

# Shoulder Lump in a Young Weightlifter

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## History

An 18-year-old male Olympic weightlifting athlete presented to the family medicine residency clinic with a painless "lump" of his right shoulder. He first noted the mass during a weightlifting meet, after a clean and jerk lift. During the remainder of the competition he experienced pain in the area during his cleans when catching the barbell on the shoulders. Following this competition, the mass fluctuated in size but was painless. The athlete presented to our clinic two months after his initial injury. He had continued his typical training regimen, performing his clean and jerk lifts approximately 50 times per week without pain. Despite the noted lump, he continued to increase his weight resistance. He denied fevers, chills, weight loss, night sweats, neck, shoulder girdle, or right upper extremity pain, weakness, numbness or tingling.

## Physical Exam

**Vitals:** BP 126/66, Pulse 63, Height 5'11", Weight 193 lbs **Musculoskeletal:** No pain to palpation overlying right and left acromioclavicular (AC) joints. Full range of motion (ROM) cervical spine. Painless, full ROM of bilateral shoulders in flexion, abduction, internal rotation and external rotation. Strength in bilateral upper extremities 5/5 throughout. No pain over the AC joint with cross-body adduction test bilaterally.  
**Skin:** 1.5 x 1.5 cm cystic structure overlying right AC joint, without redness, swelling, warmth.



## Differential Diagnoses

- 1) Acromioclavicular joint cyst
- 2) Acromioclavicular joint sprain
- 3) Distal clavicle osteolysis
- 4) Traumatic lipoma overlying acromioclavicular joint
- 5) Acromioclavicular joint synovial chondromatosis

## Tests and Results

A four view right shoulder x-ray was performed after the athlete's initial office visit showing no fracture, dislocation, or radiopaque foreign body. Subsequently, an ultrasound of the right shoulder was completed and showed a maintained right AC joint with prominent subcutaneous fatty tissue without hyperemia in the area of the patient's mass. This tissue did not appear to be communicating with the AC joint. Otherwise, the ultrasound examination of right shoulder was normal.



## Final Diagnosis

Traumatic lipoma overlying the acromioclavicular joint

## Discussion

Shoulder injury is one of the most common injuries in Olympic weightlifting athletes including but not limited to rotator cuff injury, AC joint sprain, shoulder dislocation, and labral injury(1). Lipomas in the general population are common but less likely to be caused by trauma. One theory regarding traumatic lipomas, although controversial, is explained by adipose tissue prolapsing through fascia resulting from direct impact and pre-adipocyte differentiation and proliferation mediated by cytokine release following the soft tissue trauma and hematoma formation(2). This athlete's recent increase in weight resistance may account for his injury.

## Outcome

The patient eventually was able to return to his normal full weight lifting routine without pain. His lipoma has continued to fluctuate in size but otherwise remains asymptomatic. We will continue to observe the mass unless it begins to cause pain or interfere with the athlete's function.

## Return to Activity/Follow Up

The athlete was initially advised to stop performing the clean and jerk maneuver. Upon reevaluation at two months, he admitted a slight decrease in size of the "lump" since stopping the offending exercise. The athlete was then evaluated by primary care sports medicine who recommended a progressive return to weight training and reevaluation if pain developed or symptoms became limiting of function.