



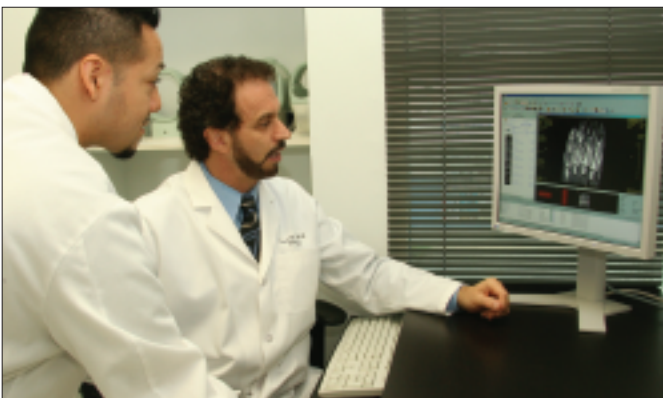
OFFICE BASED MRI – A PRACTICAL RHEUMATOLOGY OPTION

Well known rheumatologist says extremity MRI detects erosions much earlier than x-rays

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For the last 20 years, Dr. Orrin M. Troum, a board certified rheumatologist and clinical professor at the Keck School of Medicine—University of Southern California, has dedicated his career to advancing the treatment of patients suffering from rheumatoid arthritis and other inflammatory arthropathies, osteoarthritis and osteoporosis.



Dr. Troum and his technician reviewing a case on the Hologic C-Scan system

A Better Technology

Dr. Troum was the first rheumatologist in the country to use an office-based Magnetic Resonance Imaging (MRI) system for his inflammatory arthritis patients in a clinical rheumatology practice setting. “The use of a small magnet MRI scanner helps me to detect and evaluate

the progression of erosive arthritis in patients earlier than with plain radiography, and allows me to more closely follow a patient’s response to treatment,” Dr. Troum says.

Until five years ago, the standard imaging technology for rheumatoid arthritis patients was conventional radiography. With x-ray, patients could have prolonged and persistent symptoms, with little evidence of the progression of the condition appearing on images until significant erosion had occurred.

“We’ve known for over 15 years that MRI technology is much more sensitive than x-ray,” says Dr. Troum. “However, it wasn’t until a few years ago that MR imaging was truly accessible to patients with diseases like rheumatoid arthritis.

When large magnet MRI systems were used for scanning arthritis patients, positioning the patient was often extremely painful, making it difficult, if not impossible, to do the exam.”

When smaller, more affordable, office-based systems became available, Dr. Troum saw his opportunity to prove that MRI could be practically applied to inflammatory arthritis patients in an office environment.

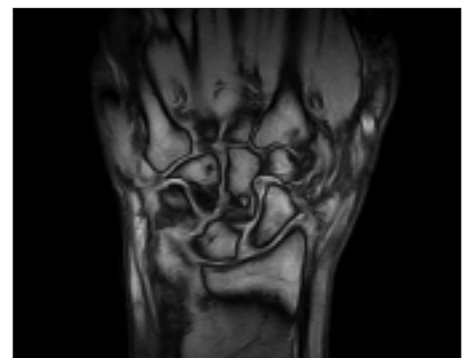
A Scientific Look at the Value of Extremity MRI

In 2002, Dr. Troum, Dr. John Crues III and three other physicians began a

study to compare the sensitivity of office-based MRI versus conventional x-ray technology for the detection of bone damage in inflammatory arthritis patients.

In the study, the physicians, including two musculoskeletal radiologists with extensive experience in reading MRI scans, evaluated 132 consecutive patients, 95% of whom had rheumatoid arthritis. The results of the study were published in 2004, in *The Journal of Rheumatology*. The paper, “Identification of Wrist and Metacarpophalangeal Joint Erosions Using a Portable Magnetic Resonance Imaging System Compared to Conventional Radiographs,” demonstrated in the largest study to date, that portable MRI technology showed superior sensitivity to bone damage compared to conventional radiography.

Dr. Troum recently completed a second study, which followed 405 patients over 2 years. Preliminary results were presented at the American College of Rheumatology meeting in 2004. Dr. Troum found that high-resolution in-office MRI, with an average follow-up



Extremity MRI is particularly effective in monitoring disease progression and treatment in patients with rheumatoid arthritis

of 8 months, detects changes in bone disease in 50% of compliant patients during aggressive treatment for inflammatory arthritis. Conventional radiography is less sensitive for detecting changes in bone erosions for this patient population in this time frame.

It's All About Quality of Life

"I want to know as early as possible if I am offering the best treatment for my patients," Dr. Troum says. "The new treatments are quite expensive—often \$1,500 a month or more. With an office-based MRI system I can easily perform follow-up MRIs at regular intervals (6-12 months). Knowing the response to treatments allows me to adjust, continue or switch the treatment when necessary. This can have a huge impact on the quality of life of my patients."

Combined with the latest pharmacological advances in treatment, such as biologic response modifying drugs, earlier detection of pre-erosive or erosive arthritis now means rheumatoid arthritis, and other inflammatory rheumatic diseases, can actually be stopped in some patients with possible healing of the lesions in others. "With my extremity MRI system, I can better identify patients who are candidates for the more aggressive therapies earlier in the course of their potentially debilitating disease."

According to Dr. Troum, office-based MRI systems have brought the treatment of inflammatory arthritis patients into the 21st century.

"When my father, Nathan F. Troum, MD started practicing medicine over 55 years ago, there were very few available treatments for inflammatory arthritis," says Troum. "Aspirin was used in high doses, cortisone had recently been discovered, and gold shots were given intramuscularly. Over the past 20-30 years, we have used Disease Modifying Anti-Rheumatic Drugs (DMARDs), such as methotrexate, which could slow the progression of rheumatoid arthritis. Today a whole new class of medication,

Biologic Response Modifying (BRM) drugs, are designed to halt the destruction of inflammatory arthritis. We need to combine our usual clinical assessments; physical exam, global health assessments (physician and patient), laboratory etc. and use improved imaging techniques to take better advantage of these potent medications. Extremity MRI is that better technology."

Dr. Troum believes that because of the ease of office-based MR imaging, rheumatologists will be able to assess their patients the same way that oncologists, orthopedists, and infectious disease physicians have: by relying on superior MR imaging. "I predict that MRI will be how inflammatory arthritis patients are imaged in the future," Dr. Troum says.

One of the advantages of an office-based MRI, such as the Hologic C-Scan, is that patient follow-up is much easier than in the past. "Rheumatologists should consider imaging their patients every 6-12 months to evaluate progression of disease and/or response to treatment," says Dr. Troum. "Extremity MRI is much more sensitive for detecting changes in structural abnormalities in these patients than plain radiography."

The Hologic C-Scan — The Latest in Extremity MRI

"The Hologic C-Scan can image more, with a larger field of view, than the other systems I've seen," Dr. Troum says. "I can better detect inflammation, synovitis, osteitis and erosions, and the C-Scan has the distinct advantage of being able to image other structures, such as tendons, ligaments, as well as other joints, including the elbow, ankle and knee."

The C-Scan is not the only piece of Hologic equipment used by Dr. Troum in his practice. He also relies on a Hologic QDR-4500™ bone densitometry system with High Definition Vertebral Assessment (IVA-HD™) capability. Says Troum, "Vertebral assessment allows me to check for compression fractures of the

vertebrae, which are most common in osteoporotic patients. And it gives me a high resolution side view of the thoracic vertebrae without the need for moving the patient."

For Dr. Troum working with Hologic has been a professional pleasure. "They have been incredibly reliable and responsive, and have provided excellent support in my private practice setting."



Positioning patients on an extremity MRI system is less painful than on a large magnet system

FOR MORE INFORMATION

- Extremity MRI
- Osteoporosis Assessment
- C-arm Imaging

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