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Conservative management of a type III acromioclavicular separation: a case report and 10-year follow-up

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Abstract

Objective: The purpose of this study is to present a 10-year prospective case of a right incomplete type III acromioclavicular (AC) separation in a 26-year-old patient.

Clinical Features: A 26-year-old male patient fell directly on his right shoulder with the arm in an outstretched and overhead position. Pain and swelling were immediate and were associated with a "step deformity." The patient had limited right shoulder range of motion (ROM), strength, and function. Radiographic findings confirmed a type III AC separation on the right. At 1-year follow-up, the patient did not report any deficits in ROM or function, but did note a prominent distal clavicle on the right. At 3-, 5-, 7-, and 10-year follow-up, the patient did not report changes from 1 year. The radiographic findings at the 10-year follow-up indicated mild degenerative joint disease in both AC joints and mild elevation of the distal clavicle on the right.

Intervention and Outcome: The patient received chiropractic care to control for pain, swelling, and loss of ROM. The patient received acupuncture, joint mobilizations, palliative adhesive taping of the AC joint, Active Release Technique, and progressive resisted exercises. Radiographic study was done at the time of the injury and at 10 years to observe for any osseous changes in the AC joint.

Conclusion: The patient yielded excellent results from conservative chiropractic management that was reflected in a prompt return to work 19 days after the injury. Follow-up at 1, 3, 5, 7, and 10 years exhibited absence of residual deficits in ROM and function. The "step deformity" was still present after the injury on the right.

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Introduction

Acromioclavicular (AC) joint separations are disruptions of the AC ligament, coracoclavicular ligament, and/or deltopectoral fascia. Separations are described based upon the degree of articular disruption between the distal clavicle and the acromion process. The most common mechanism for an AC separation is with the arm in internal rotation and full abduction and/or falling directly onto the superior aspect of the shoulder. The most common separation is type II of the Rockwood classification (Fig 1). The sports with the highest incidence of AC joint dislocation are bicycling (29%) and skiing/snowboarding (10%), which are associated with falls onto the shoulder.[1]

Among professional performers and dancers, the career prevalence of injury ranges from 40% to 84%, with lower extremity and low back injuries being the most commonly reported.[2] Shoulder injuries are considered uncommon among professional performers. As such, the importance of recognizing the interplay of aesthetics and athletic demands imposed on the performer is critical. Impairments can negatively affect show productions and careers if shoulder injuries are not appropriately addressed. Furthermore, injury surveillance and injury management among dancers and performers have been limited.[2] This case report attempts to provide insight into a rare injury occurring in a dance performer that can be managed conservatively for return to a performing career.

Type III AC separations pose a controversial course of therapeutic management.[3] The management for this injury has typically been surgical[4]; however, there is a growing consensus for conservative management, which is argued to be as effective for allowing expeditious entrance to physical rehabilitation and subsequent return to activity.[5] The basis for surgical intervention is the premature onset of degenerative processes to the AC joint and associated limitations in range of motion (ROM), strength, and upper extremity function. Conservative strategies involving wearing a sling, modalities, and progressive rehabilitation have demonstrated minimal dysfunction and minimal evidence for degeneration. The literature does not support superiority of either method for the management of a type III separation.

The purpose of this report is to describe the case of a performer who fell on his shoulder with his arm overhead in an outstretched position. He was treated conservatively and had a successful clinical result at 1 year posttherapy. This case illustrates the initial conservative management for this injury with a prompt return to activity. Secondarily, this case demonstrated with long-term follow-up (10 years) the sustained functional outcome yielded without the negative consequences for electing for conservative management of a type III AC separation.

Case

History

A 26-year-old, right-hand–dominant, male dance performer fell onto his right shoulder in an overhead and outstretched position while diving forward. This injury occurred the day before presenting to the clinic. The patient gave consent to have personal health information published without divulging personal identifiers. The pain was the primary complaint and was localized to the right AC) joint with associated stiffness across the shoulder and base of the neck. Pain was initially described as being sharp at the onset of the injury and progressed to a constant ache and throbbing sensation. Pain was verbally rated an 8 out of 10 (0 being no pain and 10 denoting the worst pain as described with testicular torsion from a previous injury). Right shoulder pain was reported with all active movements; however, lifting the right arm in an outstretched position (vs with the elbow bent) was noted as being the most bothersome. The patient attended the local hospital the same day of the injury; was prescribed naproxen, acetaminophen, and codeine; and was equipped with an arm sling for right shoulder immobility for which he found relief. The arm sling placed the affected right shoulder in an adducted and internally rotated position. Numbness, tingling, and weakness were not reported into the right arm, forearm, and hand at any time since the onset of the injury. The patient was concerned with his inability to perform in a local stage production where he was the main actor. The main duties were to include climbing, wrestling, and lifting overhead other actors in the production. The patient denies any previous injury to the affected shoulder. His medical history was noncontributory to the presenting injury.

Physical examination

The patient was noted to be in mild distress as a result of the right shoulder pain. Upon inspection of the right shoulder, there were signs of ecchymosis, local soft tissue swelling (fountain sign), and a mild abrasion