Editorial

Editorial: Appropriate Use? Guidelines on Arthroscopic Surgery for Degenerative Meniscus Tears Need Updating

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The evidence-based clinical practice guidelines and appropriate-use criteria created by the American Academy of Orthopaedic Surgeons (AAOS) can help providers improve care quality, and the online tools that accompany these guidelines facilitate informed decision-making. I find the online tools associated with the appropriate-use criteria especially helpful when I walk patients through complex decisions; I

frequently turn to the one on prophylactic antibiotic use in patients who have undergone arthroplasty [2].

Sometimes, though, the best-available evidence results in recommendations that are at odds with common practice patterns. When that occurs, we should feel uneasy; high-quality evidence generally is more reliable than are our subjective perceptions. One of my proudest moments as a member of the AAOS was when the Academy's clinical practice guideline on nonsurgical treatments of arthritis followed the evidence and gave a four-star (strong evidence) recommendation against viscosupplementation for knee arthritis [10], despite what must have been tremendous pressure to do otherwise.

Currently, however, the Academy's guidelines offer an "inconclusive" recommendation about arthroscopic partial meniscectomy in patients with osteoarthritis of the knee [4]. The appropriate-use criteria document associated with the guidelines considers hundreds of scenarios involving patients with knee arthritis, and suggests that arthroscopic surgery is appropriate or may be appropriate in

about half of them [6]. The AAOS provides a convenient online tool [3] for surgeons to use when considering this procedure among other possible options. This tool indicates that arthroscopic knee surgery remains on the menu as a potential option for a host of now-questionable indications, including the treatment of young or elderly patients with severe, multiple-compartment arthritis.

Although that guideline and its accompanying appropriate-use criteria are only 4 years old, they need to be updated. Perhaps the evidence in 2013 supported those sorts of recommendations; it certainly doesn't now. There even are reasonable questions about whether meniscectomy in middle-aged patients in the absence of arthritis is effective. Currently, data from the best randomized trials and trials of other designs suggests the answer may be no [9, 11, 14, 19–23, 25, 26]. Until the AAOS guidelines are updated, it is incumbent upon orthopaedic surgeons to consider carefully what we know on this topic, and make surgical decisions accordingly.

This is a big-ticket item, and one that can harm patients. In 2006, nearly

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Editorial

500,000 patients underwent arthroscopic meniscectomy in the United States [13]; this number may be 700,000 now [15]. Usage of arthroscopy among patients with knee arthritis—the group where the evidence speaks strongest against its use—does not appear to be decreasing [1] even in a specific, well-defined population where applicable high-quality research suggested it should not be performed [20]. While most orthopaedic surgeons consider arthroscopic knee surgery a relatively low-risk outpatient procedure, research that looks at its aggregate advantages and risks suggests otherwise. A meta-analysis considering both benefits and harms found the latter far outweigh the former [24]. And an intervention that is questionably effective (or ineffective) is never going to be cost-effective. A recent well-performed cost-effectiveness analysis found arthroscopic surgery for patients with arthritis to be economically unattractive [18].

Unlike so many areas of orthopaedic surgery, we cannot look at the evidence base here and say “if only we had some randomized trials.” A recent meta-analysis [19] identified nine randomized trials, of which six are directly relevant to this conversation. The authors concluded that “meniscectomy is not superior to nonoperative therapy as the initial

treatment for patients with a painful knee and MRI evidence of meniscal tear in a degenerative knee.” Two years earlier, a meta-analysis from the McMaster University group offered substantially the same finding [12]. This is especially important considering the high frequency with which meniscus tears appear in arthritic knees [5], and the fact that they appear difficult or impossible to correlate with symptoms [5, 7]. Perhaps more importantly, randomized-trial data continue to accrue, and the news is not good for arthroscopy fans. The latest randomized study in patients with degenerative meniscus tears but little or no arthritis found surgery to be no better than nonoperative management [14], and a recent, robust reanalysis of patients from an earlier randomized trial evaluating the influence of “mechanical symptoms” in patients with degenerative meniscus tears but no arthritis was similarly critical [21].

To my knowledge, only one randomized trial has had better luck with knee arthroscopy [8] than the numerous others that showed little or no benefit from it [9, 11, 14, 20, 21, 23, 25, 26]. The favorable study was the weakest of the bunch, as it suffered from a mixed bag of diagnoses (and little documentation confirming those diagnoses), only a year of followup, substantial crossover, a minimalist approach to nonsurgical management,

and, importantly, only a modest effect size favoring surgery. This is insufficient justification to support hundreds of thousands of interventions a year, particularly when weighed against the far-stronger and more-voluminous evidence against it.

One can posit a number of reasons why a treatment so lacking in robust evidence might persist: few viable alternatives, a common perception that it works, and a host of incentives tilting surgeons towards surgery in “close call” situations may top that list [17]. But the lack of an effective intervention should not cause us to use an ineffective one [16], particularly if it involves surgery. And perceptions in practice are too easily fooled; our own experiences—colored especially by loss to followup and assessor bias (we grade our own work, after all)—will inevitably inflate the apparent benefits of any intervention we perform. Seemingly each new Level-I trial generates a Level-V reaction outlining surgeon-based perceptions about why the data don’t apply. And to those who believe that randomized trials do not realistically reflect clinical practice, I recommend a recent prospective pragmatic trial of more than 900 patients [23]. It found—again, contrary to common perception—that patients with degenerative meniscus tears and “mechanical symptoms” were less likely to be satisfied (and did no better

Editorial

on validated patient-reported outcomes scales) than those without catching or locking.

Surgeons must either demonstrate that our interventions are effective, or stop using them. Where this particular intervention is concerned, we can no longer suggest that the many high-quality studies showing inefficacy somehow don't apply. It is time to start digesting the available high-quality evidence on this topic and practicing as though it matters.

An updated set of AAOS guidelines and an accompanying online set of appropriate-use criteria tools would be a fine step in that direction. Until those become available, surgeons should be extremely selective in offering arthroscopic surgery to patients with degenerative meniscus tears in the absence of arthritis, and we probably should not use this procedure at all in patients with visible arthritic changes in the knee.

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Editorial

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