Open RC Repairs 2015 and Role of Tendon Transfers

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Indications for Open RCR

• Large to Massive RCT
• Need for tendon transfer
• Need for ECM augmentation
• Significant SSC involvement
• Tendon quality and tendon mobility issues
• Failed previous RCR
Open Rotator Cuff Repair

Technique

- Preserve and respect the deltoid
- Appropriate decompression
- Tear identification
- Tendon mobilization
- Associated pathology
- Secure repair technique
- Aftercare

Repair Options

- Releases:
  - Coracoid interval
  - Scapular Spine interval
  - Capsule
  - Subdeltoid
- Repair a muscle tendon unit with line of action
- Don’t just close a hole

Technique

- Incision
- Deltoid Split
- Adhesiolysis
- Subacromial/Subdeltoid Capsular
- Tendon Mobilization Interval Slides
- Suture
  - Trans-osseous
  - Transfers/Augments
- Aftercare

Quick arthroscopy can be helpful. Large posterosuperior tear seen in right shoulder
Large and Massive Tears

- Higher Failure rate
- Both in open and scope
- Open may afford better healing rate than scope
- Abduction pillow: decrease stress less gap formation lower re-tear rate
  
  Reilly JSES 2004

Evaluation

- History and Physical
  Stiffness
  Neuro (SSN)
- Radiographs:
  AP, Outlet, and Axillary
- MRI/Arthrogram-MRI
- EMG- Beware of concomitant SSN palsy at SGN notch
- Ultrasound?
- Arthroscopy

Deltoid split

- Needle tip cautery
- Raphe between anterior and middle thirds
- Incision parallel to anterior acromion
- Periosteal flap off acromion (reattachment)
- Anterior flap is periosteum-deltoid Sharpey’s-CA ligament
- Excellent exposure, kind to deltoid
- Robust Reattachment
### Deltoid split

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### Yeah, Right. Not so Fast

- What if first look is Bald Head
- Do NOT Panic
- Systematic tag of RC tendon to control
- Find an edge and follow
- Assess if Slides are necessary

### Interval Slides

- Release retracted Supraspinatus tendon from coracoid base
- Less common from scapular spine
- Provides length and direction of pull
- “Break it to Fix it”
Shoulder Service

Interval Slides

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Shoulder Service

Interval Slides

- Can provide for length
- Correct “line of pull”
- Mobility
- Tension “free” repair
- Bounce to muscle-tendon unit

Role of ECM Augmentations

- Mechanical Properties
  Strength
  Stiffness
  Creep
  Elasticity
- Biologic Properties
  Absorbable
  Non-absorbable
  Dermal
  SIS
  Human/Porcine
Shoulder Service

Tendon Transfer Options

- **Upper 1/3 Subscap Off intact capsule**
  - Closes anterior supra deficit
  - Easy, low morbidity
  - Does not disrupt force couple

Upper 1/3 SSC tendon elevated off capsule. Transpose superiorly

- **Pectoralis Major Sternal head**
  - Transfer under clavicular head Subcoracoid
  - Must be anterior to MC nerve

Resch, Yamaguchi, Galatz, Warner

- **Indications**
  - SSC deficiency
  - AS Instability

- **Latissimus dorsi**
  - Posterosuperior tear
  - ER deficiency
  - IR Drop Sign
  - "Hornblowers"

- Need intact SSC
- Technical challenge
- Variable results
  - Primary Revision

Miniaci, Warner, Gerber

Shoulder surgeon with experience in open surgery and tendon transfers
Case example

- 49 yr male
- Injury with loss of active elevation and now an internal rotation drop at side
- MRI obtained

Open RCR with LT transfer

Controversies in Open RCR
- Small vs. Larger tear results
- New augmentation products
- Role of tendon transfers
- Integrity of cuff and function
- Correlation of muscle belly status and reparability and outcome
- Comparison to modern arthroscopic techniques