

Letters to the Editor

Single- Versus Double-Row Rotator Cuff Repair: The Jury Is Still Out

To the Editor:

I read with interest the recent article by Koh et al.¹ in the April 2011 issue of *Arthroscopy*. The ongoing controversy concerning single- versus double-row rotator cuff repairs is of great importance and includes a number of factors that must be considered, including initial biomechanical strength, radiographic healing rates, and clinical outcomes, as well as anchor cost and operative time. Numerous studies—including recent systematic reviews—have fairly conclusively found improved biomechanical properties (including initial load to failure, gap formation, and footprint contact pressures), as well as improved structural healing rates, with double-row techniques.^{2,3} Unfortunately, this has not yet translated into clear evidence of improved clinical outcomes, and I commend the authors on their investigation, because this is one of the few randomized trials assessing this to date.

It appears, however, that the “double-row” construct group tested in this study was not truly representative of a double-row repair. Although an additional anchor was used in the double-row group—resulting in one additional horizontal suture passed more medially to the lateral simple sutures—the fixation (anchor) sites remained relatively co-linear, as indicated by the figure provided. For all intents and purposes, this was actually a single-row repair that appears to differ from the “single-row” group only in the addition of a single anchor (albeit slightly medially offset). Although this additional anchor does increase the number of fixation points, it would not likely increase medial-lateral footprint coverage or tendon-bone contact pressure to any meaningful degree. This concern is reinforced by the fact that, in a study that includes tears up to 33 mm in the sagittal (anterior-posterior) dimension, 3 anchors (the maximum number used) would not be considered sufficient to achieve a formal double-row repair.

Unfortunately, this has been a limitation of all published randomized clinical trials of single- versus double-row repairs to date. As pointed out by Burkhart and Cole,⁴ none of the existing outcome studies examining this issue has included a true double-row design, which ideally should consist of relatively perpendicular rows of medial and lateral fixation points, thereby achieving wider footprint coverage and increased contact pressure compared with a single-row design.

Instead, the few existing Level I studies have used atypical anchor configurations and/or unexpectedly few numbers of anchors.^{5,6} Furthermore, I would suggest that at this time, many if not most surgeons using double-row techniques today are no longer using unlinked (i.e., independent medial and lateral anchor row) constructs but rather are using a linked (i.e., transosseous-equivalent or suture-bridge) technique, which is not at all represented by the double-row technique used here or in any existing outcome studies.

Because of this, the results of this study, and indeed of all current Level I studies assessing clinical outcomes of single-versus double-row repairs, should be interpreted cautiously. Although no one has yet conclusively shown improved outcomes with double-row repairs, further investigation is needed before this issue will be resolved. It is imperative that these studies include true double-row, including transosseous-equivalent, techniques.

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References

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