MONTHLY NEWSLETTER

June 2004

ROBERT MEISELL, MD FACR (1933-2004)

A fixture in the Queens radiology community for nearly 40 years, Dr. Robert Meisell passed away on May 17.

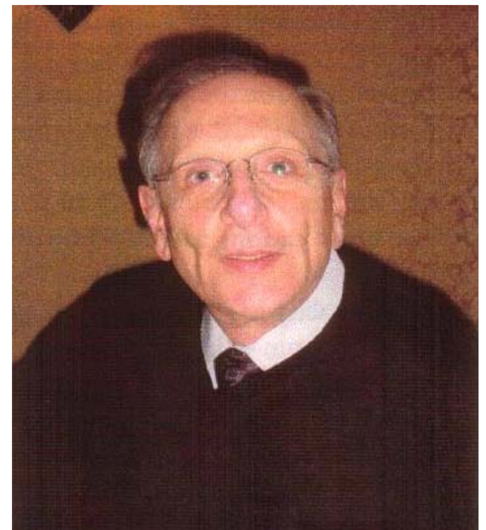
Dr. Meisell joined the staff of the New York Hospital Medical Center of Queens (formerly Booth Memorial Hospital) in 1966, and was a charter member of Radiology Associates of Main Street, which originated in 1975. In 2001, Dr. Meisell began a second career as an academic radiologist at New York Hospital-Cornell.

From 1970 to 1994, Dr Meisell held an academic appointment at NYU, and since 1994, was a Clinical Assistant Professor of Radiology at Cornell.

Among his achievements, Dr. Meisell served as Councilor to the American College of Radiology, and was a delegate to the New York State Radiological Society. Dr. Meisell was an active member of the Long Island Radiological Society, having served as Treasurer, Secretary, Vice President and President.

Dr. Meisell had a passion for learning and teaching, especially in the field of Chest Radiology, and was an active member of the Chest Radiology section at the New York Hospital-Cornell at the time of his passing.

Dr. Meisell was loved and respected by all who knew him. He was an avid skier and scuba diver, and loved music, art, and theater. His love for radiology was unequaled, and his colleagues as well as his students benefited greatly from his wisdom and knowledge. We all mourn the passing of an outstanding individual, whose dedicated service to the Queens community will not be forgotten.



IMPROVED INTERNET ACCESS OF IMAGES

Referring physicians can view images of their patients on our website, www.mainstreetradiology.com. With our new software update, a consulting physician may also view a study ordered by a different physician. To meet HIPPA regulations, the consulting physician must contact our office and obtain temporary access, by calling 428-1500 (extension "1"). As always, a physician has unlimited access to studies he/she initially ordered.

JAMA REPORT FLAWED-VIRTUAL COLONOSCOPY STUDY OUTDATED

On a recent study published in JAMA (2004;291:1713-1719), the accuracy of virtual colonoscopy was shown to be significantly inferior to conventional colonoscopy. This contradicted a recent study from the New England Journal of Medicine (2003; 349: 2191-2200), where the sensitivity was similar for virtual and conventional colonoscopies.

The major flaw with the JAMA article is that the studies were performed with outdated equipment. Images were performed with slice thickness of 2.5-5 mm, compared to 1.25-2.5 mm for the NEJM article. Also, 3D "fly-though" software was not available to the JAMA authors, which was considered crucial by the NEJM authors.

With our new 16-detector CT, at MSR-Bayside, we are performing virtual colonoscopy with 0.75 mm slices, resulting in resolution even higher than obtained by the NEJM authors. In addition, we are one of few centers in the Metropolitan area with 3D "fly-through" software.

CASE OF THE MONTH

KIENBOCK'S DISEASE

History: 56 year-old male with a history of injury to the right hand. The patient was referred to MSR-Bayside for a high-resolution wrist MRI.

Findings: The lunate bone demonstrates decreased signal intensity on the T1-weighted sequence (arrow on Figure 1), and variable heterogeneous to increased signal intensity on the proton-density fat-saturated sequence (arrow on Figure 2), compatible with osteonecrosis.

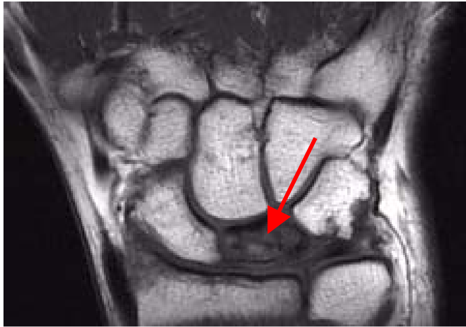


Figure1

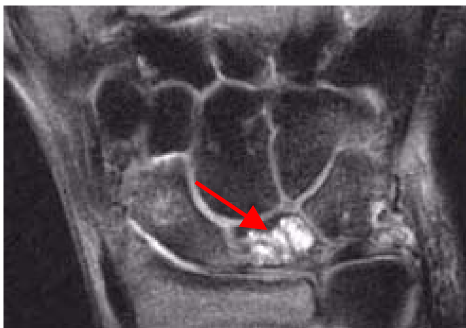


Figure 2

Discussion: Kiebock's Disease represents osteonecrosis of the lunate bone.

The most common sign/symptom is dorsal tenderness about the lunate. Clinically the patient may present with limited motion, diffuse swelling, and grip weakness. The disease is most commonly seen in patients 20-40 years of age, and the male to female ratio is 2:1.

Single or repeated trauma to the lunate bone or dislocation of the bone may impair its blood supply and cause it to become necrotic. However, the development of Kienbock's disease may not be soley attributable to extrinsic trauma. An interesting but controversial hypothesis links this condition with negative ulnar variance in individuals whose ulna projects more proximally. They may be predisposed to developing Kienbock's disease due to compression of the lunate against the irregular articular surface created by the discrepancy in radial and ulnar lengths.

Once lunate necrosis begins, an established, progressive sequence of events is set in motion. This progression is marked by lunate flattening and elongation, proximal migration of the capitate, scapholunate dissociation, and finally osteoarthritis of the radiocarpal joint. This series of changes also forms the basis for the classification of Kienbock's disease. Clinically, stage I is indistinguishable from a wrist sprain. Wrist radiographs may be completely normal, and only CT may detect a subtle linear fracture. Bone scan may show increased uptake of the radiotracer by the lunate. MRI may demonstrate the abnormality, displaying decreased signal intensity of the lunate on T1-weighted images. As the condition progresses (stage II), conventional radiographs show increased density of the lunate accompanied by some degree of flattening on the radial side of this bone. In stage III, the radiographs demonstrate marked decrease in height of the lunate and proximal migration of the capitate. Necrotic and cystic degeneration may lead to a further fragmentation and collapse. Scapholunate dissociation is a prominent feature of this stage. Stage IV is marked by almost complete disintegration of the lunate and development of radiocarpal arthritis.

MR is considered the best imaging tool. MR is superior in early detection of stage I changes including identification of fracture and marrow edema/sclerosis. MR can also be used to follow the outcome of radial shortening for revascularization of the lunate.

Merely diagnosing Kienbock's disease is not sufficient from the orthopedic point of view, rather, it is essential for the radiologist to demonstrate the integrity of the bone. The reason for this is that at an early stage of disease, in the absence of fracture or fragmentation, a revascularization procedure aimed at restoring circulation to the lunate may prevent further progression of the necrotic process or fragmentation of the lunate. Alternatives to revascularization, such as silastic arthtroplasy or, in the absence of a collapse deformity, ulnar lengthening or radial shortening, would then have to be considered.

It is crucial to obtain the highest resolution possible when imaging small joints such as elbows, wrists, and ankles. At MSR-Bayside, we have installed a high field (1.5T) magnet with dedicated surface coils providing highest quality images. Head of musculoskeletal imaging at MSR-Bayside is Dr. Anthony Italiano, who is fellowship trained in musculoskeletal imaging at New York University, where he also completed his residency and served as Chief Resident.