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Response to Kooistra et al regarding: "The debate on rotator cuff surgery in the elderly continues!"

In reply:

We thank Kooistra et al for their interest in our paper "Do elderly patients gain as much benefit from arthroscopic rotator cuff repair as their younger peers?".[13] In this paper, we compared outcomes for elderly patients with outcomes for younger patients matched for sex, tear size, activity level, and medical comorbidities. We believe that our paper is the first published study to directly compare arthroscopic rotator cuff repair in patients aged over 75 years with a control group of younger patients. This is an important and exciting area. As our population ages, surgery for elderly people will become ever more clinically relevant.

In our study, we reported outcomes for elderly patients that were comparable to their younger peers, with similar improvements in Constant score, pain, and satisfaction. We are not saying that our paper is the definitive means by which to make a decision on whether an elderly patient should be treated surgically. Rather, as a profession, we should not deny treatments based purely on chronological age. We believe that rotator cuff repair should be considered as a valuable treatment option, irrespective of age. Treatment should be individualized, and every patient considered on a case-by-case basis.

As stated in our paper, it was impossible to account for every possible variable. We suggested that factors we did not study, such as ethnicity and socioecomonic status, could have affected the results. We thank Kooistra et al for highlighting the importance of mental health. The systematic review, discussed by Kooistra et al, by Coronado et al[3] did not find any clear association between postoperative outcomes and emotional wellbeing. However, as Kooistra et al state, they did find an association with patient expectation. The impact of mental health on surgery remains largely unknown. However, it is certainly a possible confounding factor. Further research could focus not only on shoulder outcome scores but also on outcomes relating to general wellbeing and mental health. Suitable measures might include the widely used EQ-5D[11] and SF-12[12] questionnaires. Both contain questions relating to anxiety and depression, pain, and physical health.

We agree that concomitant intraoperative procedures could have affected our results. This is discussed in the Limitations section of our paper. In further explanation, we felt it unethical to perform isolated cuff repairs in patients whom we believed would also benefit from concomitant procedures. The proportion of patients undergoing long head of biceps tenotomy or tenodesis was comparable in both groups. Similarly, equivalent proportions of both groups underwent acromioclavicular joint excisions. Thus it is likely that the concomitant procedures affected outcomes equally, or possibly even to a greater extent, for younger patients.

Our general physiotherapy program includes gentle pendular exercises immediately for small tears, at 3 weeks for medium tears, and only at 6 weeks for large and massive tears. Passive exercises are generally commenced at 3 weeks for small and medium tears, and at 6 weeks for large and massive tears. The program includes core strength exercises and deltoid rehabilitation exercises.[9] Those with sporting hobbies were also given incremental strength exercises to help their return to play. Neuromuscular function is indeed addressed in our routine postoperative protocol. Methods often employed to improve joint position sense include taping the shoulder. Performing exercises with the unaffected arm and imagining performing exercises with the operated arm are newer concepts that are now being employed by our physiotherapists. Some of this has been explained through the use of functional magnetic resonance imaging (MRI). There was an excellent presentation on this, which was awarded the Ian Kelly prize at the British Elbow and Shoulder Society meeting in 2015.[7] The concept is perhaps best known in the rehabilitation of patients with strokes, where functional MRI has demonstrated that visualizing movement activates both sides of the brain, including the mirror neuron system.[6]

We did not report on how many nonstudy patients were successfully treated nonoperatively. Our study inclusion criteria for consideration of surgical repair included failed

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nonoperative treatment. Anecdotally, we believe that the proportion of our patients treated successfully without surgery is roughly in line with the 73% to 80% success figure quoted in the literature review by Edwards et al.[4] Retrospectively, obtaining accurate information for our patient cohort dating back to 2006 would be somewhat challenging. Clearly, a prospective study would provide an accurate answer.

In the paper, we reported that we do not routinely perform pre- or postsurgical MRI scans. The reasons for this are several-fold. In the UK National Health Service, there is a need to ensure that health care provides value, both clinically and financially. Many of our patients received preoperative ultrasound scans performed by the surgeon as part of a 1-stop outpatient service. There is literature supporting that ultrasound, rather than MRI, should be the first-line investigation for rotator cuff pathology. The American Society of Radiologists in Ultrasound produced a consensus statement to this effect in 2013.[10] Ultrasound for cuff pathology is not only clinically appropriate but also more cost-effective.[2] In our Trust, MRI is not only substantially more expensive than ultrasound, but also has the disadvantage of resulting in significant delay, often an excess of 6 weeks! We perform our outpatient ultrasounds according to British Elbow and Shoulder Society guidelines.[1]

We agree that retear rates could reasonably be expected to be higher in the elderly group. From an academic standpoint, it would certainly be very interesting to scan all of the patients postoperatively to see whether retears had occurred. Meta-analysis reports that functional outcome scores at follow-up, including our chosen outcomes of Constant score and pain, are better in patients with intact cuff repairs.[5] We also know that the majority of retears occur during the first 6 postoperative months.[8] All of our patients were followed up for an absolute minimum of 1 year, with a mean follow-up of 29 months. Thus, we believe that we are likely to have identified our failures. It is also important to consider that a patient with a retear who was clinically doing well would not require any change in their treatment. Consequently, because the result of a routine postoperative scan would not lead directly to a change in the individual patient's treatment, we felt unable to justify the investigation.

We acknowledge that our group of patients might not be representative of the general population of patients aged over 75 years. This is always a concern with small numbers of patients from a single unit. We advocate further research into this important field. Shoulder outcome scores, cuff-related measures, PROMS, general wellbeing, and patient experience and satisfaction are all important measures to consider. We agree that a randomized control trial would provide more robust evidence than our retrospective case series. However, we should not overlook the importance of smaller retrospective studies, because these studies can help to inform the design of larger multicenter randomized controlled trials. By working together collaboratively, we can help to maximize clinical usefulness and minimize bias. Only in this way can we hope to advance knowledge and provide our patients with the highest standards of care.

Disclaimer

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