

Editorial Commentary: Meniscal Tears or Meniscal Aging—That Is the Question



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Abstract: Meniscal tears constitute one of the most common pathologies in sports medicine. Although frequently grouped by shape, location, and size for didactic purposes, considering them according to their cause is probably the single most important factor to predict their behavior and prognosis. For instance, an acute traumatic tear and a degenerative tear of the meniscus are located on opposite ends of the spectrum of the meniscal pathology (which is comparable to focal chondral defects and osteoarthritis). For this reason, surgically addressing a non-obstructive degenerative meniscus does not always address the cause of the problem (inherent catabolic state) or the character of the symptoms (due to concomitant osteoarthritis or overload), and therefore, outcomes have been reported to be unpredictable. Of note, several recent randomized clinical trials allowed for a single-way crossover, which could act as a major confounder related to patient recruitment and expectation bias. Considering these thoughts along with the associated media coverage, there is a global trend to treat degenerative tears with a more conservative approach. Despite this, the most appropriate treatment for patients with symptomatic degenerative tears for which a trial of conservative measures failed is yet to be determined.

See related article on page 1152

Meniscal tears are reported as the most common pathology of the knee, with a mean annual incidence of 66 per 100,000.¹ For didactic purposes, meniscal tears are usually clustered according to their shape, location, and size. Nevertheless, classifying them according to their cause is probably the single most important factor to predict their behavior and prognosis. For instance, an acute traumatic tear and a degenerative tear of the meniscus are located on opposite ends of the spectrum of meniscal pathology (which is comparable to focal chondral defects and osteoarthritis). To illustrate this concept, Sofu et al.² reported that arthroscopic partial meniscectomy performed for acute traumatic medial meniscal tears leading to mechanical symptoms in patients older than 60 years resulted in improved outcomes. This clearly exemplifies that the nature of the tear and not the

age of the individual is what should dictate the treatment.³⁻⁷

In the article “Are Orthopaedic Surgeons Performing Fewer Arthroscopic Partial Meniscectomies in Patients Greater Than 50 Years Old? A National Database Study,” Essilfie, Kang, Mayer, Trasolini, Alluri, and Weber⁸ performed a database analysis to identify surgical procedures to address degenerative meniscal tears using the *International Classification of Diseases, Ninth Revision* codes and Current Procedural Terminology codes. A linear regression analysis was performed, and Essilfie et al. found that despite a significant increase in partial meniscectomies from 2007 to 2010 (55.8%), the trend from 2010 to 2015 showed a decrease in this procedure. This decrease materialized at a rate of 7.7% per year, for a total of 71.7% at the end of the study period. This seems to be in line with recently published data such as the national registries from Finland and Sweden, where the incidence of arthroscopies for degenerative knee disease significantly declined after 2008.⁹

Khan et al.¹⁰ performed a systematic review with a meta-analysis concluding that there is moderate evidence to suggest that there is no benefit to arthroscopic meniscal debridement for degenerative meniscal tears in comparison with nonoperative or sham treatments in middle-aged patients with mild or no concomitant osteoarthritis and that a trial of

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nonoperative management should be the first-line treatment for such patients. More recently, van de Graaf et al.¹¹ performed a multicenter, randomized clinical trial that was conducted in 9 hospitals. Among 321 patients with nonobstructive meniscal tears, physical therapy showed comparable outcomes to arthroscopic partial meniscectomies for improving patient-reported knee function over a 24-month follow-up period.¹¹ Nonetheless, as stated by Essilfie et al.⁸ in their article, the findings of these types of studies have undergone intense scrutiny in the orthopaedic community, with several peer reviewers pointing out potentially fatal flaws in the methodology of these studies. Probably one of the most highlighted flaws is the large crossover rate from the nonoperative group to the operative group. To this point, Lubowitz et al.¹² suggested that this sole methodologic bias can confound the results of randomized clinical trials, making interpretation of the results challenging. Most concerning is that when a crossover from nonsurgical to surgical treatment is an option for patients at the time of enrollment, they are not truly equipoised regarding the treatment to which they are randomized and expectation bias is affected; thus, many studies have shown that patients who do cross over into the surgical arm improve with that treatment. Even more challenging is our inability to separate out clinical symptoms that are presumably a result of a meniscal tear versus those that are a result of concomitant osteoarthritis. Similarly, Lamplot and Brophy¹³ highlighted in their systematic review that there can also be a selection bias in these types of studies. They concluded that patients with symptomatic meniscal tears and degenerative changes in the knee can benefit from arthroscopic meniscectomy, particularly if the degenerative changes are mild.¹³

To complicate this matter even more, mechanical knee symptoms were historically a well-accepted indication to surgically address meniscal pathology. However, it has recently been suggested that patient-reported mechanical symptoms were equally common irrespective of the presence or absence of meniscal tearing in patients undergoing arthroscopy for suspicion of a meniscal tear, which raises a concern regarding the real value of this clinical finding.¹⁴ Furthermore, Hare et al.¹⁵ studied middle-aged patients (aged 35-65 years) with a degenerative medial meniscal tear who reported symptoms commonly associated with knee osteoarthritis. Frequent knee pain, the presence of lack of confidence in the knee, and clicking did not distinguish those with a meniscal tear alone from those with early radiographic knee osteoarthritis. Even more troubling is the fact that osteoarthritis and a meniscal tear often coexist at the time of clinical presentation, and determining which is the dominant pain generator can be difficult at best. Thus, the authors suggested that these

findings support the notion that symptoms reported by patients with a degenerative meniscal tear represent early signs of knee osteoarthritis at times. Clinically, we know that when patients are asked whether they have mechanical symptoms or clicking in the knee, they have difficulty differentiating those signs or symptoms from what many normal knees will routinely show with findings of crepitus that have little correlation with intra-articular pathology.

For the aforementioned reasons, the real value of arthroscopic surgery as a second or even third line of treatment for degenerative meniscal tears refractory to physical therapy, anti-inflammatory medications, and injections remains to be determined because patients might not be satisfied with the outcome of conservative measures. Age cutoff points are clearly not a solution, and patient symptoms and clinical suspicion remain the gold standard to define the correct treatment for a patient. Patients with an acute traumatic tear with true, intermittent, consistent mechanical symptoms might benefit from an arthroscopic procedure early in the process regardless of their age, and patients with an insidious onset of inflammatory symptoms can alternatively be initially treated conservatively especially in the presence of osteoarthritis. In cases in which nonsurgical measures fail for a reasonable amount of time, a decision should be made with the patient, proposing all the available options from that point on, setting realistic expectations, and determining which is the best approach for each particular case. Most important, educating patients—when they have exhausted all traditional nonsurgical measures (passage of time, physical therapy, injections, anti-inflammatories)—that the anticipated outcome of surgery will often depend on many variables and that the presence of a meniscal tear and the presence of osteoarthritis represent only 2 of the more important variables. Alignment, radiographic grading of osteoarthritis, body mass index, demand level, and expectations constitute additional factors to take into consideration. A full discussion to this end is critical at that juncture to maximize consensual decision making between the patient and treating physician to optimize clinical outcomes.

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