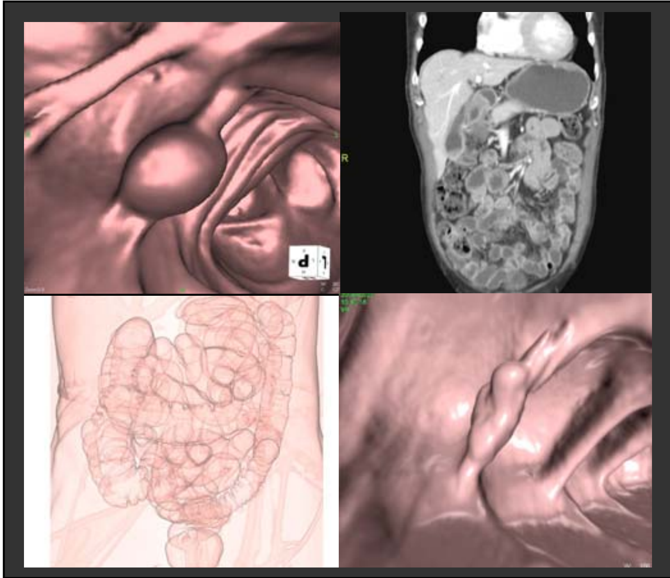
BOWEL IMAGING DINNER LECTURE

UPDATES IN VIRTUAL COLONOSCOPY AND SMALL BOWEL CT



On Thursday April 27, Main Street Radiology will present **"CT of Bowel"** at Burton & Doyle Restaurant.

Lawrence Carl, M.D., a Body-Imager at MSR will discuss the latest techniques and clinical applications of Virtual Colonoscopy and Multiplanar Small Bowel CT. Dr. Carl is the director of the 3D laboratory at Main Street Radiology.

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 Hermine at 718-428-1500 to RSVP by April 20.

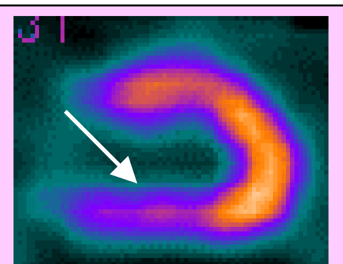
NEW NUCLEAR CARDIOLOGY IMAGING SYSTEM

With the opening of the downtown Flushing office at 136-25 37th Ave., Main Street Radiology acquired the latest hardware and software to perform nuclear medicine myocardial perfusion (stress) tests, not available at most radiology and cardiology centers. Installation of SPECT Myocardial Perfusion Imaging [MPI] with Attenuation Correction [AC] was complete in February, and we plan to image our first patients in March.

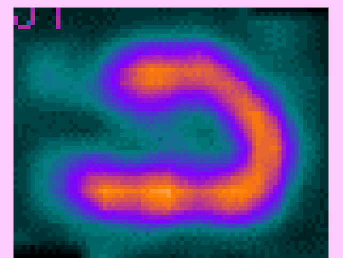
AC is the latest advance in SPECT MPI, an exam useful in the work-up of chest pain and other symptoms attributed to poor myocardial perfusion. Overlying soft tissue can decrease the perceived activity in myocardial walls on SPECT MPI scans, thus patients with large breasts or high diaphragms may have false positive defects in the anterior and inferior walls respectively.

The Philips Forte Jet Stream camera installed at our new Flushing office corrects for overlying soft tissue attenuation. This is performed using a Gadolinum-153 radioactive bar source. These bars emit small, safe amounts of radioactivity that pass through the patient to varying degrees. The amount of activity detected by the camera opposite this bar source is used to determine the amount of overlying attenuating soft tissue for which correction is needed.

All nuclear medicine studies at MSR, including stress tests and PET scans, are read exclusively by Drs. Lawrence Schechter and Jac Scheiner, who are both board certified in Nuclear Medicine as well as Diagnostic Radiology.



SPECT MPI shows a defect in the inferior wall (arrow)



SPECT MPI with AC no longer shows this defect. Thus this was due to overlying diaphragm soft tissue attenuation.

CASE OF THE MONTH

VON HIPPEL-LINDAU

History: 47 year old male with history of von Hippel-Lindau disease presents with suspicion of pheochromocytoma manifested by hypertension and elevated urine vanillylmandelic acid (VMA). The patient is status resection of bilateral adrenal pheochromocytomas. The patient was referred to Main Street Radiology for abdominal MRI to localize an extra-adrenal pheochromocytoma.

Findings: Fat suppressed T2-weighted axial image (Figure 1) shows two high signal retroperitoneal nodules. Routine T2 weighted axial image (Figure 2) shows a large solid left renal mass.

Multiphasic dynamic contrast enhanced CT of the abdomen was then performed. On the arterial phase image (Figure 3), hypervascular masses are seen in the left kidney, pancreatic head, and in the para-aortic region, most compatible with renal cell carcinoma, pancreatic islet cell tumor and extra-adrenal pheochromocytoma.

Discussion: Von Hippel-Lindau disease is an autosomal dominant disorder associated with multiple tumors including CNS hamangioblastoma, retinal angiomatosis, renal cell carcinoma, pheochromocytoma, and pancreatic islet cell tumor.

Pheochromocytoma is associated with excess catecholamine production resulting in typical symptoms including hypertension. Approximately 90% occur in the adrenal glands.

The diagnosis of extra-adrenal pheochromocytoma is difficult as the tumor may occur anywhere in the sympathetic nervous system from the neck to the sacrum. In addition, these tumors have variable appearance on CT and MRI. Most commonly, the tumors are very high signal on T2-weighted MRI. On dynamic CT scan, the tumors are usually hypervascular on the arterial phase with rapid washout of contrast on delayed phases. Nuclear medicine studies (MIBG and octreotide) have shown high specificity for pheochromocytoma but low sensitivity. Limited isolated reports in the literature are available for PET imaging of pheochromocytoma.

Reference: Blake MA, Kalra MK, Maher MM, et al. Pheochromocytoma: An Imaging Chameleon. *Radiographics* 2004;24:S87-S99.

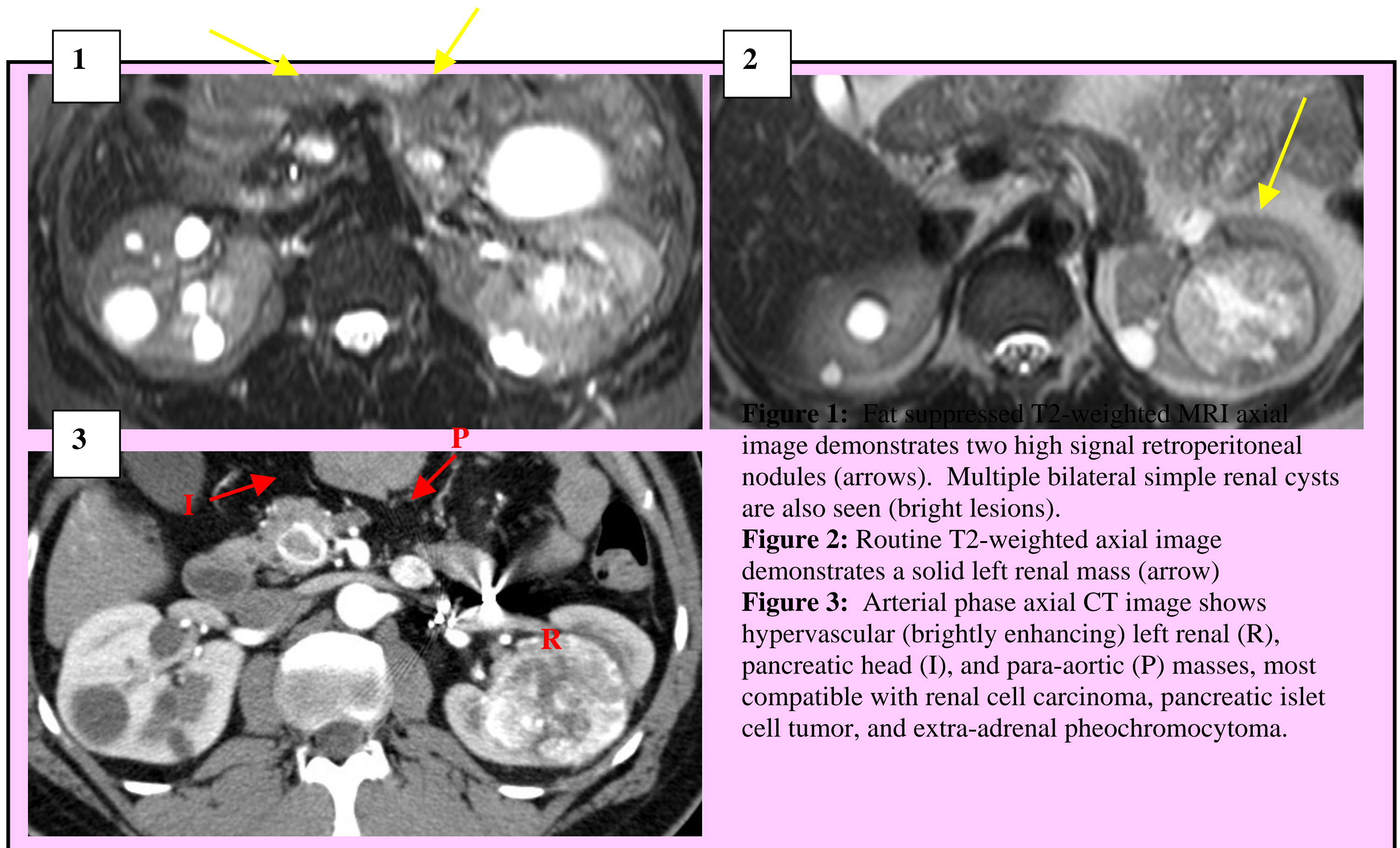


Figure 1: Fat suppressed T2-weighted MRI axial image demonstrates two high signal retroperitoneal nodules (arrows). Multiple bilateral simple renal cysts are also seen (bright lesions).
Figure 2: Routine T2-weighted axial image demonstrates a solid left renal mass (arrow)
Figure 3: Arterial phase axial CT image shows hypervascular (brightly enhancing) left renal (R), pancreatic head (I), and para-aortic (P) masses, most compatible with renal cell carcinoma, pancreatic islet cell tumor, and extra-adrenal pheochromocytoma.