



Outcome of lower trapezius transfer to reconstruct massive irreparable posterior-superior rotator cuff tear

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New Light Upon Your Shoulder

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Introduction

Massive posterior-superior rotator cuff tears  Loss of Elevation & External Rotation

Surgical options :

- Arthroscopic Debridement
 - Partial Repair
 - Tendon Transfers
- may not improve symptoms
 - possible progression of the tear
 - progressive proximal migration of the humeral head
 - worsening of the glenohumeral joint cartilage degeneration

Purpose

- To evaluate the outcome of the **lower trapezius** transfer prolonged with Achilles tendon allograft to **reconstruct massive irreparable posterior-superior rotator cuff tear.**

Materials and Methods

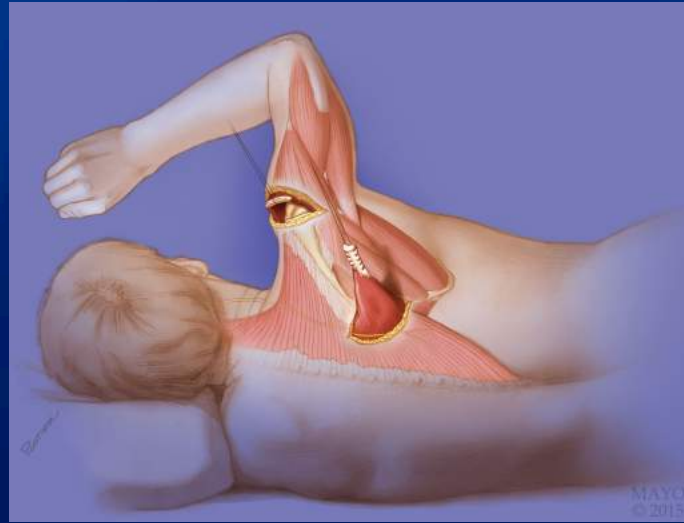
Inclusion Criteria

- *Demographics – inclusion criteria*
 - **33 patients** (27 M, 2 F), 53 yo
 - Lower trap transfer for massive irreparable RC tear
 - F/U > 2y
- *Indications for surgery*
 - Persistent pain / weakness / loss of ROM
 - MRI : massive irreparable posterior-superior tear
 - **Failed conservative ttt**
 - Normal function of lower trap

Materials and Methods

Surgical Technique

2 approaches:



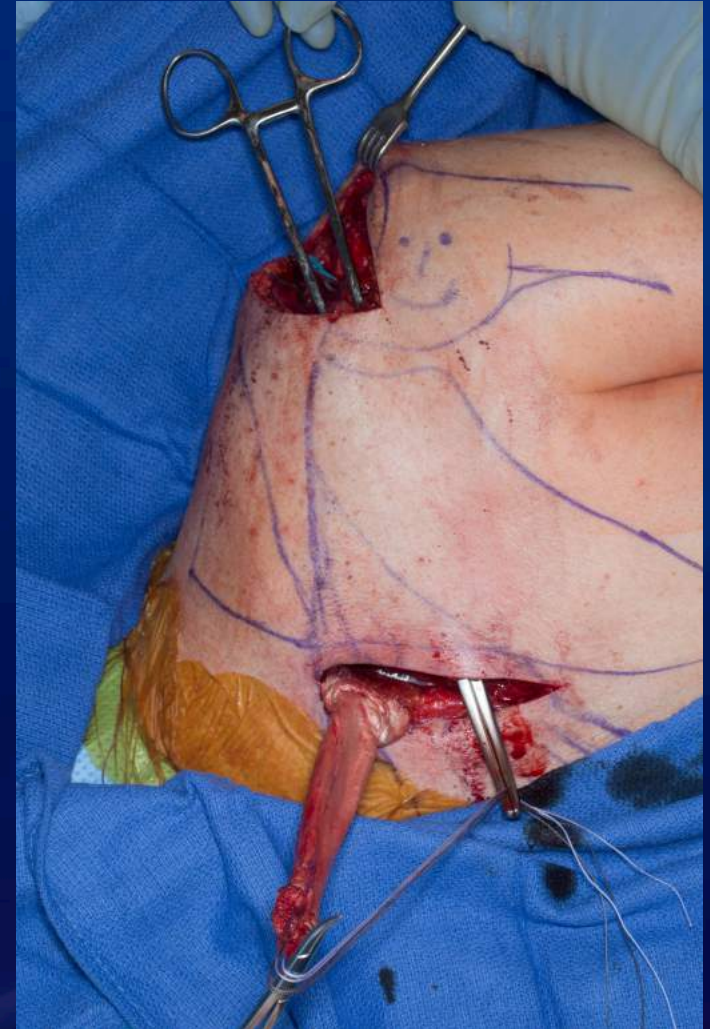
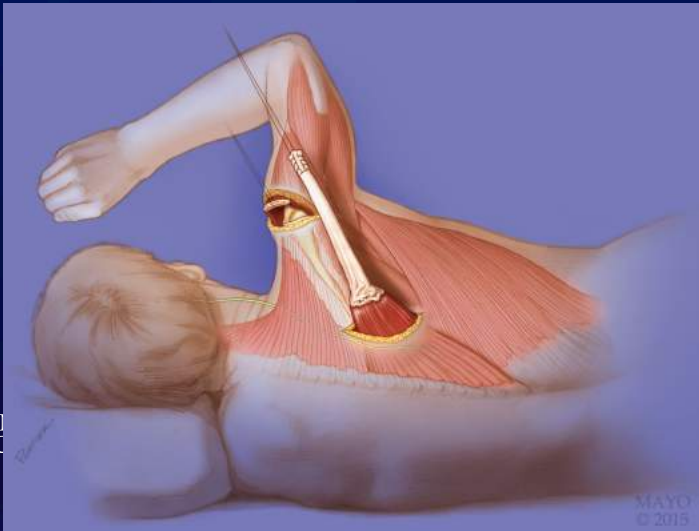
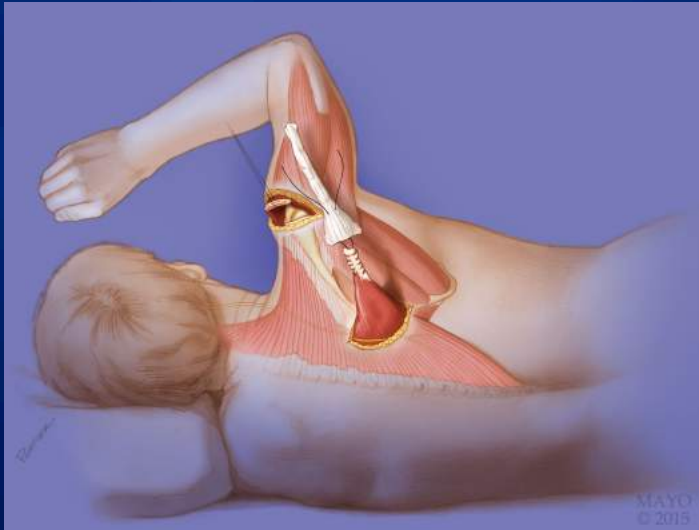
1-Superior with acromion osteotomy

2-Posterior for the harvesting



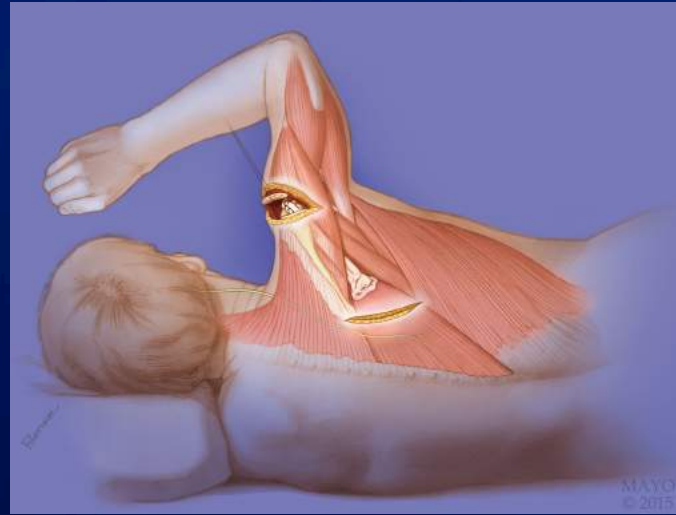
Materials and Methods

Surgical Technique



Materials and Methods

Surgical Technique



Materials and Methods Evaluation

- Pain level
 - *none/mild/moderate/severe with activities / rest*
- ROM
 - *Standard goniometer*
- ER muscle strength
- SSV
- DASH

- Radiographs
 - *proximal migration of the humeral head*
 - *healing of acromial osteotomy*
 - *arthritis*

Results

Clinical

- Mean f/u : 47 months (24-73).
- Range of Motion
 - Significant improvement in all patients ($p < 0.01$)
 - Postop Forward Flexion 120° (80°-150°)
 - Postop abduction 90° (60°-140°)
 - Postop ER 50° (20°-70°)
 - Postop IR unchanged
- Pain
 - Significant improvement in 32/33 patients ($p < 0.01$)
- SSV
 - 54% → 78% ($p < 0.01$)
- DASH Score
 - 52 ± 19 → 18 ± 10 ($p < 0.01$)
- Strength
 - Grade IV or higher

Results

Radiological

- Healing of acromial osteotomy
Radiographical healing in 25/33 patients (no clinical ≠)
- Proximal Migration
26 preoperative proximal migration → improvement
10 - restoration of congruency of joint (AHD 8mm)
16 – improvement but not full reduction
7 no preoperative proximal migration → unchanged
- Arthritis
No signs of progressive arthritis

Results

Complications

- Seroma Formation
4 patients
- Loss of ROM
*1 patient : fall during 1st month of rehab → loss FF/ABD,
ER remained unchanged
US : redundancy in ER → stretch injury*
- Infection
1 patient (BMI = 36 kg/m²) → debridement → fusion

Discussion

- Traditional transfer for massive irreparable tears:
-**Latissimus Dorsi** +/- Teres Major

- Alternative : Lower Trapezius
 - Good clinical results (*Elhassan et al, JBJS / JSES*)
 - Biomechanical Analysis : better ERMA with the arm adducted (*Hartzler et al. JSES*)
 - Similar line of pull of LT to mimic ISP
 - Ease of training → trapezius contracts during ER (*Smith et al. JSES*)

Conclusion

- Transfer of Lower Trapezius prolonged with Achilles tendon allograft to reconstruct massive irreparable posterior-superior rotator cuff tear
- Good outcomes in most patients → longer follow-up is required to confirm durability
- Simple transfer except for acromial osteotomy →
ARTHROSCOPIC FIXATION OF THE TRANSFER