A Novel Treatment for a Common Cause of Shoulder Pain

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Introduction

- Prevalence of shoulder pain is greater in patients with paraplegia compared with the rest of the population and increases regularly after an SCI.1
  - 5 years: 30-50%
  - 20 years: 70%
- Shoulder pain can negatively affect functional measures including decreased speed and efficiency of movement, increased fatigue and decreased tolerance for prolonged work and leisure activity.2
- Treatments for tendinopathy related shoulder pain
  - Conservative: pharmacological agents, physical therapy, equipment modifications, education3
  - Surgery: studies on rotator cuff surgery outcomes in persons with SCI are limited and conflicting
  - Minimally invasive biological interventions and regenerative treatments

Case Presentation

- 54-year-old male weight lifter with a past medical history of T10 complete spinal cord injury (SCI). American Spinal Injury Association (ASIA) grade A, surgical repair of left rotator cuff tear, presented to our outpatient clinic with complaint of right shoulder pain while weight training 3 years prior.
- His primary physician ordered an MRI which revealed a partial-thickness tear of the supraspinatus tendon along with significant degenerative changes of the AC joint and labrum.
- He was referred to an orthopedist who advised him to decrease his workout regimen and conservatively manage his pain. He received a corticosteroid injection (CSI) that provided relief at the time, with pain reported post 90 degrees of abduction.
- Palpation: no tenderness at the bicipital groove, greater tuberosity, and acromioclavicular (AC) joint
- Strength: Strength was rated as 5/5 throughout bilateral upper extremities with exception of pain limited right shoulder abduction and external rotation
- Special Maneuvers: positive Neer’s and Yocum’s tests, a painful arc, and positive O’Brien’s test for the labrum.

Ultrasound Examination

- Partial-thickness tear of the supraspinatus tendon, degenerative changes of the labrum, and mild cortical irregularity. Minimal tendinosis of the subscapularis tendon was also appreciated.
- Dynamic testing of the supraspinatus and subscapularis did not reveal impingement.

Clinical Course

- The procedure was conducted a week after evaluation, with 2.5ml of MFAT injected into the supraspinatus tear, 2ml into the subacromial bursa, and 1ml into the AC joint.
- Postoperatively, he began a functional rehabilitation program at home.

- Patient was cleared to resume activities, including weight-lifting after 8 weeks without restrictions

- Outcome measures included a numerical rating scale for shoulder pain (NRS; range 1-10; 0 = “no pain” and 10 = “pain as bad as you can imagine”), the Wheelchair User’s Shoulder Pain Index (WUSPI; range 0 to 150, with higher values representing worse shoulder pain and function), and the Brief Pain Inventory interference items (BPI-17).

References

1. Kessler Institute for Rehabilitation, West Orange, N.J.
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