

## EDITORIALS

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## Arthroscopic surgery for knee pain

A highly questionable practice without supporting evidence of even moderate quality

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With 150 000 knee arthroscopies carried out in the United Kingdom each year, and about five times that number in the United States,<sup>1,2</sup> arthroscopic partial meniscectomy—keyhole surgery for middle aged to older adults with knee pain to trim a torn meniscus—is one of the most common surgical procedures. Considering the enormous volume, it is natural to think that there is compelling evidence for the procedure being beneficial. Remarkably, this is not so.

It is barely a decade since the publication of the first controlled trial addressing knee arthroscopy using placebo surgery as a comparator.<sup>3</sup> Since then a series of rigorous trials, summarised in two recent systematic reviews and meta-analyses, provide compelling evidence that arthroscopic knee surgery offers little benefit for most patients with knee pain.<sup>4,5</sup> The latest nail into what should be a sealing coffin appears in a linked paper by Kise and colleagues (doi:10.1136/bmj.i3740):<sup>6</sup> a rigorous comparison between exercise therapy alone and arthroscopic partial meniscectomy alone (without any postoperative rehabilitation) in adults with a degenerative meniscal tear. The authors found no between group difference in patient reported knee function at the two year follow-up, but greater muscle strength in the exercise group at three months.

How did this situation—widespread practice without supporting evidence of even moderate quality—come about? Orthopaedic surgeons used to treat young people presenting after an injury with a “locked knee” (an inability to fully extend the painful knee because of a meniscus tear lodged between the articular surfaces) by trimming the torn meniscus in open surgery. Once arthroscopy became technically possible, this procedure could be done conveniently. With no support aside from biological rationale, the indication crept from locked knees in young patients to all patients of all ages with knee pain and meniscus tears of any sort; tears which, on magnetic resonance imaging, have proved poorly associated with symptoms.<sup>7</sup>

Essentially, good evidence has been widely ignored. Arthroscopic surgery for knee pain continues unabated, albeit under different procedure and billing codes.<sup>8,9</sup> There are many possible reasons for reluctance in the orthopaedic community, including perverse financial incentives and an understandable difficulty in relinquishing cherished and long held beliefs: it is

therefore no surprise that medical reversals (disinvestments in ineffective treatments) are generally slow.<sup>10</sup>

Orthopaedic surgeons are unlikely to endorse these explanations, preferring to argue that the trials do not reflect the real world: they are “explanatory” or “mechanistic” trials, instead of being “pragmatic” or “practical.”<sup>11</sup> If only we tested the procedures in patients reflective of actual clinical practice in the settings in which arthroscopic partial meniscectomy is actually delivered, they argue, we would see a different result.<sup>12-19</sup>

We are at the point where any careful scrutiny, by, for instance, public health administrators or officials of an insurance company, would conclude that the estimated two million arthroscopic partial menisectomies undertaken globally each year at a cost of several billion US dollars is potentially nothing but medical waste. Because frontline practitioners and local commissioners have not responded appropriately to the evidence, it follows that system level measures that result in more appropriate use of scarce medical resources are necessary—and perhaps urgently required.

If we were to generously give advocates of arthroscopic partial meniscectomy the benefit of the doubt we might allow that under such high stakes circumstances, acting to severely limit these procedures could be considered precipitous and premature. Accepting this line of argument, we would undertake the practical, real world trials embedded in the flow of practice that could satisfy orthopaedic surgeons’ concerns about the current evidence.

Which of these two options (or perhaps, to some degree, both) we should take is a matter requiring urgent societal debate and rapid resolution. In a world of increasing awareness of constrained resources and epidemic medical waste, what we should not do is allow the orthopaedic community, hospital administrators, healthcare providers, and funders to ignore the results of rigorous trials and continue widespread use of procedures for which there has never been compelling evidence.

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