Conservative Management of a Massive Rotator Cuff Tear and Partial Tear of the Long Head of the Biceps: A Case Report

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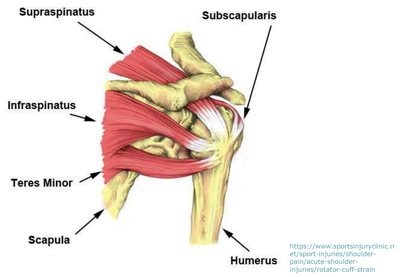
SCACCIA PHYSICAL THERAPY

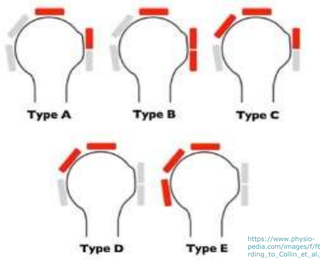
Background

- A rotator cuff tear (RCT) is a common injury to the shoulder musculature that increases in prevalence with age.[1]



https://www.sportsinjuryclinic.net/sport-injuries/shoulder-pain/acute-shoulder-injuries/rotator-cuff-strain

- RCT's can be classified into five categories determined by the muscular involved:
  - Type A: supraspinatus & superior subscapularis
  - Type B: supraspinatus & entire subscapularis
  - Type C: supraspinatus, superior subscapularis & infraspinatus
  - Type D: supraspinatus & infraspinatus tears
  - Type E: supraspinatus, infraspinatus & teres minor[2]



https://www.physio-pedia.com/images/f/f6/Rototor_cuff_tears_according_to_Collin_et_al.jpg

- Massive RCT is classified as ≥5cm in size,[3] or complete tear of two or more tendons.[4]
- Some massive tears may be considered irreparable due to the extent of tendon retraction, atrophy, arthritis and mobilization.
- Current literature supports the use of physical therapy (PT) as the primary conservative treatment method for irreparable RCTs.[6-7]

Purpose

- The purpose of this case report was to establish a comprehensive physical therapy plan of care in order to improve the shoulder function of a patient with a non-traumatic, massive RCT, with subsequent partial tear of the long head of the biceps.

Case Description

- The patient was a 76-year-old female who presented to PT with right shoulder pain due to nontraumatic, massive RCT.
- MRI results of her right shoulder:
  - Complete tear of the supraspinatus & infraspinatus
  - Delaminating full-thickness tear of the distal subscapularis
  - Subluxation & partial tear of the long head of the biceps tendon
  - Teres minor appeared frayed
- Patient was not a candidate for surgical intervention due to amount of tendon retraction & muscle atrophy
- She began experiencing her shoulder pain six weeks prior to her PT initial evaluation.
- Reported pain down her right upper extremity that did not travel beyond her elbow & denied any numbness.
- Reported symptom provocation and impaired mobility while reaching overhead, driving, dressing, bathing and cooking.

Timeline of Treatment

Initial Evaluation
- DASH score: 54% Impaired
- NPRS: 5/10 at worst, 2/10 at best
- Impaired ROM, Strength, functional mobility
- Right shoulder flexion 75° with pain and compensation

Week 1-2
- Patient reports sharp pain with overhead motion
- Patient demonstrated continued compliance with initial HEP

Week 3-4
- Set back during week 3
- Modified POC due to pain limiting mobility
- Symptoms from set back subsided by Week 4

Week 4-5
- DASH score: 51 % Impaired
- NPRS: 2/10 at worst, 0/10 at best
- Right Shoulder Flexion 118° with mild pain and compensation
- Continued focus on improving shoulder strength and mobility

Week 6-7
- Update HEP to alternating 2 day strength and conditioning program for upper extremity strength, mobility and stabilization
- Patient demonstrates improvements in overhead motion

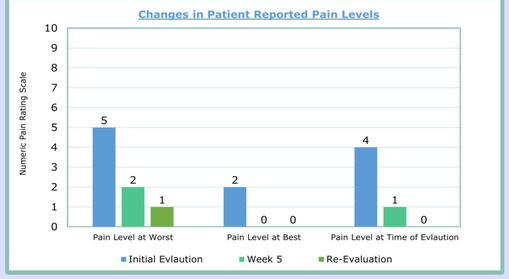
Week 8-9
- No treatment sessions during week 9
- Set back during week 9
- Increased pain when trying to place object on high shelf.
- Symptoms from set back subsided by Week 10

Re-Evaluation
- DASH Score: 27% Impaired
- NPRS: 1/10 at worst, 0/10 at best
- Right Shoulder flexion 174° of pain-free motion
- Developed Final HEP

Interventions

Outcomes

Tests & Measures	Initial Evaluation		Re-Evaluation
Shoulder AROM	Right	Left	Right
Flexion	75° pain & mild compensation	145°	174°
Abduction	63° pain & mild compensation	140°	170°
Extension	40°	52°	50°
Functional ER Reach	Patient able to reach C7	Patient able to reach T2	T2
Functional IR Reach	Patient able to reach L2	Patient able to reach ≥T5	T12
Shoulder MMT	Right	Left	Right
Flexion	3-/5	4+/5	4-/5
Extension	4/5	5/5	4+/5
Abduction	3-/5	4+/5	4/5
Internal Rotation	4/5	4+/5	5/5
External Rotation	3-/5	4+/5	4-/5
DASH Score	54% Impaired		27% Impaired



Discussion & Conclusion:

- Manual PROM and progressive AROM ther-ex. appeared to have the greatest benefit to the patient's improved gross shoulder ROM.
- Further research is needed to compare the outcome of specific therapeutic interventions for improving shoulder mobility and strength for this patient.

Acknowledgement

- The author acknowledges Matt Somma, PT, MTC, DPT,CSCS, for assistance with case report conceptualization and Emily Marotta, DPT, for supervision and assistance with patient management.

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