Coracoid Base Fractures: A Missed Variant of the Rockwood's Acromioclavicular Joint Injuries

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Purpose: The coracoid process makes up an important part of the superior shoulder suspensory complex (SSSC) to the extent that it has been referred to as the "lighthouse of the shoulder." We present our experience and understanding of uncommon coracoid process injuries, which are reported sparsely as case reports and have no consensus on preferred fixation methods. The observation of the coracoid base fractures associated with acromioclavicular (AC) joint injuries, which are sometimes subtle, implies this is a missed variation in the Rockwood classification scheme, where the point of failure is at the base of the coracoid instead of the coracoclavicular ligaments.

Methods: We report on five cases of coracoid base avulsion fractures that were identified as SSSC failures and managed surgically. The AC joint reduction and referencing with the intact part of the acromion with the help of a hook plate results in reduction of the coracoid as well as functional off-loading of the coracoid process, allowing it to heal in a reduced position. The hook plate is later removed after osseous union of the coracoid is confirmed.

Results: Fixation of the SSSC injuries with coracoid base avulsion and of the AC joint injury with a hook plate resulted in indirect reduction of the coracoid, removing the necessity of direct reduction and/or fixation of the coracoid process itself and allowed healing of the injury in all cases. Appropriate technique and timely removal of the hook plate avoided problems of acromial erosion in all cases and allowed appropriate healing of the shoulder girdle with a much simpler procedure, without having to directly manipulate or fix the coracoid.

Conclusion: The understanding of the injury mechanics reinforced by the fact that the derived surgical technique worked reliably and reproducibly suggests that the particular injury pattern is within the spectrum of the AC joint injuries as described and classified with Rockwood classification, although the failure point is osseous at the base of the coracoid rather than through the coracoclavicular ligaments. Explaining these injuries in this manner will simplify their management in the hands of upper limb and trauma surgeons.