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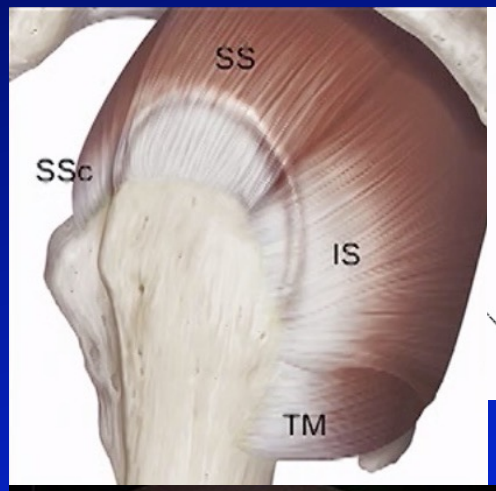
Massive RC Tears....
What now?

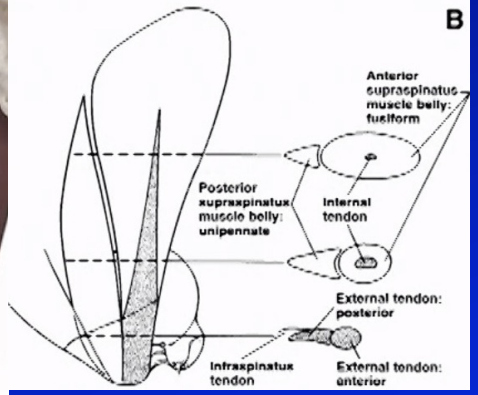
Repair – Reversomany - Allograft?
.....change of practice ?

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Consultant Orthopaedic Surgery-Sport Medicine

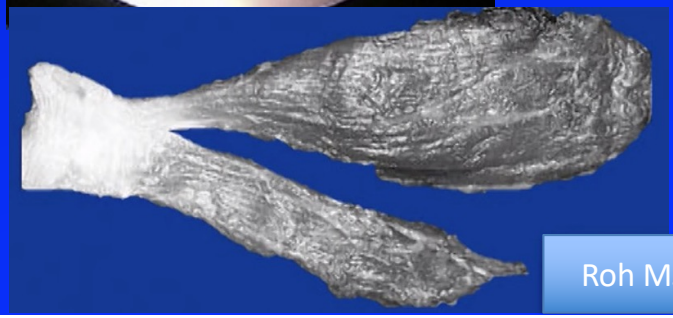
Anatomy

- Rotator Cable
- Rotator Crescent
- Average Thickness
- Bursal Side
- Articular Side







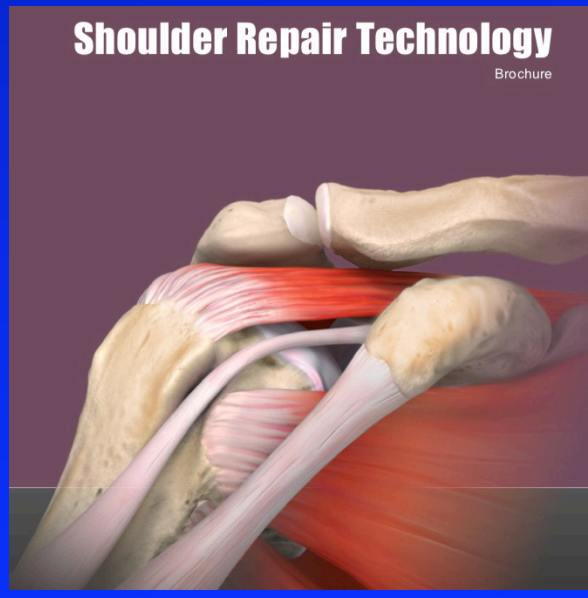


Roh MS. Et al JSES 2000

Disclosures

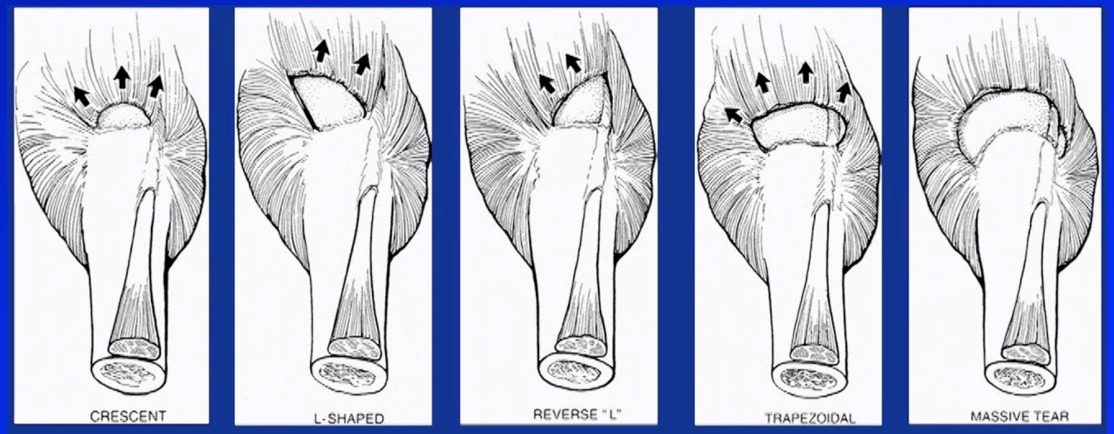
- **I have no disclosures or conflicts of interest related to the content o this presentation**

- **Consultant: Arthrex Inc, Bauerfeind, MEDI**



Introduction

- **Definition** **Tear Size**
  Small 1 cm
  Medium 1-3 cm One Tendon
  Large 3-5 cm
  Massive >5 cm Two Tendons



Ellman H (1993) Rotator cuff disorders.

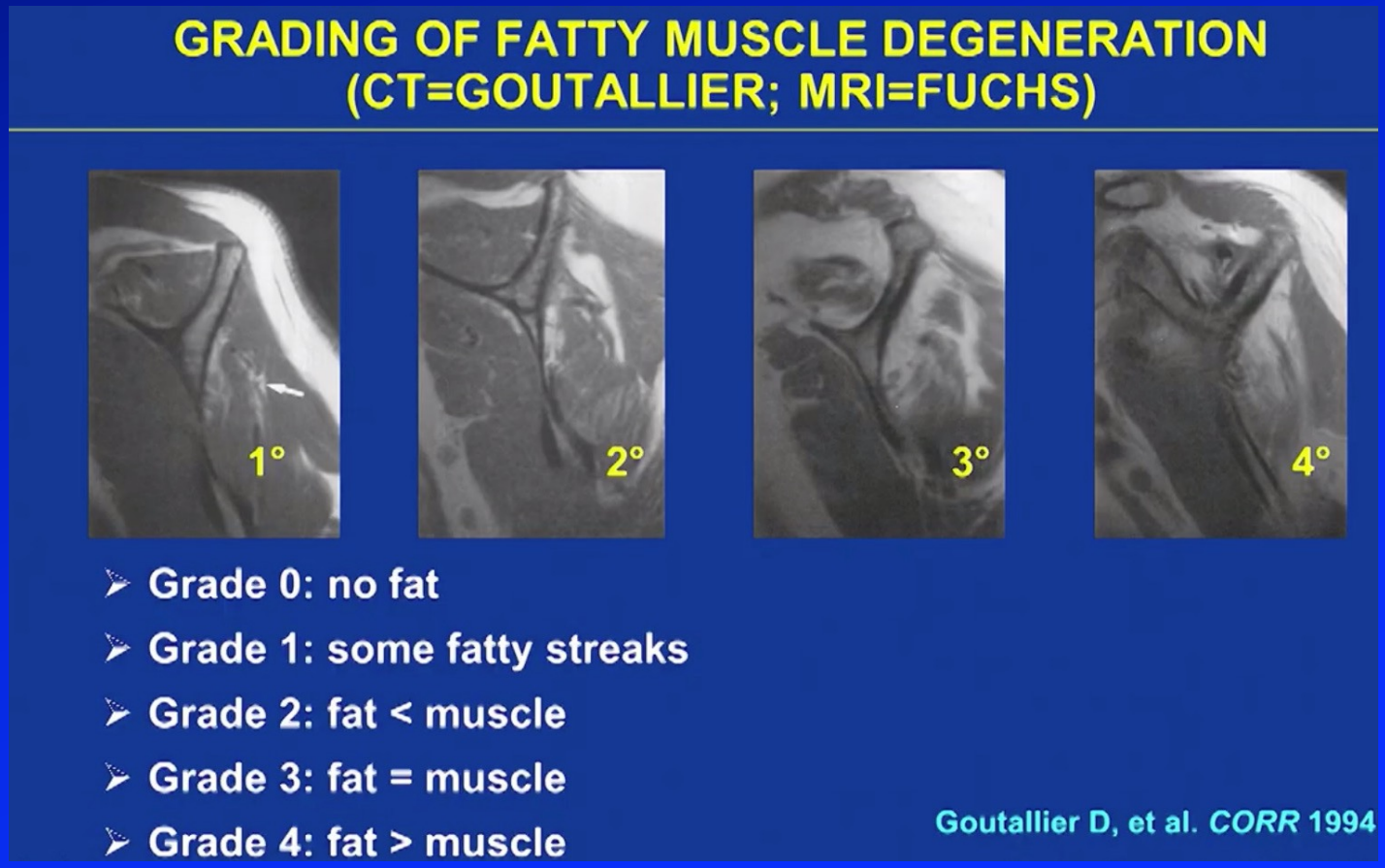
Introduction Imaging 1

- **Acromiohumeral Interval** **(Hamada et al. CORR 1990)**
  Stage 1: Greater than 6 mm
  Stage 2: Less than 7 mm
  Stage 3: Less than 7 mm with acetabulization of Acromion
  Stage 4: Less than 7 mm with glenohumeral Arthritis
  Stage 5: Less than 7 mm with osteonecrosis of humeral head.
- **Arthritis changes**
- **Tendons involved**
- **Retraction**

Introduction Imaging 2

- **Goutallier staging: CT based** (Goutallier et al CORR 1994)
  - Grade I
  - Grade II
  - Grade III
  - Grade IV

3 + 4 NO RPAIR



Arthroscopy

- **Beach chair**
- **Standard Portals**
- **Subacromial Space: Watch Tendon adhesion to acromion**
- **Percutanous Anchor placement**

Identify

- **Tear Pattern**
- **Biceps**

  what´s its role?

  Tenotomy - Walch et al JSES 2005

  Tenodesis – Boilea et al JBJS 2007

Identify

- **Release**
  - Rotator Interval, Suscap first! (AJSM 2010, Vol 38 No 3,2010)
  - Supra / Infra Interval
  - Suprascapular Nerve
    - With massice cuff tears – Mallon et al JSES 2006
    - Resolve after repair . Coustouros et ac, Arthroscopy 2007

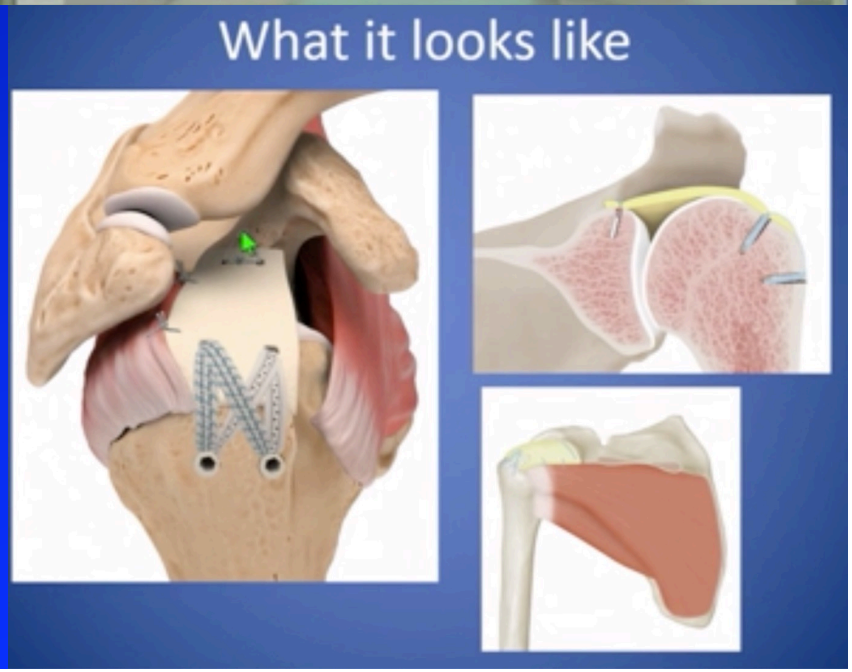
Identify

- **Repair Technique**
  - Margin Convergence
  - Partial Repair
  - Complete Repair

Biologics

- **Dermal allograft**
- **Dermal xenograft**
- **SIS**
- **Neomatrices**





Outcomes

- **What do we measure**
  - Pain Relief?
  - „Retear“ Rate?
  - Functional Improvement?

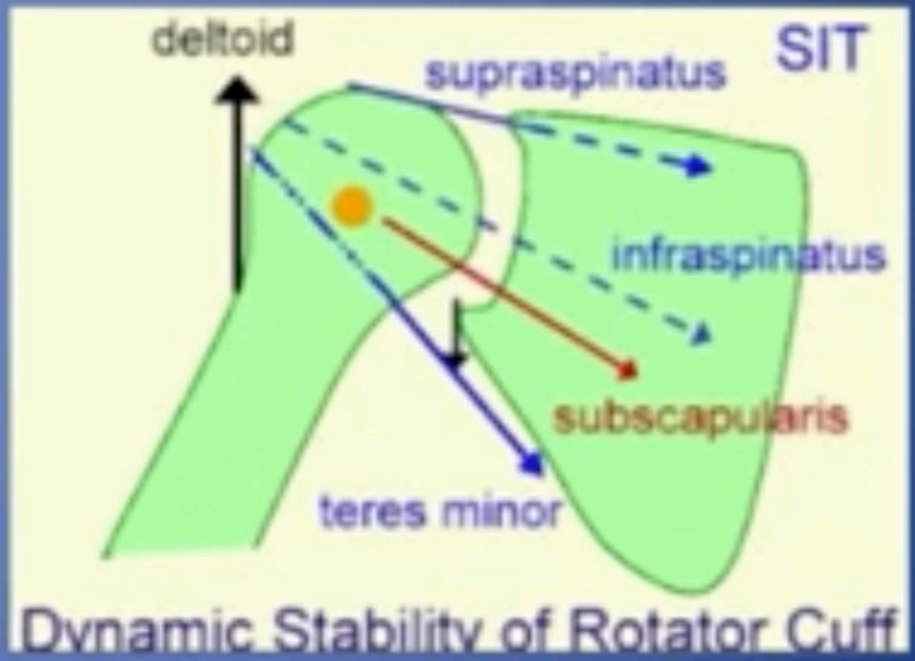
Options for the Irreparable RCT

- **Nonoperative**
  - Anterior Deltoid Strengthening (Ofer-Levy)
- **Debridement + LHBT Tenotomy**
  - Boileau (JBCS), Tuberoplasty (Fenlin)
- **Partial Repair**
- **Tendon Transfer**
- **Perservation of Force Couple**
  - SCR, „Balloon“ /Orthospace
- **CTA Hemiarthropalsty**
- **Reverse Shoulder Arthroplasty**

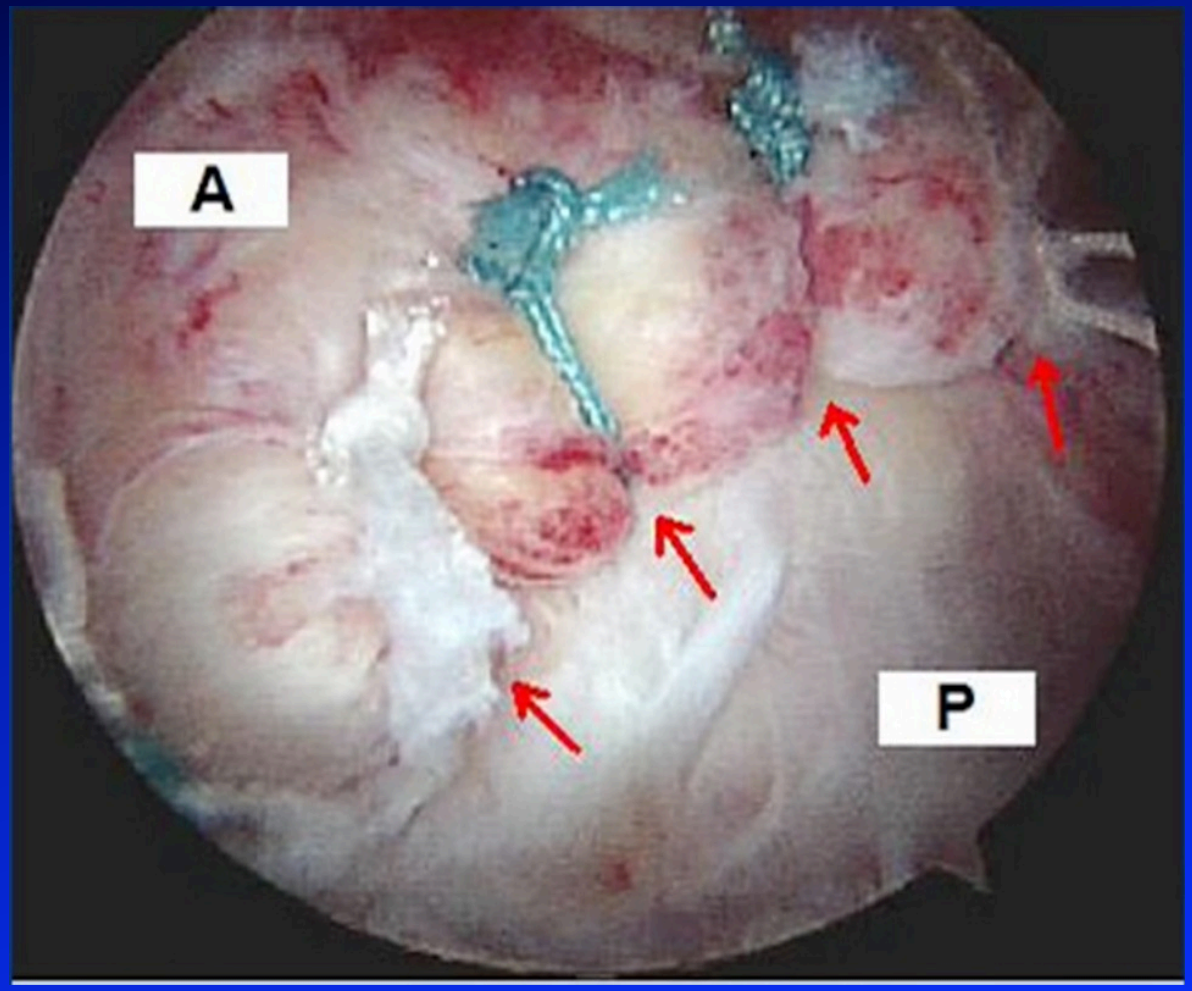
Concepts:

Tenodesis, Force Couple Rebalance

- The Deltoid pulls up
- The intact cuff pulls down: Think of it as single muscle
- SCR might do more to link the muscles and balance couples and provide tenodesis effect

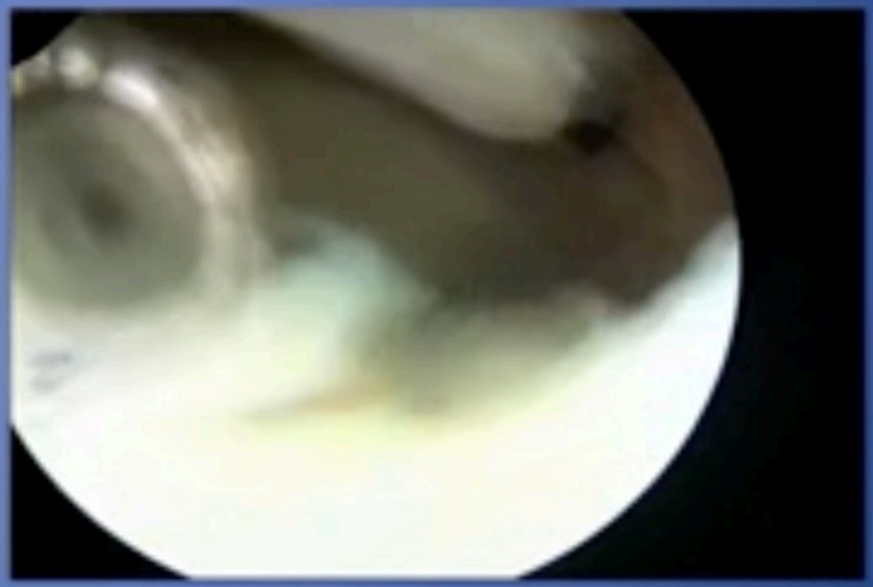


Partial Repair



The Massive Irreparable Cuff?

- Option #1: Debride / Cut the biceps
  - Walch/ Boilleau: doubled constant scores, but most helpful for PAIN –but doesn't improve function
  - 40% conversion to arthroplasty for tenotomy (Tokish et al, 2016)



Massive Cuff Option 2: Reverse Shoulder?

- Results OK;
- Gerber JBJS 2005
- Constant 29%- 64%
- FE: to 100 degrees





Massive Cuff Option 3: Partial cuff Repair/ Augment?

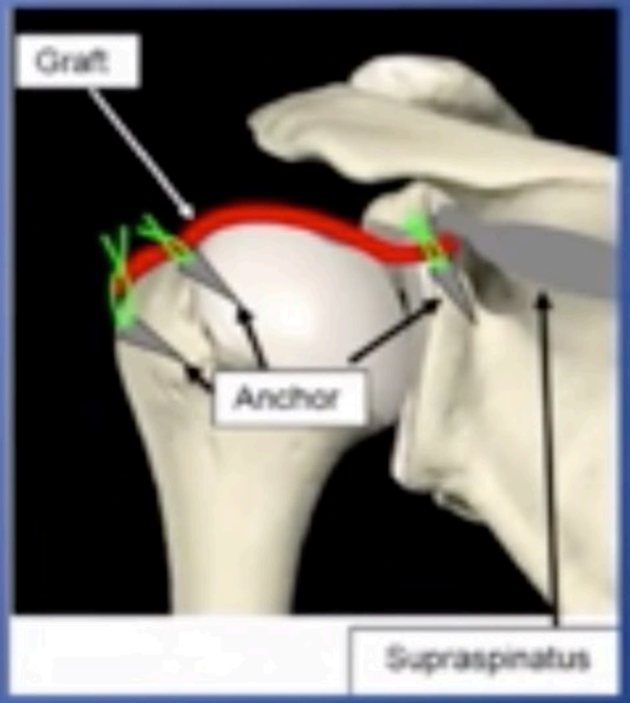
- Burkhart popularized "Partial Repair of cuff" with good results
- Mori : patch autograft vs. partial repair procedure. Arthroscopy 2013
  - patch vs. partial repair:
  - retear of 8% vs. 42%.
- Xenograft Patches: Disappointing results:
- Ciampi, et al;- AJSM 2014: mesh vs. bovine patch
  - 41 % retear with patch-
- G. Gupta, Toth et al: Dermal allograft AJSM, 2012
  - Pain went from 5.4 to 0.9.
  - Flex 111 to 157 and ER 46 to 65
  - Ases went 67 to 89.
  - G1&2 Only

Massive Cuff Option 4
Superior Capsular Reconstruction

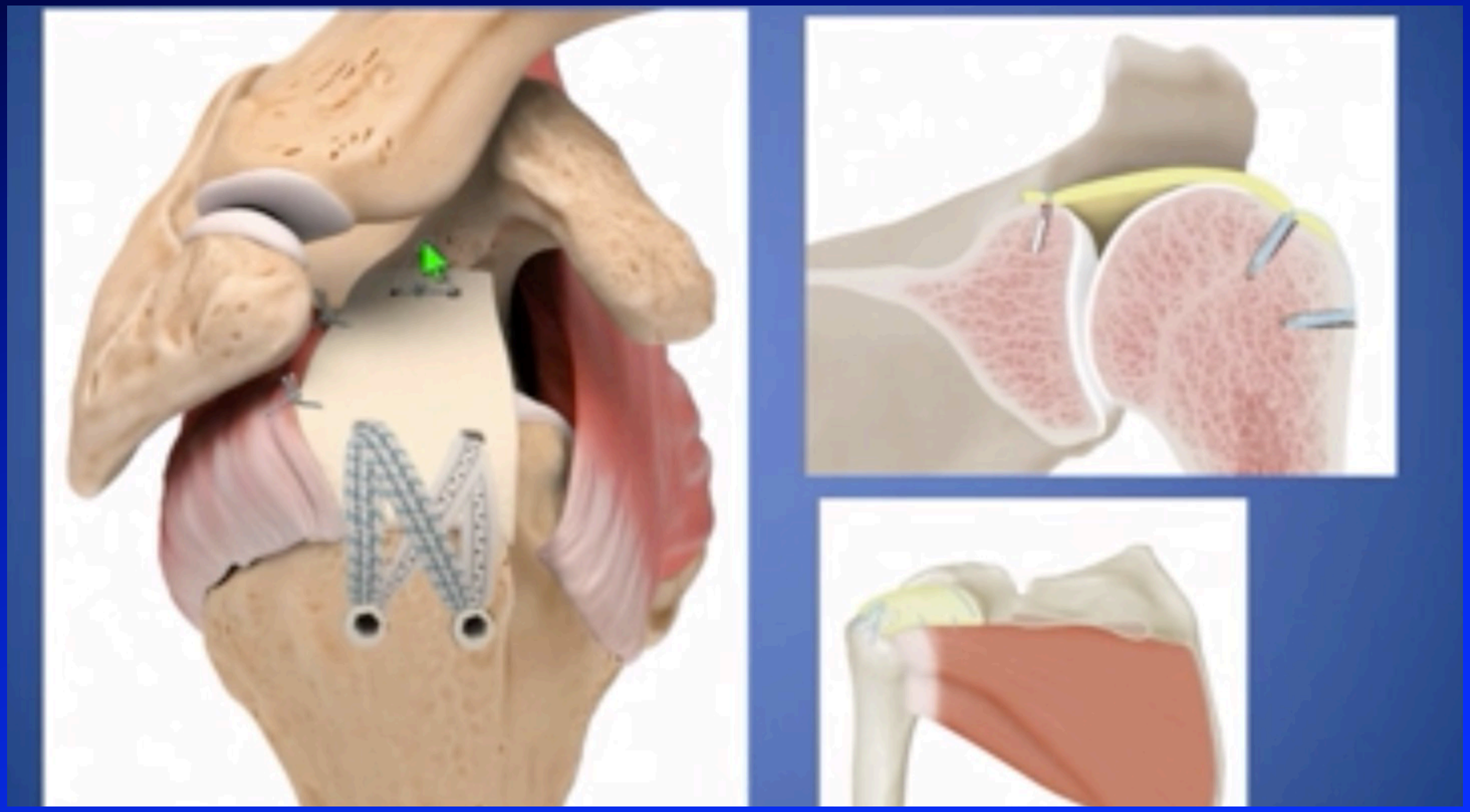
Clinical Results of Arthroscopic Superior Capsule Reconstruction for Irreparable Rotator Cuff Tears

Teruhisa Mihata, M.D., Ph.D., Thay Q. Lee, Ph.D., Chisato Watanabe, M.D., Ph.D., Kunimoto Fukunishi, M.D., Mutsumi Ohue, M.D., Tomoyuki Tsujimura, M.D., and Mitsuo Kinoshita, M.D., Ph.D.

- Superior Capsular Reconstruction Arth 2013
- Patch (TFL) from Glenoid to humerus as a check rein/ FC restoration
- 24 pts at 34 mos
- ASES 24 to 93!!??
- FE: 84 to 148



What it looks like



Clinical Outcomes

Clinical Outcomes

- Mihata (ASES 2015): (autograft TFL)
- 107 patients, 1-8 yr f/u (Avg 3 yr)
- ASES 32 to 93!
- Healed patients did better than non healed:
  - FF 154 vs 115
  - ASES 96 vs. 76
- No superior migration and AHI
- 92% had neither graft or cuff retear

Conclusions

- Promising, but early
- Maybe no bridges burned
- Unanswered questions:
- Tenodesis or re-linking of the forced couples
- Reverse pseudoparalysis – use on G4 Shoulder
- Cost
- Interval Partial Closure?
- Role in cuff tear with Significant DJD?



Thank you

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