There is much good news concerning care for patients with arthritis and arthropathies, and radiology’s role is expanding in support of these advances. Today, imaging helps identify causes of pain, provides pain relief, improves the accuracy of surgery and is vital in evaluating the progress of patients undergoing promising new drug treatments. Perhaps one of our most important roles is the contribution magnetic resonance imaging (MRI) makes, by virtue of its extreme sensitivity, for patients with systemic arthropathies, such as rheumatoid arthritis, systemic lupus erythematosus, psoriatic arthritis and ankylosing spondylitis. MRI is the most accurate imaging tool available in detecting active erosive/inflammatory changes.

Current treatments for arthritis have changed significantly. Drugs such as Enbrel used to halt systemic disease represent a significant improvement over prior therapies. Unfortunately, serious side effects exist and the drugs are expensive. Therefore, it is important to confirm the presence and extent of disease, as well as have a sensitive tool to exclude progression and/or response. Certainly conventional imaging has played an important role and continues to do so. However, there is no doubt that MRI provides the most comprehensive baseline and, when needed, will best determine response.

Power of MRI is tapped when cause is in question
MRI has many other roles as well. A common clinical complaint is low back/radiating pain or hip/groin pain. Conventional radiographic images can confirm a diagnosis of degenerative hip disease in many of these patients. Unfortunately, a number of patients have no clear-cut cause of pain on initial evaluation. For that subset of individuals, MRI can provide an enormous amount of information.

A number of diseases can be present without clear findings on physical exam or initial radiographs. These include avascular necrosis, tendinosis, insufficiency fractures or tumor replacement. Also, in the patient with known trauma and suspected hip fracture, MRI can provide an accurate diagnosis when plain films are normal and preclude the sequela of delayed diagnosis. Prompt intervention will result in optimizing treatment, even in the worst-case scenario of tumor.

For the physician whose patient complains of insidious hip pain, an MRI can provide an accurate diagnosis that cannot be achieved with conventional images, especially when the true cause of the pain has nothing to do with the bones. Gluteal tendonosis has largely been a clinical diagnosis in the past. It can be particularly debilitating, often with a nocturnal component.

The clinical presentation, however, is often atypical. This process is common in females in their late 40s and 50s. The patient may note hip pain, but may also have a lower back pain with a “pseudoradicular” component or groin pain. Often lumbar disc disease is a mistaken initial diagnosis. The findings on pelvic or hip MRI can be striking.

In addition to making a diagnosis, the role of imaging in gluteal tendonosis (frequently associated with trochanteric bursitis and often called the rotator cuff of the hip) can be therapeutic. In patients who fail oral anti-
inflammatory treatment and who may lack usual anatomic landmarks necessary for injections on a clinical basis, ultrasound or fluoroscopic-guided steroid injections can provide dramatic relief.

Finally, imaging may not always provide a diagnosis or cause of the patient’s symptoms. However, in those with long-standing pain, it can provide a high level of comfort in that many of the worrisome causes of pain have been eliminated and may allow patients to tolerate the pain in a more reassured fashion. Although MRI is a fantastic tool, it is not always the best imaging examination for a patient. I spend a significant amount of time talking to doctors and patients, explaining why an MRI may not help in certain instances.

**Image-guided injections play therapeutic and diagnostic roles**

We have other valuable modalities to help patients, and one that is playing an increasingly greater role is fluoroscopic-guided intra-articular injection of long-acting corticosteroids for patients suffering from post-traumatic osteoarthritis and other degenerative arthropathies. For joints that are deep or difficult to approach, such as the hip or foot, we can provide the necessary precision to ensure the injection is effective.

In addition to therapeutic injections, image-guided joint injections can also be diagnostic. For those who have failed conservative treatment of anarthritic joint, surgical fusion may be a valid option. Obviously, if one is to have a successful outcome, the correct joint must be fused.

In complex cases, such as the foot where there are numerous small joints, a diagnostic injection can be performed. After using fluoroscopy to localize the joint suspected, contrast is injected to document the location. Subsequently, either anesthetic and/or corticosteroid is infused. Pain relief with this type of injection can be a positive predictor for patients who are more likely to have a successful operative outcome.

It’s good to see developments in radiology working alongside the exciting advances in the diagnosis and treatment of arthritis and arthropathies. Today we no longer have to sit by as these diseases progress; we can help prevent many of them and improve the treatment of many others. Improvements in technology have impacted radiology as much as, if not more than, any other field of medicine.