Editorial Commentary: Routine Preoperative Magnetic Resonance Imaging for Hip Arthroscopy Is Wasting Health Care Dollars and Delaying Surgical Intervention: Decision Making Should Be at the Discretion of the Health Care Provider Not Mandated by Health Care Insurers

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Abstract: Making an accurate preoperative diagnosis is critical to optimizing outcomes after hip arthroscopy. A detailed history, thorough physical examination, imaging studies, and diagnostic injections must all be considered in the decision-making process. In today's health care climate, it is imperative to obtain essential and indicated preoperative information while being mindful of health care dollars. Magnetic resonance imaging (MRI) of the hip has been shown to be a highly sensitive modality for hip and pelvis disorders. However, it is critical to recognize that acetabular labral tears and other hip pathology are highly prevalent in an asymptomatic young adult population. There are certainly situations when an MRI should be obtained (suspected arthritic symptoms, avascular necrosis, synovial disorders, uncommon osseous tumors); however, these patients generally present with atypical symptoms. In addition, obtaining an MRI can delay surgical intervention, which has been shown to lead to inferior outcomes in prior studies. MRI is not imperative when patients present with typical intermittent, deep anterior, lateral, groin pain with prolonged sitting, twisting and pivoting, and transitioning from sitting to standing. The typical physical examination includes positive hip impingement testing (FADIR / anterior impingement test) that recreates the patients presenting complaints. Appropriate imaging includes plain radiographs revealing adequate acetabular coverage (not significantly dysplastic) or acetabular overcoverage (pincer-type femoracetabular impingement), cam-type femoracetabular impingement, and well-maintained joint space on all views, including a false profile radiograph to further evaluate the anterior joint space. Finally, a diagnostic injection can be invaluable to further confirm the hip joint proper as the source of pain. If all of the above criteria are met, I strongly believe an MRI is unlikely to alter the surgical decision-making process. In the end, the treating clinician should determine when an MRI is necessary based on the presenting symptoms and examination, rather than insurers applying a blanket requirement for preauthorization. This physician autonomy would ultimately lead to more efficient and cost-effective patient care. Medicine is an art, and unjustified handcuffing of the artist without evidence could result in inferior results.

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Making an accurate diagnosis is critical in order to optimize outcomes after arthroscopic hip procedures.[1-3] There are a number of factors that must be considered when making the diagnosis. An accurate history and physical examination, in my experience, constitute the most critical portion of this work-up.[2,3] This is followed by plain radiographs which, when comprehensive, are extremely accurate with regard to defining the ideal hip morphology and a lack of degenerative changes that optimize outcomes after hip arthroscopy.[1-3] Magnetic resonance imaging (MRI) is an extremely powerful and sensitive tool when used appropriately. On the other hand, relying too heavily on the MRI results can lead to treating pathology that is not consistent with the presenting symptoms secondary

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The author reports the following potential conflicts of interest or sources of funding: C.M.L. reports consulting fees for Smith & Nephew and Responsive Arthroscopy *and stock or stock options from* Responsive Arthroscopy. *Full ICMJE author disclosure forms are available for this article online, as supplementary material.*

0749-8063/22546/$36.00
https://doi.org/10.1016/j.arthro.2022.04.009

to the high prevalence of labral tears and other pathology seen in asymptomatic young patients.[4-8]

In "Preoperative Magnetic Resonance Imaging Offers Questionable Clinical Utility, Delays Time to Hip Arthroscopy, and Lacks Cost Effectiveness in Patients Aged 40 or Under With Femoroacetabular Impingement Syndrome: A Retrospective 5-Year Analysis",[1] Ramkumar, Helm, Berrier, Vega, Yalcin, Kunze, Harris, and Nwachukwu evaluated consecutive patients under the age of 40 years that underwent primary arthroscopic femoracetabular impingement (FAI) correction.[1] Patients were stratified by those that presented with ($n = 934$) versus without ($n = 198$) a preoperative MRI and whether the surgical plans were altered by obtaining an MRI in the latter group.[1] Surgical plans for the non-MRI group were determined on the basis of the presenting history, physical examination, and plain radiographs.[1] In fact, none of the 198 patients that presented without an MRI had their surgical plans changed as a result of the MRI that was subsequently obtained.[1] MRIs revealed an anterosuperior labral tear for all patients in both groups that was repaired intraoperatively.[1] Those patients that presented without a preoperative MRI had a significant delay in the time to surgical management, yet without significant differences in patient-related outcome measures compared to those that presented with a preoperative MRI.[1] In fact, a prior study by some of the authors in the current study reported that a delay in surgical management negatively impacted patient-related outcome measures.[9]

This is one of those studies that further confirms my thoughts that I have expressed at national and international meetings based on more than 20 years of hip arthroscopy experience and a sprinkling of non-evidence-based intuition. I applaud the authors for putting in the hard work and asking a question that is extremely valid, yet controversial on some fronts. A number of my colleagues and I have previously published our recommended clinical work in order to achieve an accurate diagnosis and effective treatment strategy for patients presenting with hip-related symptoms.[2,3] We reported on 998 consecutive patients presenting with hip-related pain to 2 hip preservation surgeons.[2] Fifty-seven percent of those patients were determined to have intra-articular hip-related symptoms based on history, physical examination, diagnostic injections, and plain radiographs, which was confirmed with hip arthroscopy.[2] This study further confirmed that this systematic evaluation, which did not rely heavily on MRI findings, was effective for identifying a diagnosis and appropriate treatment for these patients.[2]

There are a number of key points to consider regarding the necessity of a preoperative MRI. I would argue that it is not imperative to have an MRI when patients present with typical symptoms and findings. This would include those that have intermittent, deep anterior, lateral, groin pain with prolonged sitting, twisting and pivoting, and transitioning from sitting to standing. The typical physical examination would include positive hip impingement testing (FADIR / anterior impingement test) that recreates the patients' complaints of pain. Appropriate imaging includes plain radiographs revealing adequate acetabular coverage (not significantly dysplastic) or acetabular overcoverage (pincer-type FAI), cam-type FAI, and well-maintained joint space on all views, including a false profile radiograph to further evaluate the anterior joint space. Finally, a diagnostic injection can be invaluable to further confirm the hip joint proper as the source of pain. If all of the above criteria are met, I strongly believe an MRI is unlikely to alter the surgical decision-making process, and this current study[1] provides the evidence. On the other hand, some patients present with atypical findings that should lead the clinician to consider an MRI. These might include those with predominant posterior-related pain, constant aching pain at rest, pain that wakes the patient up at night, severe disability with inability to walk for any distance, the need for narcotic pain medication, requiring assisted devices such as a cane, crutches, or walker, and severe irritability with attempts at any range of motion or provocative testing of the hip joint. These atypical symptoms might be more consistent with advancing degenerative changes, inflammatory arthritis, proliferative synovial disorders (PVNS, synovial chondromatosis), avascular necrosis, or rare benign (osteoid osteomy) or aggressive tumors about the hip and pelvis.

Another key point regarding MRI, is the highly sensitive nature of this modality, which is likely to reveal pathology that might not otherwise be an etiology for the patients presenting symptoms. There are a number of studies that show a high prevalence of MRI documented intra-articular hip pathology and, more specifically, labral tears, in asymptomatic volunteers and patients.[4-8] One study found a prevalence of labral and chondral abnormalities of 57% in asymptomatic volunteers versus 80% in symptomatic patients.[4] Another study reported a >80% prevalence of MRI-documented labral tears in asymptomatic volunteers.[8] Regarding an athletic population, one study reported a 64% prevalence of MRI intra-articular hip pathology in asymptomatic collegiate and professional hockey players.[5] Another study looking at asymptomatic professional rugby and ballet dancers reported an 87% MRI prevalence of labral tears.[6] Finally, a systematic review and meta-analysis evaluated the prevalence of MRI defined intra-articular hip pathologies in people with and without pain.[7] The prevalence of MRI documented labral tears in 29 studies was 62% in symptomatic and 54% in asymptomatic individuals.[7]

This study provides a concrete foundation for the framework that I have been assimilating in my mind for more than 2 decades. An MRI should be obtained to better define the clinical picture when necessary rather than be mandated by insurers or simply the result of a knee jerk response by providers. We should be able to practice medicine in a thorough, evidence-based, and independent manner while being mindful of health care costs. Ultimately, physicians should rely on the art of medicine and physical examination skills to determine when surgical management and or an MRI is indicated for patients presenting with hip-related issues.

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