RCR–Technical pearls

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Financial disclosures

- None
- Nada
- Zich
- Zero
- Nothing

Talk Outline

- DISCLAIMER: SUPERIOR TEARS, FULL THICKNESS
  1. Patient related factors
  2. Preop Planning
  3. Intraop: releases
  4. Repair technique and match the pattern repair
  5. Managing poor tendon
  6. Managing poor bone
  7. Postop
Introduction

1. Patient selection

- Wide variability
- AAOS AUC

[AAOS AUC link]

[AAOS AUC link]

[AAOS AUC link]
Beware

- AGE
- LARGE TEARS
- ATROPHY
- SMOKERS
- IRRATIONAL EXPECTATIONS

NORMAL ANATOMY

CURTIS, ASCOPY 2006

NORMAL ANATOMY

Mochizuki, JBJS 2008
2. Preop planning – MRI

- Coronal T2
- Coronal Fat Sat T2
- Sagittal T2
- Sagittal T1 – junction spine of scapula
- Arthrogram recurrent cases

COMMUNITY CASES SUBOPTIMAL IMAGING

PASTA
2. Preop planning

- Familiar with open and scope
- Prepared to tackle all pathology
- Impingement
- Biceps
- Mobilize and repair tendon adequately
- Augment/reconstruct as necessary
- Various instruments antegrade and retrograde to fix tear
- Backup plans for poor TISSUE quality

3. Releases

- LATERAL GUTTER
- CORACO-HUMERAL LIGAMENT ANTERIOR GUTTER
- POSTERIOR GUTTER
- SPINE SCAPULA
VIDEO OF RELEASES

SORRY No time
Savoie comprehensive approach to cuff tears
Yumendi

4. Repair techniques

I DON'T THINK THEY MATTER AS MUCH AS THE TEAR
MATERIALS MATTER EVEN LESS
- High strength sutures
- More points of fixation
- Tendon to bone apposition
- Not one technique for all tears

4. Repair techniques - Transosseous

Golden standard
PLUS
- Excellent footprint compression
- Bone bed preparation
- MINUS
- Cheesegrating through bone
- Tougher scope
- Lateral cortical augments
4. Repair techniques – Single Row

- First arthroscopic repairs
- **PLUS**
  - Scope
  - Good for medialized repairs
- **MINUS**
  - Less tendon to footprint pressurization

Vented Anchors

- Marrow efflux
- Bone ingrowth

4. Repair techniques – Double Row

- Two sets of anchors
- **PLUS**
  - Improved footprint compression
  - More points of fixation
- **MINUS**
  - Stiffer repair
  - ? Blood supply to cuff
4. Repair techniques - TOE

- Two sets of anchors
- Medial mattress
- Compress to lateral anchors
- **PLUS**
  - Improved footprint compression
  - More points of fixation
- **MINUS**
  - Stiffer repair
  - ? Blood supply to cuff

4. Repair techniques - Linked TOE

- **Plus**
  - Self reinforcing
- **Minus**
  - Less medial pressurization

4. Repair techniques - "speedfix"

- **Plus**
  - **QUICK**
  - Self reinforcing
  - Lateral bone can be better
- **Minus**
  - Less medial pressurization
4. Repair techniques – Summary

- Each technique has plus and minus
- When good tendon and bone: maximize fixation points and pressurization
- Identify when insufficient excursion and tendon and avoid OVERTENSIONING
- TYPE II FAILURES (Cho, 2010)
- Consider biology

4. IDENTIFY PATTERN AND REPAIR
VIEW FROM MULTIPLE PORTALS
PULL IN VARIOUS DIRECTIONS UNTIL BEST REDUCTION
JAAOS, LO/BURKHAR, 2006

4. STRATEGIES FOR TEAR PATTERNS - C RESC ENT
4. STRATEGIES FOR TEAR PATTERNS – V / Trapezoidal

4. STRATEGIES FOR TEAR PATTERNS – L and reverse L

4. STRATEGIES FOR TEAR PATTERNS – massive U
4. Interstitial tears
   ▶ Debride and augment

5. Managing deficient tendon
   ▶ Augment
   ▶ Multiple points of fixation
   ▶ Accept medialization

5. Tendon augment - Onlay
   ▶ Improves strength
   ▶ Impacts biology
   ▶ Unknown final outcomes
   ▶ Tough arthroscopically
5. Tendon augmentation

- Rotation medial
- Graft delivery via scope
- VERY EASY TO DO

5. MANAGING DEFICIENT TENDON EXCERSION

- SCR
- PARTIAL REPAIR
- DEBRIDE/TENOTOMY
- INTERPOSITIONAL PATCH
- RSA??
6. POOR BONE

- BUDDY ANCHOR
- GRAFT AND ANCHOR
- BYPASS

6. POOR BONE – Buddy anchor vs rescue anchor

**PLUS**
- Quick/Easy

**MINUS**
- Not always reliable
- Run out of real estate

Denard, Burkart, Arthroscopy 2011

6. POOR BONE - GRAFT

- Improve biology
- Time & strength good

Burkart, 2005, Arthroscopy
6. POOR BONE - Bypass

- Bypass poor bone
- "Speedfix"
- Quick and easy

7. POSTOP

- IMMOBILIZE x 6 wks
- Pendulums and tableslides
  - SMALL TEARS -> STIFF
  - BIG TEARS -> RETEAR
- PEOPLE DO NOT COMPLY - ESP OLDER
- THERE IS CORRELATION HEALED TENDON AND OUTCOME

CONCLUSIONS

- PERSONALITY OF THE TEAR
  - CONSIDER PATIENT, BIOLOGY, TENDON PREOP, TENDON INTRAOP AND BONE
  - Have extensive armamentarium
  - KNOW YOUR MATERIALS/INSTRUMENTS
  - DO BEST REPAIR POSSIBLE IN YOUR HANDS
  - Address concurrent pathology (biceps, AC, outlet, impingement, contracture)
CONCLUSIONS

- PERSONALITY OF THE TEAR
- Not one repair for all types
- Manage deficient tissues
- Rehab
- THERE IS CORRELATION BETWEEN HEALED CUFF AND OUTCOME

THANK YOU