Arthroscopic Rotator Cuff Repair: Preliminary Results Using Suture Anchors In The Beach Chair Position

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Full Thickness Rotator Cuff Tear

Consensus
- Full thickness tears need to be repaired

Controversy
- Repair technique: arthroscopic or mini-open repair?
Common Repair Goals

- Pain relief
- Strength improvement
- Functional gain
- Prevention of disease progression
Open Cuff Repair

- Traditional open rotator cuff repair combined with subacromial decompression proven successful in decreasing pain and restoring function
- Nonetheless, open rotator cuff repair has some inherent disadvantages
Arthroscopic Cuff Repair

- Smaller skin incisions
- No deltoid detachment & less dissection
- Complete glenohumeral and subacromial evaluation
- Treatment of concomitant intra-articular pathology
- Less pain and more rapid rehabilitation
Repair Indications

- Same for arthroscopic and open repair
- Persistent pain that is unresponsive to a 6-month or more course of nonoperative management
- Pain significantly interferes with a patient’s ADLs, work, or sports
Purpose

- Retrospective report
- Analyze preliminary results utilizing suture anchors to perform arthroscopic rotator cuff repairs in a consecutive series of patients
Material & Methods

- Patients who underwent arthroscopic repair of full-thickness RCT at BAMC
- Minimum of 1-year follow
- Details concerning injury (history and exam)
- Imaging study results
- Operative images and notes, pre- and postoperative SANE and ASES
- Latest functional status
- Recorded in a centralized database for analysis
Arthroscopic Repair Technique

- Beach chair
- EUA, diagnostic scope
- Concomitant procedures
- Mobilization – CHL
Arthroscopic Repair Steps

1. Passing sutures
2. Trial reduction
3. Insertion site prep
4. Place anchors
5. Pass anchor sutures through cuff tissue
6. Modified Roeder knots
Technique Details

- Side-to-side sutures as needed -- margin convergence (Burkhart)
- 2 sutures per anchor preferred
- Repair status checked from the bursal side and G-H side after repair
Rehabilitation

- Sling maintains arm in neutral rotation with minimal abduction (Ice applied liberally)
- Patient-controlled pain control pump
- PROM exercises 0-6 weeks
- Patients home same day or next morning
- AROM 6-12 wks-- strengthening by 12
- Motion limitations largely based upon safe arc of motion determined arthroscopically
Postoperative Evaluation

- ASES and SANE scores
- Initial scores prior to surgery compared to scores at latest follow up
- Student’s two-tailed T-test ($p < 0.05$)
- ROM and highest functional activity level recorded for all patients at latest follow up
Results

- 18 patients underwent 19 consecutive arthroscopic rotator cuff repairs since 12/97
- 11 patients (12 repairs) with > 1 year follow included in this study
- 6 males and 5 females with a combined average age of 53 years (range, 26 to 70)
- Follow up averaged 21 months (range, 14 to 36 months)
Results

- 0 small (< 1 cm)
- 9 medium (1-3 cm)
- 3 large (3-5 cm) tears
- Tears were limited to the supraspinatus tendon
- Concomitant procedures: 2 SLAP repairs and 2 ACJ resections
Surgical Times

R² = 0.7492
SANE and ASES Scores

![Bar chart showing SANE and ASES scores with case numbers and minutes.]
Results

- All returned to pre-injury level of function
- No clinical failures at this early follow up interval
- No significant ROM deficit noted
- No cases of adhesive capsulitis
- No re-operations necessary
- All patients satisfied with their results
- All would have arthroscopic repair again if needed
Discussion

- Goal of all arthroscopic repair techniques: obtain same consistency of repair as with open cuff repair
- Technology only recently caught up with desire to obtain this level of consistency with arthroscopic techniques
- Currently a myriad of available arthroscopic instruments to assess, mobilize, and repair torn rotator cuff tissues that were not available to the pioneers of current arthroscopic repair techniques
Discussion

- Despite these advances in instrumentation, arthroscopic rotator cuff repairs remain one of the more challenging arthroscopic procedures.
- A stepwise approach toward increasing confidence and efficiency is recommended when transitioning toward an arthroscopic repair technique.
Conclusions

- Arthroscopic repair of full-thickness tears produced satisfactory preliminary results in this small series.
- Arthroscopic repairs offer several advantages:
  - smaller incisions, access to the glenohumeral joint for the inspection and treatment of intra-articular lesions, no deltoid detachment, and less soft-tissue dissection.
Conclusions

- Advantages must be considered against the technical difficulty of method
- Nevertheless, arthroscopic rotator cuff repair is a viable and effective technique
- This procedure is likely to become more commonly performed in the future as shoulder arthroscopic skills and instrumentation improve
Future Directions

- Randomized trial needed
- Mini-Open versus Arthroscopic Repair