Point / Counterpoint:

ARTHROSCOPIC SUPRAPECTORAL BICEPS TENODESIS

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Point / Counterpoint:

ARTHROSCOPIC SUPRAPECTORAL BICEPS TENODESIS

WHY NOT!

University of Virginia
Team Physician, UVA Athletics
Biceps Pathology

- Common cause of pain and disability
- Surgical treatment on the rise
37 yo M:

- Finance/hedge fund
- Prior D1 NCAA FB
- 8 Months of worsening anterior shoulder pain
Case #2

42 yo F:

- OR Nurse
- Prior SLAP Repair, 18 mos ago
- Some index improvement but now with anterior and posterior shoulder pain
- Worse with overhead sports
Case #3

62 yo F:
- Elementary school teacher
- Anterior and lateral shoulder pain X 14 mos
- + Night pain
Patient Selection: Who is going to benefit?

✓ LHBT Tendinopathy / Tear
✓ Subluxation
✓ SLAP
? Age variance
? Failed prior SLAP repair
✓ Chondromalacia
✓ Entrapment (?)
More than one way....

Debride
Repair
Tenotomize
Transfer
Tenodesis
  Proximal
  Subpectoral
  Suprapectoral
    (Open)
    (A/S)
Soft Tissue
Suture Anchor
Interference Screw
Cortical Button....
Assume Biceps Tenodesis is the Answer....

- Pain Relief
- Preserve Biceps Anatomy
  - Musculotendinous unit
- Limit fatigue, cramping
- Prevent cosmetic deformity
- Limit weakness
“Arthroscopic Biceps Tenodesis”: An Evolution

“Early generation”
- Soft tissue
- Suture anchor

1st Gen: Interference Screw
- Externalize the tendon
- Stitch and dock on driver
- Tenodesis screw with tendon in blind socket
- Groove entrance or mid groove
Subpectoral Tenodesis

- Technique well described
- Modified incision
- Know Anatomic Landmarks
- Tenodesis Screw
  - Better biomechanically

- Good outcomes with low complication rate
  
  *Mazzocca et al., AJSM, 2008*
Subpectoral Tenodesis: Anatomic Considerations

Dickens et al., AJSM 2012:

- Musculocutaneous Nerve
  - BT site: 10.1mm (6 – 18mm)
  - Medial retractor: 2.9mm (1 - 6mm)

- Radial Nerve
  - Medial retractor: 7.4mm (2 – 12mm)

- Deep Brachial Artery
  - Medial retractor: 5.7mm (1 – 10mm)
Subpectoral Tenodesis: Anatomic Considerations

Denard et al., Arthroscopy 2012
Arthroscopic Suprapectoral Biceps Tenodesis: Technique

- Beach chair, arm positioner
- Locate in subdeltoid space
- Biceps “accessory” portal
- Tunnel - 20mm
- 7mm or 8mm screw
- Tension under visualization
- Back up with suture
A/S Suprapectoral Tenodesis: Technique
Suprapectoral Tenodesis: Why?

Technical:

- Arthroscopic analog of subpec procedure
- Can address pathology in order of preference
- Edema less of an issue
- Visualization
- Always tendinous
- Improved instrumentation

Patient Factors:

- BODY HABITUS
How Low Do You Go?
Challenges: The Learning Curve

- **Tendon Sizing**
  - Can be variable
  - Remove all investing tissue, synovitis

- **Tendon Wrapping**
  - Secure tendon with suture
  - Upsize hole 0.5 – 1mm

- **Establishing accurate tension**
  - Possible to under and **over** tension
<table>
<thead>
<tr>
<th></th>
<th>Absolute Difference</th>
<th>% Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open Subpec BT</td>
<td>0.83 cm</td>
<td>91.6 %</td>
</tr>
<tr>
<td>A/S Suprapec BT</td>
<td>2.04 cm</td>
<td>79.3 %</td>
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Challenges: Outcomes

CLINICAL OUTCOMES AFTER ARTHROSCOPIC SUPRAPECTORAL BICEPS TENODESIS ARE CURRENTLY PENDING
Current Practice: Patient Specific

• Arthroscopic Suprapectoral BT:
  – ~ 95% of cases
  – “Young, active”
  – Concomitant ARCR
  – Superior labral pathology, age>40ish

• Open Subpectoral BT:
  – Still a part of my practice
  – Select patients (thin, muscular males)

• Tenotomy:
  – Low demand
  – Isolated biceps pathology
In Summary

• Minimum goal of arthroscopic surgery is to approximate the analogous open procedure

• AS Suprapectoral BT is analogous to the open procedure...with some potential advantages

• Look to history:
  
  DEBATE (circa 1997) - Arthroscopic vs. Open Instability Surgery
  
  DEBATE (circa 2003) - Arthroscopic vs. Open Rotator Cuff Repair

• What is needed = Clinical Outcomes
THANK YOU