

Arthroscopic in Situ Repair of Partial Bursal Rotator Cuff Tears Without Acromioplasty

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Purpose: To evaluate functional outcomes and complications in a consecutive group of patients with partial bursal rotator cuff tears (PBRCTs) treated with insitu repair without acromioplasty. **Methods:** Seventy-four patients who had undergone an arthroscopic single row in situ repair for bursal-sided rotator cuff tears were evaluated. Clinical assessment consisted of glenohumeral range of motion measurement, the American Shoulder and Elbow Surgeons score, and the University of California at Los Angeles score. Pain was recorded using a visual analog scale. Postoperative complications were also assessed. **Results:** Mean age was 55.2 years (± 6.3) with a minimum of 2-year follow-up. After arthroscopic repair, all active range of motion parameters improved significantly ($P < .0001$). The American Shoulder and Elbow Surgeons scores improved from 42.5 to 86.1; the University of California at Los Angeles scores improved from 15.8 to 31.4, and the visual analog scale scores improved from 6.6 to 0.7 ($P < .0001$). Only 3 patients developed a postoperative adhesive capsulitis that responded to physical therapy. **Conclusions:** In the midterm follow-up (42 months), arthroscopic in situ repair of PBRCTs without acromioplasty is a reliable procedure that produces significant functional improvements and pain relief. **Level of Evidence:** Level IV, therapeutic case series.

The current evidence does not provide guidance as to the best management plan for symptomatic partial bursal rotator cuff tears (PBRCTs). After failed conservative management, operative intervention is typically indicated for patients with persistent pain and disability symptoms.¹⁻³ Generally, PBRCTs are considered for repair when they extend to more than 50% of the tendon thickness.¹⁻³

There is no widely accepted technique to repair PBRCTs. Some surgeons prefer conversion from partial into full thickness tear, and then repair in a traditional fashion,⁴⁻⁶ while others advocate in situ repair preserving the normal articular-side tendon.⁷⁻¹⁰ Most of the authors associate a subacromial decompression at the time of surgery.⁴⁻¹⁰

Despite theoretic benefits of acromioplasty in the setting of rotator cuff repair, previous studies showed that acromioplasty does not improve functional outcomes or decrease complications.¹¹⁻¹⁵

The current literature indicates that patients with full-thickness rotator cuff repair have similar outcomes whether or not acromioplasty is performed.^{16,17} Nevertheless, we are not aware of any study that has evaluated the results of in situ PBRCT repair without acromioplasty.

The purpose of this study was to evaluate functional outcomes and complications of a consecutive group of patients with PBRCTs treated with in situ repair without acromioplasty. Our hypothesis was that in situ PBRCTs repair is a reliable procedure that produces significant functional improvement without the need of a concomitant acromioplasty.

Methods

Patients who underwent arthroscopic repair of bursal-sided rotator cuff tears between March 2006 and April 2013 were retrospectively identified. The inclusion criteria were (1) an unsuccessful minimum 3-month course of conservative treatment consisting of activity modification, anti-inflammatory medication, and a physical therapy, and (2) tears of >50% of the tendon

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thickness on the bursal side (or 6 mm) diagnosed with preoperative MRI and confirmed during surgery.

Exclusion criteria were (1) less than 2 years' follow-up, (2) previous surgeries in the affected shoulder, and (3) associated procedures at the time of surgery.

Surgical Technique

All our patients were operated on in beach chair position under regional anesthesia (Fig 1). Two surgeons (M.R. and G.D.M.) of our team performed all the procedures. Glenohumeral joint examination was performed through a standard posterior portal, identifying integrity of articular tendons fibers.

A subacromial inspection through the same portal was done and a lateral portal was established. The arthroscope was switched to the lateral portal and an anterolateral working portal was placed. Enough bursectomy was performed to allow good visualization of the cuff tear and manage arthroscopic tools. Once the rupture was discovered, the degenerative tissue was removed (Fig 1A). The thickness of the tear was measured with a calibrated probe (Fig 1B).

Next, the greater tuberosity was prepared to promote healing of the reattached cuff using the Crimson Duvet

procedure previously described by Snyder.¹⁸ Only the detached layer was reattached to the greater tuberosity using a 5.5-mm CrossFT anchor with 2 HiFi Sutures (Conmed, Linvatec, Largo, FL). All patients received a single-row repair. All sutures were passed with a simple repair (Fig 1 C and D). If the tear involved less than 1 cm of the footprint in an anterior-to-posterior direction, 1 anchor was used. If the tear involved more than 1 cm, 2 anchors were used—one placed anteriorly and the other posteriorly. In 68 patients, 1 anchor was used and in 6 patients, 2 anchors.

Subacromial decompression was not performed in any patient. For each of the 74 patients, data related to clinical history, preoperative medical evaluation, and intraoperative findings was recorded. Partial rotator cuff tears were classified according to Ellman¹⁹ as follows: A, articular; B, bursal; and I, interstitial; grade 1, less than 3 mm of the tendon thickness; grade 2, 3 to 6 mm of the tendon thickness, and grade 3, more than 6 mm of the tendon thickness. All tears included in this study were B3.

Pre- and postoperative evaluation was performed by a physical therapist specialized in shoulder pathology blinded to the type of surgery. Each patient was

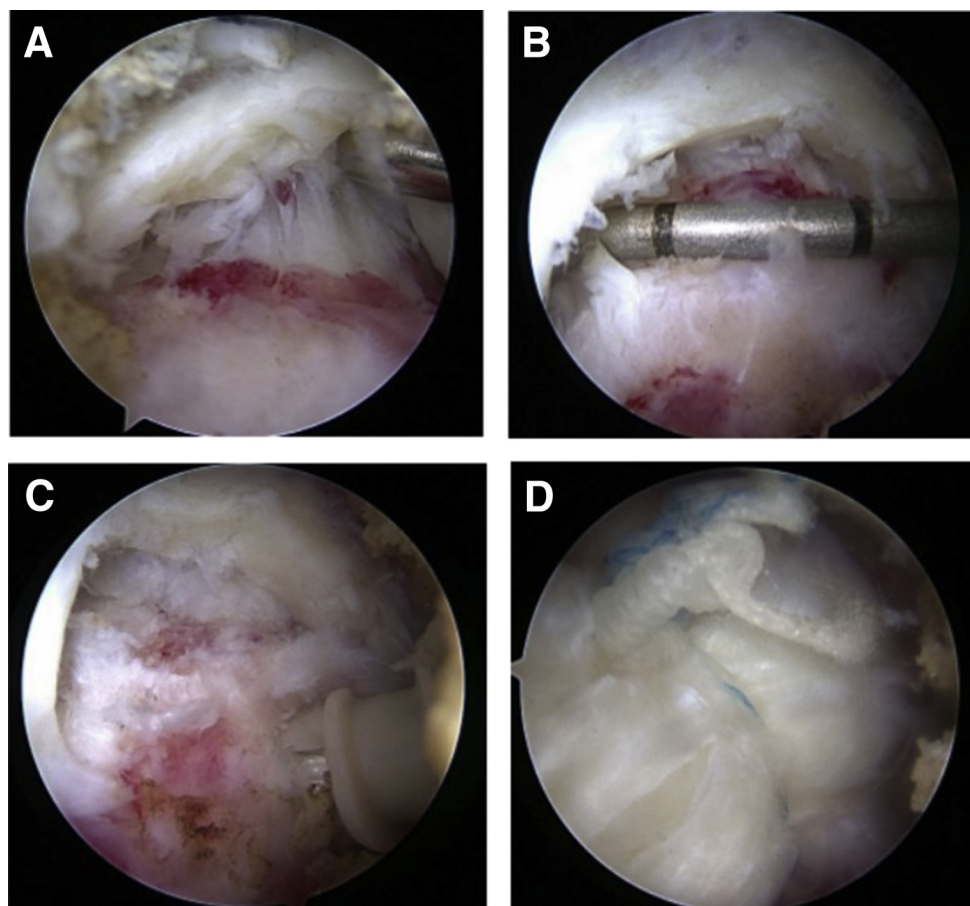


Fig 1. (A) Image showing the healthy articular fibers. (B) Subacromial view of the right shoulder seen from the lateral portal showing a bursal surface partial-thickness tear of the supraspinatus. The tear is measured with a calibrated probe. (C) The anchor is placed at the lateral border of the footprint. (D) Final image of the complete single-row repair.

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