

Short Communication

A Point of View on Rotator Cuff Repair

Saccomanni Bernardino*

Department of Sports Medicine and Orthopaedic and Trauma Surgery, Italy

***Corresponding author:** Saccomanni Bernardino, Department of Sports Medicine and Orthopaedic and Trauma Surgery, Viale Regina Margherita, 70022, Altamura (Bari), Italy

Received: September 13, 2019; **Accepted:** October 04, 2019; **Published:** October 11, 2019

Short Communication

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 doublerow 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.

References

1. Koh KH, Kang KC, Lim TK, Shon MS, Yoo JC. Prospective randomized clinical trial of single- *versus* double-row suture anchor repair in 2- to 4-cm rotator cuff tears: Clinical and magnetic resonance imaging results. *Arthroscopy*. 2011; 27: 453-461.
2. Wall LB, Keener JD, Brophy RH. Double-row vs single-row rotator cuff repair: A review of the biomechanical evidence. *J Shoulder Elbow Surg*. 2009; 18: 933-941.
3. Duquin TR, Buyea C, Bisson LJ. Which method of rotator cuff repair leads to the highest rate of structural healing? A systematic review. *Am J Sports Med*. 2010; 38: 835-841.
4. Burkhart SS, Cole BJ. Bridging self-reinforcing double-row rotator cuff repair: We really are doing better. *Arthroscopy*. 2010; 26: 677-680.
5. Burks RT, Crim J, Brown N, Fink B, Greis PE. A prospective randomized clinical trial comparing arthroscopic single- and double-row rotator cuff repair: Magnetic resonance imaging and early clinical evaluation. *Am J Sports Med*. 2009; 37: 674-682.
6. Franceschi F, Ruzzini L, Longo UG, Martina FM, Zobel BB, Maffuli N, et al. Equivalent clinical results of arthroscopic single-row and double-row suture anchor repair for rotator cuff tears: A randomized controlled trial. *Am J Sports Med*. 2007; 35: 1254-1260.