main Street Radiology will present “**Updates in Breast Imaging**” at Burton & Doyle Restaurant.

The lecture will concentrate on three new imaging modalities in Breast Imaging: Digital Mammography, Breast MRI, and PET. These topics will be discussed by MSR radiologists Lai-Ming Yu, Maura Noordhoorn, and Jac Scheiner.

1 hour of category I CME credit will be awarded to participants.

Burton & Doyle is located on 661 Northern Blvd. in Great Neck. Appetizers and Sign-in will be at 6:30 pm with Dinner and Lecture starting at 7:00 p.m.

Please call Katerina or Jane at 718-428-1500 to RSVP by February 23rd.



INTERNET ACCESS UPGRADE

Referring physicians may view exams performed at Main Street Radiology through our website, www.mainstreetradiology.com. We recently completed a software upgrade for our PACS (Picture Archiving and Communication System) which has effected the PC requirements needed to utilize our system.

The upgrade was necessary to support digital radiography (X-ray), which was recently implemented at MSR. Referring physicians may now view all X-rays obtained at MSR through the internet, as well as MRI, CT, ultrasound, DEXA, interventional, nuclear medicine, and PET scans.

Although digital mammography is also available on the internet, due to the extremely large size of the files, high speed connection such as T3 or ethernet is required. DSL, cable, and T1 connections are not sufficient for digital mammography.

Minimum PC Specification:

Single Processor – 1GHz, 512K Cache
Memory – 512MB
Hard Disk Capacity – 20GB
Graphics Card – 64MB single monitor
Mouse – 2-button with scroll

Operating System

Windows 2000 or later
Internet Explorer 6.0 or higher

MSR 100% DIGITAL

In mid-January, Main Street Radiology installed digital mammography, completing the transition to a 100% digital office. Every study performed at MSR is acquired digitally, stored in PACS (Picture Archiving and Communication System), and available to the referring physician through the internet.

Main Street Radiology is also a “paperless” facility where all patient records are stored electronically. Reports can be automatically faxed or E-mailed to the referring physicians.

Our new downtown Flushing office at 136-25 37th Avenue, scheduled to open in the Spring of 2005, will also provide 100% digital services.

CASE OF THE MONTH

RENAL MRI WITH SUBTRACTION

History: 55 year old male with an incidental left renal mass seen on ultrasound, and previous allergic reaction to iodinated intravenous contrast. The patient was referred to Main Street Radiology for a renal MRI examination.

Findings: A simple cyst is seen within the right kidney, with typical signal characteristics: high signal on T2-weighted image (Figure A), low signal on T1-weighted image (Figure B), and no enhancement on the post-contrast T1-weighted image (Figure C).

At the posterior aspect of the left kidney, an atypical lesion is seen, demonstrating low signal on T2 and high signal on T1. The presence of contrast enhancement cannot be established on the post-contrast T1 image, due to the pre-existing high signal nature of the lesion. Subtraction image (Figure D) clearly demonstrates lack of contrast enhancement. These

findings are compatible with a “hyperintense” cyst, a benign finding.

Discussion: In characterizing renal lesions, it is extremely important to determine the presence or absence of contrast enhancement, to distinguish benign cysts from neoplasms.

Traditionally, CT of the kidneys performed before and after the administration of intravenous contrast has been considered the gold standard for renal mass characterization. Accurate quantitative analysis can be performed by measuring the density (Hounsfield unit) of the lesion before and after the administration of contrast. Typically, greater than 10 Hounsfield unit increase in density after contrast enhancement is only seen in neoplastic processes.

Renal MRI does not have a comparable quantitative analysis to determine contrast enhancement, and radiologists

had to rely on traditionally less accurate qualitative analysis. However a new technique involving “subtraction” imaging has increased the sensitivity of qualitative MRI analysis to 99% (*Radiology* 2004;232:373-378).

Subtraction imaging is a post-processing technique, where the pre-contrast images are digitally “subtracted” from the post-contrast images, resulting in images that accentuate contrast enhancement.

At Main Street Radiology, we routinely perform subtraction imaging for renal MRI’s. Only the most sophisticated MRI machines with latest software are capable of performing subtraction imaging.

Renal MRI is indicated in patients who need a contrast-enhanced renal CT, but has a history of renal insufficiency or allergy to iodinated contrast.

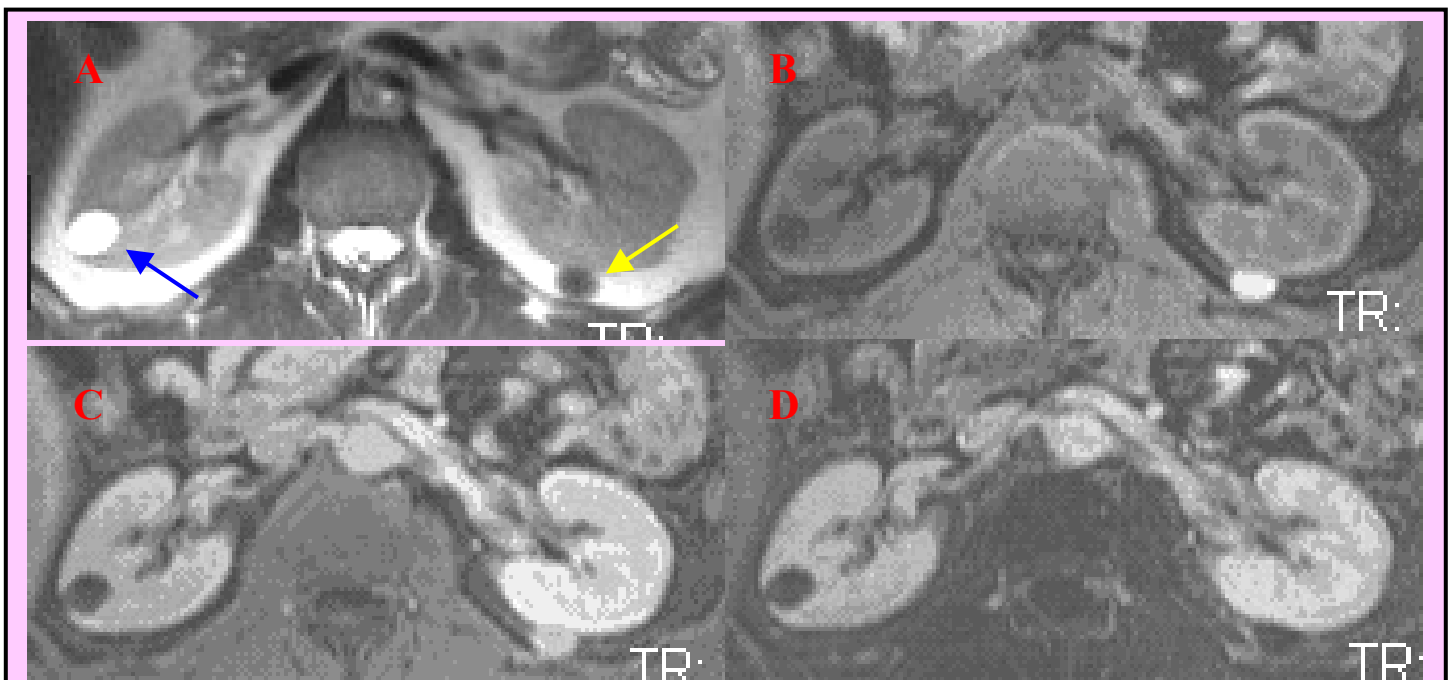


Figure A: T2-weighted. **Figure B:** T1-weighted pre-contrast. **Figure C:** Post-contrast T1. **Figure D:** Subtraction image. **Blue arrow:** simple right renal cyst. **Yellow arrow:** “hyperintense” left renal cyst.