

Minimum 2-year patient reported outcomes following fixation of displaced greater tuberosity fractures: A Matched Cohort Analysis

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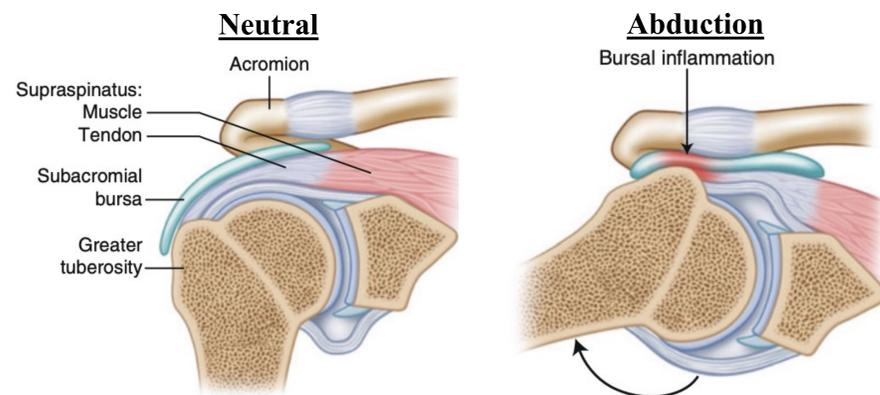
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INTRODUCTION

- The greater tuberosity is one of the key attachment sites for the rotator cuff tendons
- Isolated greater tuberosity (GT) fractures account for approximately one fifth of all proximal humerus fractures^{1,2}
- These fractures are often seen in middle-aged patients after a glenohumeral dislocation or trauma to the lateral shoulder³⁻⁶
- Surgery is generally indicated for displacement greater than 5 mm or 3 mm in athletes and overhead workers^{7,8}
- Operative management aims to restore normal anatomy, prevent subacromial impingement, pain, and shoulder dysfunction⁹
- Outcomes after GT fracture fixation remains relatively unknown



Warth RJ, Millett PJ. Springer 2015.

PURPOSE

The purpose of this study was to evaluate and compare patient-reported outcomes (PROs) following isolated GT fracture fixation to acute rotator cuff repair (RCR) at a minimum of 2 years

HYPOTHESIS

We hypothesize that patients who undergo fixation of GT fractures with a double-row technique will have equivalent PROs to those treated for an acute rotator cuff tear

METHODS

- Retrospective chart review of prospectively collected data
- Included patients aged 18-80 years old who had surgery for a GT fracture or an acute rotator cuff tear from 2006-2018
- Matched 1:3 based on time to surgery
- Minimum 2-year follow-up
- Patient reported outcomes (PROs): SF-12 PCS, ASES, SANE, QuickDASH, and patient satisfaction
- Utilized MCID, SSB, PASS for the ASES score
- Demographic/clinical variables:
 - Days from injury to surgery
 - Sex
 - Age
- Failure defined as:
 - Fracture nonunion
 - Revision surgery



RESULTS

GT fracture fixation group

- 12/14 (85.7%) pts with min 2-year f/u (avg: 6.3 y; range: 2-11 y)
- 16.1 days to surgery (range 1-39)
- Pre- to post-op ASES (p=.018) and SF-12 PCS (p=.110)

Acute rotator cuff repair group

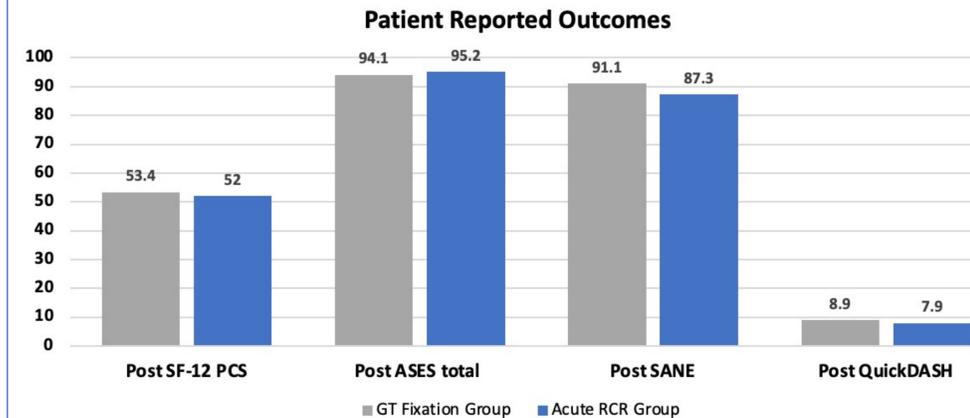
- 39/43 (90.6%) pts with min 2-year f/u (avg: 7.0 y; range: 2-13 y)
- 20.4 days to surgery (range 1-45)
- Pre- and post-op ASES (p<.001) and SF-12 PCS (p<.001)

ASES Score

	MCID	SCB	PASS
GT Fx Fixation	100% (6/6)	100% (6/6)	91% (10/11)
Acute RCR	100% (25/25)	96% (24/25)	94% (34/36)

RESULTS

No sig. difference in post-op PROs (All p>.172)



- There was no difference in postoperative PROs between both groups when double-row repairs were performed (All p>.404)
- Two patients (14.3%) in the GT fracture fixation group reported stiffness postoperatively
- One patient (2.3%) in the acute RCR group had recurrent shoulder pain and subsequently underwent revision surgery.

LIMITATIONS

- Population: the GT group is relatively small and heterogeneous in terms of interventions
- Outcomes: SANE and QuickDASH were not collected until 2010, thus pre- to post-op improvement could not be reported
- Generalizability: This is a sports medicine referral center, thus our patients are generally healthy with low comorbidities

CONCLUSIONS

- Min 2-yr PROs show high outcome scores whether treated by open reduction and internal fixation or arthroscopic fixation
- Treatment selection should be based on fracture morphology, post-operative goals, lifestyle, and shared-decision making
- The improvements in PROs are similar to those achieved with acute rotator cuff tears that were fixed arthroscopically with RCR

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