Searching for Ways to Enhance Tendon Healing in Revision Rotator Cuff Surgery: Response

Authors' Response:

We thank the authors of the letter for their interest in our study.[9] We must highlight that although all patients in our study were prospectively and consecutively recruited over a 12-year period, this was a post hoc matched-cohort study, not a prospective study. It therefore has all the limitations of a retrospective study, which meant that our pragmatic rotator cuff repair database was not purpose-built to include the potential non-healing risk factors highlighted by the authors of the letter, such as hypothyroidism, diabetes, and smoking.

With respect to fatty infiltration, this is a sign for large chronic tears. When the tendon retracts, there is a loss of pennation of the muscle fibers, and there is a relative increase in the amount of fat to muscle tissue. We believe that the tear size itself, rather than the amount of fatty infiltration per se, is the cause of the higher retear rate.[7,10]

In terms of ultrasound versus magnetic resonance imaging (MRI), we disagree with the authors. In experienced hands, ultrasound has been shown to be just as reliable as, if not more reliable than, MRI in determining tears.[2,3,6,10] Furthermore, although shear wave elastography is still an emerging application in the shoulder, previous studies at our institution have reported on the elastographic characteristics of healthy versus tendinopathic tendons[4] and on the healing supraspinatus tendon after rotator cuff repair.[8] Our elastographic measurements have shown no improvement in tendon quality after the application of the biological patch.

We agree that 6 months is a relatively short time frame for evaluation of patient-reported outcome measures and that longer follow-up is important. However, the primary aim of utilizing the patch was to decrease retear rates, which are best studied at the 6-month time point,[1,5] and in our study, the addition of a biological patch did not improve retear rates.

With respect to study power, our power analysis revealed that to show a 20% difference between groups, a total sample size of 197 patients would be required and to show a 10% difference, 785 patients would be required. Interestingly, however, this analysis showed that additional patients would likely favor the control group rather than the biological patch group.

In conclusion, like the authors of the letter, we also would have preferred a different outcome. We had hoped that the addition of a biological patch would have improved tendon healing in the revision rotator cuff repair setting. However, the data just did not support this outcome.

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One or more of the authors has declared the following potential conflict of interest or source of funding: G.A.C.M. has received research funding and consulting fees from Smith+Nephew. AOSSM checks author disclosures against the Open Payments Database (OPD). AOSSM has not conducted an independent investigation on the OPD and disclaims any liability or responsibility relating thereto.

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The Orthopaedic Journal of Sports Medicine, 12(7), 23259671241260421
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