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Case Report

Biplanar fixation of acromio-clavicular joint dislocation associated with coracoid process fracture: Case report

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ABSTRACT

Introduction: Acromioclavicular (AC) joint injury associated with coracoid process (CP) fracture is a rare injury and only case reports had been published in the literature. Although AC joint injury is not uncommon, there is controversy as regard the best stabilization method whether to use wires, hook plate, arthroscopic reconstruction or the recently described techniques of anatomic restoration of both the coracoclavicular (CC) and acromioclavicular (AC) ligaments to add stability in both the vertical as well as the horizontal plane for the AC joint. Isolated CP fracture rarely necessitates surgical intervention; but in association with AC joint injury; a controversy as regard best management, surgical approach, technique of stabilization and implant used is present due to paucity of literature.

Patient and method: A 36 years old manual worker who sustained a combined injury of AC joint (grade III) and CP comminuted base fracture had been treated surgically in our hospital using a biplanar fixation technique; blind 4 mm cannulated screw for the CP fracture and anatomic reconstruction of the AC ligament using FibreTape (Arthrex, Naples, FL); to add stability in both the vertical and horizontal plane. Follow up was done for one year.

Results: After completion of rehabilitation program, patient could return to work with no shoulder pain in ten weeks postoperatively. Till the last follow up there was no evidence of loss of reduction or shoulder pain with a Constant score of 86.

Conclusion: Our technique in combined AC joint and CP fracture, address both injuries to add biplanar AC joint stability allowing accelerated rehabilitation and avoids metal hardware complications.

Introduction

Acromioclavicular (AC) joint dislocation accounts for 9–12% of all shoulder injuries [1]. It occurs most commonly due to direct impact on the shoulder especially in sports activities and road traffic injuries [2]. The association of coracoid process (CP) fracture to such an injury is rare and only case reports had been published regarding this situation [3].

Recently, concerns as regards the stability of the AC joint in both the vertical and horizontal planes have been issued [4]. Many techniques had been described to address such stability in anatomic pattern restoring both the CC and AC ligaments [5,6]. Although fixation of isolated CP fracture is rarely indicated unless involving part of the glenoid, evident compression of the suprascapular nerve or brachial plexus or limiting shoulder internal rotation, its association with AC dislocation simulates the CC ligaments complete disruption [7].

This report presents the positive outcome of rigid stability in a case of AC joint dislocation associated with CP fracture in which a

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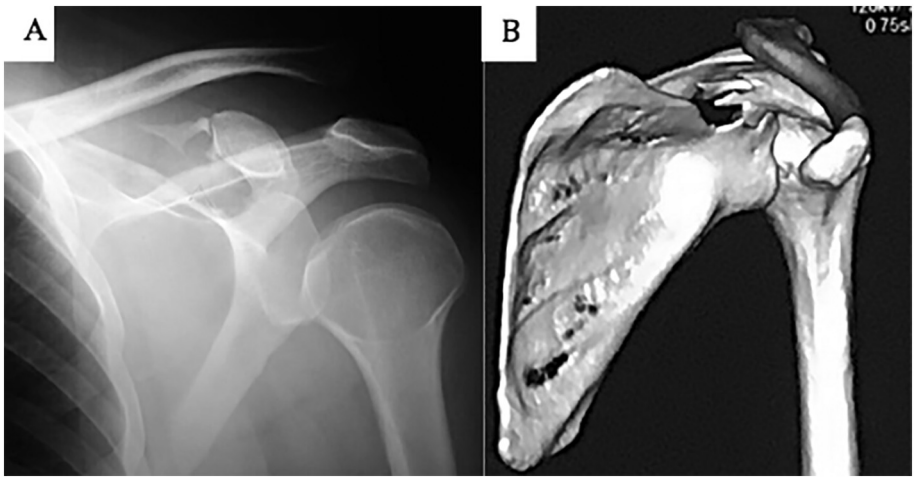

Fig. 1. A, B: (A) X-ray of left shoulder showing grade III AC dislocation, (B) 3DCT scan showing comminuted fracture of CP base.

fixation in both the horizontal and vertical planes was achieved allowing accelerated rehabilitation and rapid return to work.

Case report

On trauma call, a 36 years old male patient, manual worker, came to our hospital following a direct fall on his left shoulder from a 2 m height. A painful bony prominence on the left shoulder with the arm held by other side raised a clinical suspicion of AC joint dislocation that was confirmed with routine x-ray views of AC joint (type III Rockwood and Green classification). A similar CC distance in comparison to the other normal side suggested CP base fracture that was confirmed by CT scan, [Fig. 1].

Upon admission, planning of surgical intervention supposed different questions as regard position, approach, fixation technique and postoperative care. Review of available literature was done and only case reports found.

Operation decided on the next morning. After administration of 1.5 g of 3rd generation cephalosporin, the patient was placed in a beach-chair position on a translucent orthopedic table. Routine upper limb draping and sterilization allowing free arm positioning during surgery was done. Horizontal S-shaped skin incision centered over the AC joint was done. Deep dissection to expose the antero-superior distal clavicle end and the AC joint splitting the anterior deltoid muscle fibers continued till exposure of the upper CP surface.

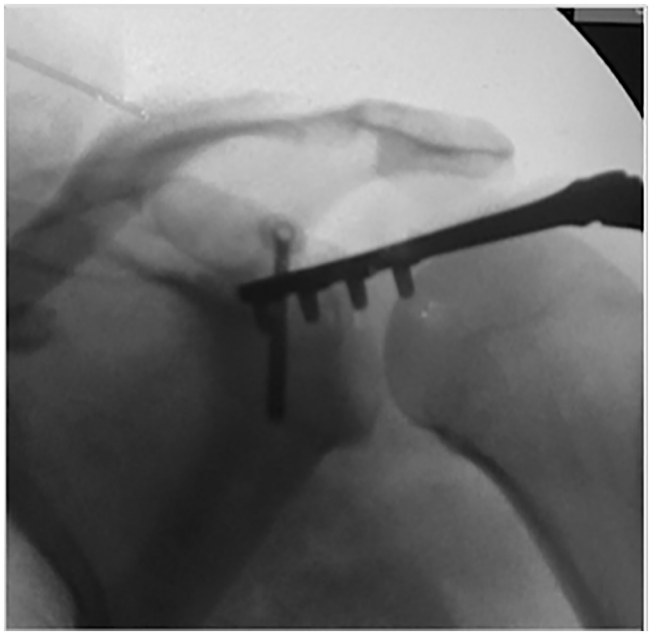

Fig. 2. Intraoperative fluoroscopy after indirect reduction of CP showing AC joint reduction.