Case Report
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Less Extensive Approach for Management of Chronic Anterior Dislocation of Shoulder: A Case Report

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ABSTRACT

Introduction: Shoulder joint dislocations account for nearly 50% of all dislocation of joints in our body. If dislocated joints are left untreated, it becomes very difficult to manage subsequently leading to poorer outcome.

Method: We present a 54-year-old gentleman, who was initially managed by traditional bone setter as a case of dislocation of shoulder 3 months ago. However, patient noticed no improvement and visited to our center with deformed painful right shoulder and reduced range of motion of right shoulder.

Intervention: Clinical-radiological evaluation showed irreducible anterior dislocation of his shoulder. We managed him with an open reduction by coracoid osteotomy without other extensive procedure like bone grafting.

Conclusion: Chronic or neglected dislocated shoulder joint can be managed by less extensive open procedure without any complications or the need to perform extensive procedures.

Keywords: *Shoulder Dislocation, Coracoid Osteotomy, Traditional Bone Setter, Neglected, Open Reduction, Traditional Method*

Introduction

The shoulder joint, one of the most unstable joints in our body due to its anatomy and biomechanics, accounts for 50% of all dislocations. Recurrence rate of shoulder re-dislocation is more common among the younger population, With risk of dislocation as high as 95% if the age of patient is 20 years or younger following first time-dislocation (Azar *et al*., n.d. 2020). There is no clear definition of chronic dislocation of the shoulder joint, however, if the shoulder joint is dislocated for more than 3 weeks or if dislocation is missed following initial injury, it is considered as chronic (Sahajpal and Zuckerman, 2008). Patients with a chronically dislocated shoulder usually present with complaints of pain and limitation of range of motion (ROM). Chronic anterior dislocations face challenges that cannot be managed with standard surgical techniques.

Because of significant soft-tissue contracture and imbalance as well as bone deficiency,

chronically locked anterior shoulder dislocation is a difficult problem for both patients and clinicians.

The results of several procedures such as Bankart repair, remplissage, coracoid transfer, bone-grafting, and arthroplasty have been reported (Li and Jiang, 2016).

The purpose of the case report is to highlight the difficulty of management of chronic neglected dislocation of shoulder with open reduction with only coracoid osteotomy and important of early intervention.

Material and Method

Patient Information

A 54-year-old gentleman comes to the orthopedic out patient department due to pain and restriction of range of motion of right shoulder and inability to reach his hand to his mouth and face over last 3 months. He gave history of manipulation of his injured shoulder joint by a local bone setter after a fall injury.

Clinical Features

On evaluation, the patient had loss of right shoulder contour with prominence of the acromion and swelling/bulge over the antero-medial aspect of shoulder joint. Abduction and internal rotation were restricted without distal neuro-vascular deficit (Fig. 1).

Figure 1: Pre-operative clinical photos of patient: a. frontal view b. posterior view and c. right lateral view.

Imaging

Antero-posterior (AP) and lateral x-ray of his right shoulder joint showed humeral head medially displaced and over lies the glenoid (Fig. 2). CT scan revealed a dislocated shoulder joint with fracture in the postero-lateral aspect of the humeral head which was locked against anterior rim of glenoid (Hill-Sachs Lesion) without glenoid fracture (Fig. 3).

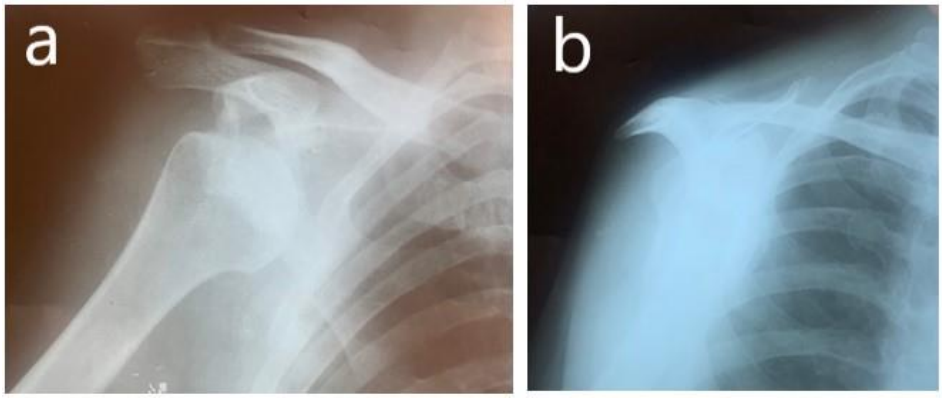

Figure 2: X-rays views in AP (a) and Lateral view (b) of patient.

Figure 3: CT images of patient: 3D model showing anterior dislocation (a), coronal cut (b) axial cut (c) showing defect over humoral head (Hill-Sachs lesion).

Visualization

Intervention

Under general anaesthesia with the patient in beach-chair position, a gentle closed reduction was attempted. This was unsuccessful. Therefore, the joint was opened by a deltopectoral approach, developing the plane between deltoid laterally and pectoralis major medially. Tenotomy of subscapularis muscle was done with stay suture placed for future reattachment. Coracoid osteotomy was performed, and conjoined tendon reflected for better visualization of joint capsule. Anterior capsulotomy was done in T-shaped fashion. The glenoid fossa was exposed, levered using periosteal elevator, and cleared of all fibrosed tissue including posterior bowstringing capsule. Reduction was achieved. Intra-operative stability was checked and found satisfactory. Capsule was closed and subscapularis was re-attached. Along with conjoined tendons the coracoid was fixed to the previously pre-drilled osteotomy site with 3.5mm fully threaded cancellous screw. Post operatively the shoulder was immobilised using velpeau bandage preventing external rotation for 6 weeks (Fig. 4).

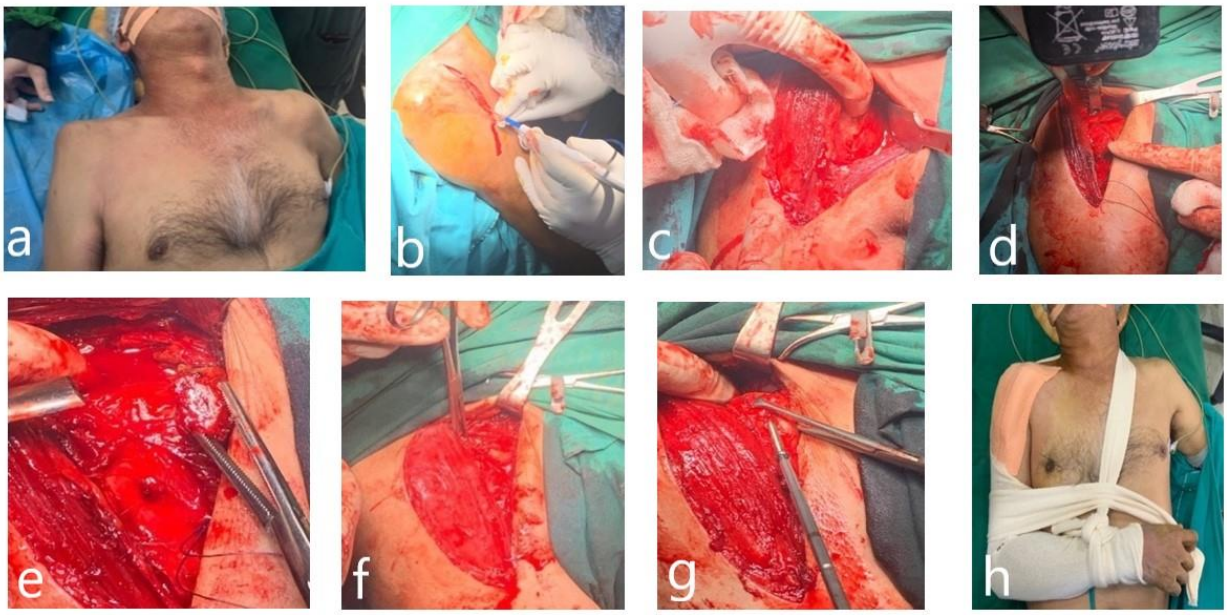

Figure 4: Showing intra-operative images: patient positioned in beach chair position under general anaesthesia (a), skin incision of delto-pectoral approach (b), plane between deltoid and pectoralis major muscles (c), coracoid osteotomy (d), detached osteotomized coracoid (e) after reduction of shoulder joint (f), fixation of coracoid with screw (g) and post- operative immobilisation with velpeau bandage (h).

Result

Post operatively the patient was comfortable. Post operative radiograph showing well reduced gleno-humeral joint with screw in situ over coracoid osteotomy fixation site (Fig. 5).

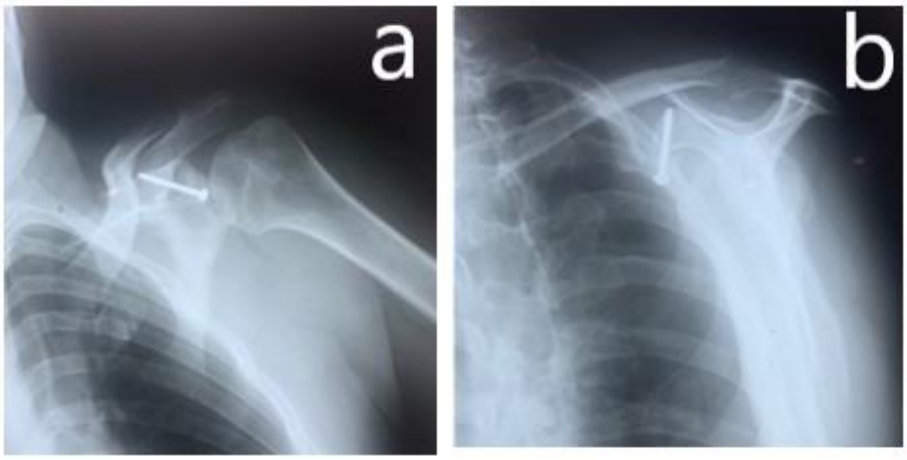

Figure 5: Immediate post of x rays: antero-posterior view (a) and lateral view (b).

Follow up

At 6 weeks post-operative follow up, patient had no complaint, advised to do gentle range of motion of shoulder joint. Follow up x ray showing well reduced shoulder joint at 6 weeks (Fig. 6).

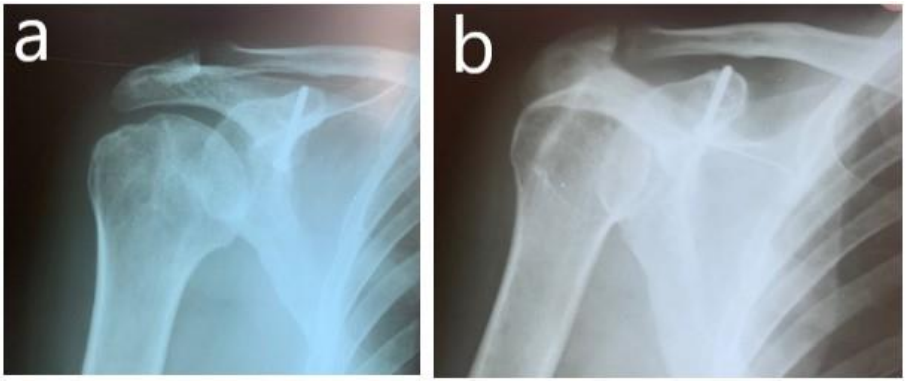

Figure 6: Follow up x ray 6 weeks post-operative: antero-posterior view (a) and lateral view (b).

At 15 weeks follow up, patient has terminal restriction of shoulder movement, however he is carrying out activities of daily living without any difficulty.

Discussion

Management of chronic shoulder dislocation is no treatment, closed reduction, open reduction, hemiarthroplasty, and total shoulder replacement (Azar *et al*., n.d. 2020). Some chronic dislocations are complicated with fracture of the glenoid, the tuberosities, and the humeral head. Once it is chronic, reduction becomes difficult due to capsular fibrosis, contracture of muscles, and bow stringing of capsule over glenoid fossa.

One reason for delay in presentation is due to old beliefs and traditional ways of fractures and joint dislocation management by local bone healers in Bhutan.

Open laterjet procedure is a good option in cases of neglected shoulder dislocation and stability is more assured if it is performed without tenotomy of subscapularis muscle (Li and Jiang, 2016; Lubis *et al*., 2019; Sahajpal and Zuckerman, 2008).

A chronically dislocated shoulder can be managed by addressing both glenoid and humeral head lesions. In such cases described in meta-analysis, Bankart repair combined with remplissage is superior to Bankart repair alone (Camus *et al*., 2018).

However, in our case, there was no bony Bankart lesion but an 18% defect on postero-lateral aspect of humeral head (Hill-Sachs) lesion. In view of this, we decided to manage with less extensive approach without either detaching the deltoid or bone grafting. The reduction was achieved by adequate exposure via the coracoid osteotomy and clearing fibrosed capsule from the glenoid cavity. The subscapularis tenotomy had to be performed due to some difficulty in visualising the glenoid cavity. Intra operatively, reduction was found to be stable.

The advantage of this procedure being standard and less extensive compared to laterjet procedure and however drawback of this procedure is, it may not be providing stability as provided by bone grafting (laterjet procedure).

The Laterjet procedure, which is usually performed for management of chronic anterior dislocation of the shoulder, is required only in cases of a large bony defect of the glenoid with concurrent Hill-Sachs lesion. We learned that in a three-month's old injury, open reduction can be achieved and maintained with a less extensive approach.

Conclusion

An urgent reduction of any dislocated joint has a better outcome. Reduction of dislocations must be guided by proper clinical examination and additional investigations like radiographs of the affected joint, hence, local bone setter has must be mindful when dealing with such cases. Unlike other case reports of extensive operative treatment of chronically dislocated shoulder joints, we concluded that such cases can be managed with a less extensive approach with good clinical outcomes. From our experiences, for chronic dislocation of shoulder with less bony defect, open reduction with coracoid osteotomy which is less extensive is better option.

Consent: Written informed consent was obtained from the patient.

References

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