Tear characteristics influence tendon retraction and postoperative outcomes following arthroscopic repair of acute traumatic rotator cuff tears

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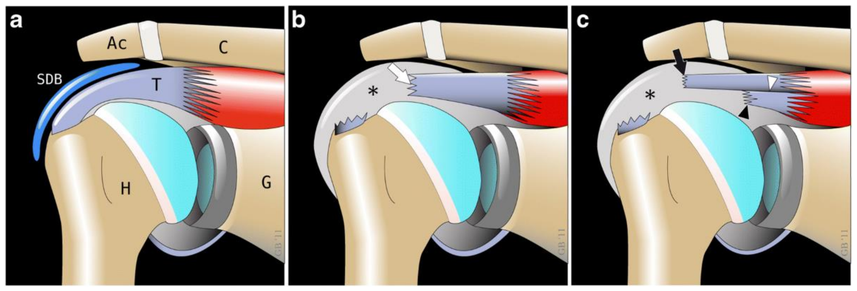
Introduction

- In chronic, degenerative rotator cuff tears (RCTs):
  - Retraction is progressive, and tissue quality is poor
- However, in acute, traumatic RCTs:
  - Retraction is variable, and tissue quality is generally healthier, as the musculotendinous unit retains its elasticity



Palmer et al. *Skeletal Radiology* 2018

Purpose

To examine the correlation between patient demographics and tear characteristics on tendon retraction and postoperative outcomes following repairs of acute, traumatic rotator cuff.

Hypothesis

We hypothesized that increased tendon retraction would correlate with worse preoperative tear characteristics and postoperative outcomes following rotator cuff repair.

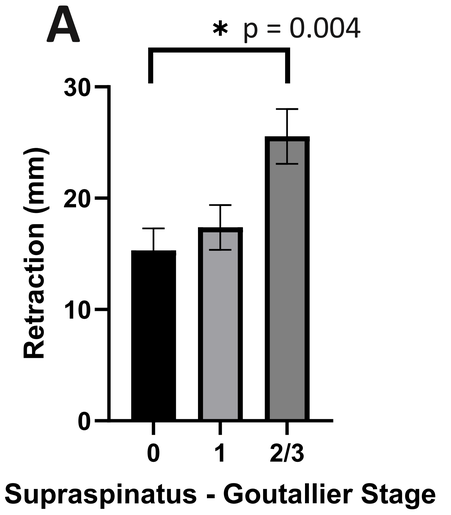
Methods

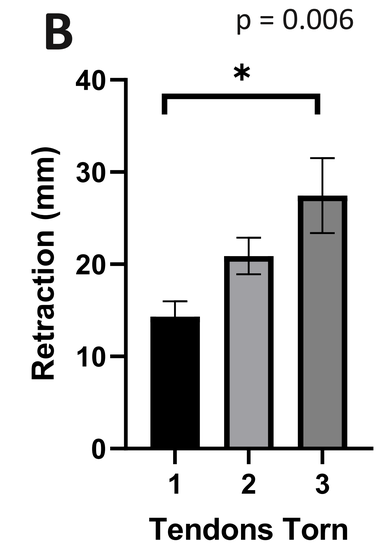
- Single institution review of consecutive patients who underwent acute traumatic rotator cuff repair from 2016-2021 with > 1-year postoperative follow-up
- Traumatic rotator cuff tear was defined as a history of trauma with MRI findings consistent with a full-thickness tear and 1 or more of the following: T2 enhancement of the muscle belly, wavy like appearance of the tendon, and/or insertional cuff tissue on the tuberosity

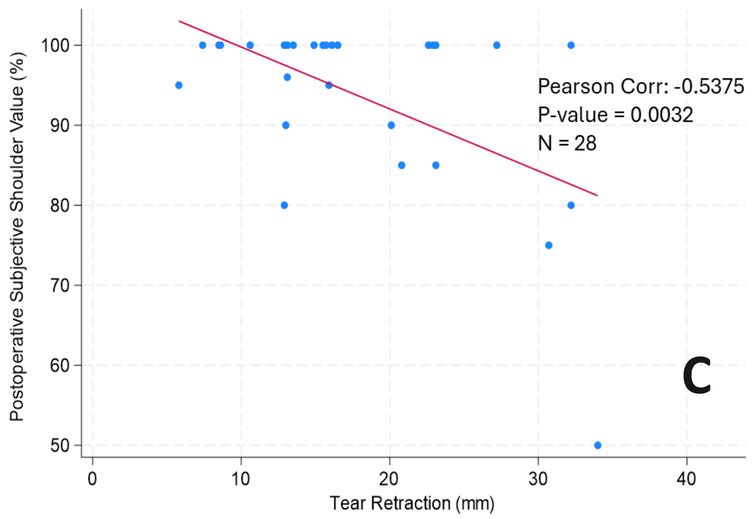
- Demographics: age, gender, time from trauma to MRI and surgery
- Tear Characteristics: size of tear, retraction, delamination, and acromiohumeral distance
- Patient-reported outcomes:
  - Visual Analog Scale (VAS)
  - Subjective Shoulder Value (SSV)
  - American Shoulder and Elbow Surgeons (ASES)
- Other outcomes: range of motion (ROM), strength, and retear

Results

- 40 patients
  - Age: 63.3 ± 12.4 years
  - Time injury to the MRI: 2.5 ± 2.5 months
  - Time injury to repair: 4.5 ± 5.8 months
- Increased retraction associated with:
  - Supraspinatus Goutallier Stage (A)
  - Tendons torn (B)
  - Rotator cuff tear size (C)
  - **Decreased** postoperative SSV (D)
- No association between retraction and age, gender, time from trauma to MRI/surgery, delamination, VAS, ASES, ROM, strength, and retear







Conclusion

- In cases of acute traumatic rotator cuff tears, severity of tendon retraction is associated with:
  - **Larger anteroposterior tear sizes**
  - **Greater number of tendons injured**
  - **More severe supraspinatus fatty infiltration**
  - **Lower postoperative SSV**

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