Editorials

Evidence Against the Routine Use of MRI for Nonoperative Treatment of Chronic Orthopedic Conditions

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Published online August 28, 2020.

The number of middle-aged and older patients presenting with chronic (i.e., longer than two or three months) back, shoulder, and knee pain will continue to increase with the aging population. Assessing chronic pain can be difficult, and magnetic resonance imaging (MRI) is commonly used to aid in diagnosis and guide treatment. Patients may request an MRI, and some orthopedists require the results before accepting a referral.

It is often assumed that an MRI result will show the cause of a patient's pain and that correcting the pathology can lead to better outcomes. An MRI may show the cause of pain after a traumatic event that causes significant pathology, such as a knee injury causing a large, displaced meniscus tear. However, for chronic pain in older patients who have not had a significant trauma, evidence suggests that the pain may be unrelated to MRI findings and that conditions previously treated with surgery (e.g., herniated disk, degenerative meniscal tears, degenerative rotator cuff tears) can be effectively treated with time, physical therapy, and home exercises.

Abnormal MRI findings are common in asymptomatic individuals, especially as they age. These findings include disk degeneration, protrusions, and annular tears in the back; rotator cuff and labral tears in the shoulder; and meniscal tears in the knee.[1-5] The high prevalence of degenerative pathology in the MRI's of asymptomatic individuals dispels the assumption that these findings are responsible for chronic pain.

Studies have shown that most middle-aged and older patients with MRI findings that previously were considered to be operative can improve with conservative management. Patients with back pain and a disk herniation shown on MRI can be successfully treated with an active rehabilitation program, even if they have sciatica.[6,7] In fact, disk herniations generally decrease in size with time.[8] Chronic rotator cuff and SLAP (superior labrum anterior to posterior) tears can be successfully treated with physical therapy and an exercise program that focus on scapular stabilization.[9-12] Older patients with degenerative meniscal tears can be treated nonoperatively with quadriceps and hip abductor strengthening exercises.[13]

Recent studies have shown that subacromial decompression and partial meniscectomy are no better than placebo shoulder or knee arthroscopy in treating impingement syndrome and degenerative meniscal tears, respectively.[14-16] Therefore, outcomes are the same whether or not the pathology is corrected.

For most cases of chronic back, shoulder, or knee pain, MRI is not needed because nonoperative care is usually successful, despite the MRI findings. An abnormal MRI result may make it more challenging to treat a patient nonoperatively when it is assumed that surgery is needed to fix the pathology, even though the abnormal finding may be unrelated to the pain. Placebo-controlled studies suggest that there is a psychological component to recovery, and the primary care physician can play a critical role in fostering a positive mindset for active patient participation. An MRI is generally not needed until at least a few months of rehabilitation are unsuccessful and only if surgery is being considered. Also, MRI is usually not indicated in the setting of arthritis, especially for arthritis in the knee, because weight-bearing radiography is preferred.[17]

There are cases when MRI is justified expeditiously, such as when a chronic infection or a tumor is suspected. Significant back pain associated with clinical evidence of spinal stenosis or radiculopathy with neurologic findings may warrant an early MRI referral. For the knee and shoulder, a more expeditious MRI may be helpful to rule out surgical pathology in a patient with a prior traumatic injury who is apprehensive about attempting physical therapy.[17]

Physicians should consider the ramifications before ordering an MRI in the setting of chronic pain. An MRI that is not indicated can lead to a procedure that is not necessary as both patient and physician focus on the abnormal study finding. Most patients improve with conservative management that requires active involvement. Ordering MRIs only when indicated improves outcomes, reduces complications, and decreases treatment costs.

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The author would like to thank Brendan Martin, BA, for research assistance and input regarding the editorial content.

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Author disclosure: No relevant financial affiliations.

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