Primary Repair of Massive Rotator Cuff Tear

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Disclosure

- None relevant to this presentation

Definitions

- "Massive"
  - DeOrio and Cofield
    - >5 cm greatest dimension
  - Gerber
    - ≥ 2 tendons
  - Davidson and Burkhart
    - "Long and wide"
      - > 2 x 2 cm
    - Retracted, immobile
    - Differentiated from U, L, and Reverse L - shaped
Relative Contraindications to Repair

- Tobacco use
- Acromiohumeral distance < 4.1 mm
- Goutallier Stage III or IV fatty infiltration of infraspinatus
- Chronicity
- Glenohumeral degenerative changes

Clinical Algorithm for Massive RCT

- Decision to Repair
- Primary Repair: SR vs. DR (TOE)
- RC reduces after standard releases: CHL, SGHL, PC
- Advanced releases: PIS, AIS
- ECM Augmentation
- Primary Repair with Margin Convergence

Standard Releases

- Coracohumeral ligament
- Superior capsular reflection
- Posterior capsular reflection
  - Infraspinatus
- Anterior capsular reflection
  - Subscapularis
Single Row vs. TOE?

- Not my talk
- My practice
  - TOE when tension permits
    - Mobile tear
    - Acute, traumatic
  - Single row
    - Avoid tension
    - Simple triple
    - "MAC" stitch
    - Suture tape

Margin Convergence

- L – shaped, reverse L – shaped, U – shaped tear
- Intact anterior, rotator interval tissue
  - Augment with long head of the biceps tendon
- Non – anatomic repair
- Reduces tension / gap formation at tendon edge
- May facilitate force couple

LHBT Interpositional Autograft

- Use of long head of the biceps tendon to augment quality of rotator interval tissue
- Steps
  - Anchor – based tenodesis proximally
    - Perform prior to tenotomizing long head of the biceps tendon to preserve length
  - Side – side suturing of long head of the biceps tendon to anterior interval tissue
  - Margin convergence
LHBT Interpositional Autograft

- Massive, retracted, immobile tear
- Margin convergence not possible
  - Better results with margin convergence when possible
- Tendon edge within 2 cm of articular margin
- Reasonable quality tendon tissue

Posterior Interval Slide

- Steps
  - Dissect scapular spine to permit differentiation between supraspinatus and infraspinatus
  - Traction sutures in supraspinatus and infraspinatus
  - Retrieve supraspinatus and infraspinatus traction sutures anteriorly and posteriorly respectively
  - Arthroscopic scissors to split conjoined tendon of supraspinatus and infraspinatus following line of muscle bellies
  - Repair infraspinatus then supraspinatus, then side–side repair of split
Posterior Interval Slide

Post-op Rehab

- Six weeks relative immobilization
  - Transition out of sling over additional two weeks
- Supine rotator cuff protocol starting 6 – 8 weeks post-operatively
- Delay strengthening until 12 – 16 weeks post-operatively

Conclusions

- Primary repair of massive rotator cuff tears requires thorough mobilization and may require additional techniques such as margin convergence and posterior interval slide
- Avoid cardinal sin of over-tensioning repair
- Consider alternative / adjunct techniques when deciding how best to treat the tear such as ECM augmentation and be prepared for SCR as a salvage if the tear cannot be mobilized
Thank You!