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Adequate Imaging Is Essential When Clinical Picture Is Ambiguous.

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ABSTRACT

In every case of a conscious patient with reasonably normal mentation, complaining of a non-relenting pain with non-impressive radiographs, the physician must have clinical suspicion and be alert to do more imaging like MRI. This practice will benefit of the patient and prevent late morbidity.

Keywords: Adequate imaging, essential, clinical picture, ambiguous.

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INTRODUCTION

Neglected injuries are common in India. These are usually due to the patient coming to the orthopaedic surgeon late or presenting to the bone setters or quacks in the first place [1]. However lack of clinical suspicion can miss relatively less common injury even in a hospital setting in an orthopaedic surgeon's office [2] especially in elderly [3]. We present one such potential case.

Case report

A 50 year old presented with a fall from his two wheeler with bruises in face and hand and with severe pain in the left shoulder. The patients shoulder contour was normal compared to the other side (Figures 1 and 2). All movements of the shoulder were restricted. He was able to slowly crawl his hand towards the opposite shoulder to do Duga's test. There was no obvious prominence of the coracoid process or the humeral head.



Figure 1: Left shoulder which was painful



Figure 2: Right shoulder for comparison



Figure 3: Initial Antero Posterior radiographs no typical glass bulb or overlap sign

Radiographs of the shoulder did reveal increased space between the glenoid and the head of the humerus. (Figure 3). Since the radiograph of the shoulder was unimpressive and was not matching with the severe pain and restriction of the movement of the left shoulder with spasm, further imaging in the form of MRI was ordered. There was a suggestion of 'light-bulb' appearance of the humeral head in the pilot film. (Figure 4) The MRI revealed the posterior dislocation of the shoulder with a bony fragment inside the joint (Figure 5).



Figure 4: Pilot film of the MRI –head resembled like a glass bulb.

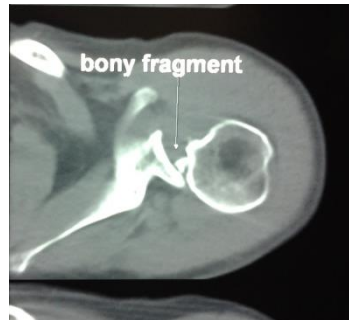


Figure 5: The cross sectional imaging of the shoulder showing the gross internal rotation of the head with a bone fragment in the joint (MRI of the shoulder). There was a very small defect of the anterior aspect of the humeral head less than 25 percent.

The patient had closed reduction was done with traction applied to forearm and counter traction with a towel at axilla. His post reduction film is seen in figure 6. and his post reduction status is seen in figure 7.



Figure 6: Post-reduction antero posterior radiographs



Figure 7: Post reduction the prominence in the posterior aspect is reduced.

Patient had good painless range of movement immediately after. He was relieved. His shoulder was immobilised in an immobiliser for three weeks and then mobilised. The patient is still in follow up and did not have a recurrence in the past two years.

DISCUSSION

Posterior dislocation of the shoulder accounts for only less than 4% of all shoulder dislocations [3,4]. The main problem in these cases is not diagnosing the dislocation before starting the treatment [4,5]. Once the diagnosis is established, the majority of patients with this lesion can be successfully managed [2].

Clinical suspicion is very essential since regular appearance of lost contour and passive Dugas's is sometimes possible as internal rotation is possible in posterior dislocation. Also regular loss of rounded contour is not obviously seen in posterior dislocation of the shoulder.

Neglected dislocations of shoulder accounts for late presentations as painful stiff shoulder sometimes diagnosed as peri-arthritis. ⁶This type of late presentation leads to morbidity and gross affection of activity of daily life. Clinical suspicion in every case where in an awake patient with reasonably normal mentation, with non-relenting pain with non-impressive radiographs must alert the physician to do more imaging like CT or MRI.

Occurrence of posterior shoulder dislocations is less than anterior dislocation and need lateral projections in addition to the easier anteroposterior projections. It usually happens with a violence that forces the humeral head posteriorly with the head in internal rotation and abduction. Sometimes this can be due to rotator cuff muscle imbalance. ³Seizures and electric shock can cause posterior shoulder dislocations and even bilaterally [3].

Posterior dislocations may even go unnoticed, especially in elderly patients sometimes they even spontaneously get reduced before even the imaging [3]. In half of the cases the posterior dislocation may be missed initially on frontal radiographs. The internally rotated humeral head forms a rounded light-bulb sign.

There are other radiological signs like Moloney's arch - an acute angle between the humerus and the scapula in posterior dislocation. In anteroposterior radiographs the findings are subtle, including the trough line sign and the loss of normal half-moon overlap sign. It may be difficult and training is needed to do radiographs like the axillary, scapular Y, or posterior oblique projections [3]. With these subtle clinical and roentgenographic appearances, the posterior dislocations are usually missed [5].

An axillary radiograph proved the diagnosis in most posterior dislocations of shoulders when presented late and showed the size of the impression defect [2]. Some cases are diagnosed with radiographs but additional details like the head involvement are noted only in CT / MRI (reverse Hill-Sachs lesion), and injury of the glenoid labrum posteriorly (reverse Bankart lesion) or ligamentous injury.

Apart from this different soft tissue injuries like the posterior humeral avulsion of the glenohumeral ligament (HAGL) lesion, posterior labro-capsular periosteal sleeve avulsions (POLPSA lesions) - reverse Bankart lesion, can only be delineated in MRI. These lesions can predispose to posterior shoulder instability. Apart from this cross-sectional imaging is essential to measure reverse Hill-Sachs lesion, fracture of the lesser tuberosity associated glenoid ³ and proximal humeral fractures [2,3].

Some authors believe MRI is not necessary because soft-tissue injury is very rare in posterior dislocation of the shoulder [4]. but it is handy to diagnose associated lesions like POLPSA lesions, HAGL lesion which need prompt treatment. The same authors feel capsulo-ligamentous complex is more readily investigated by CT arthrography and MR arthrography, while ultrasound is handy in evaluating glenohumeral instability [4].

Sometimes posterior dislocation of the shoulder cannot be reduced with ease like anterior dislocations [3]. If identified early the posterior dislocations recuperate fast [5]. If unreduced for more than three weeks particularly in older individuals then closed manipulation for reduction should not be done [3]. These lesions need operative treatment of open reduction and in case if there was vast damage to the glenohumeral joint had occurred then fusion of the shoulder is indicated [5].

Posterior gleno-humeral dislocation is considered as chronic when the duration is more than three weeks after the day of dislocation [4]. In case of chronic locked posterior dislocation of the shoulder, the size of the anteromedial defect of the humeral head is important [7]. If the defect of the humeral head is less than 25% of the articular surface and the duration of the dislocation is less than three weeks a closed reduction may be tried. When the duration of the dislocation is in excess of three weeks, closed reduction is impossible [4]. If the defect is less than 40 % of the joint surface, then the lesser tuberosity with sub scapularis tendon attachment can be transferred into the defect; if larger than 40 % then prosthetic replacement is preferred [7]. In locked posterior dislocations of the shoulder which were missed initially can be treated with a variety of treatment like reduction, transfer of the subscapularis, tendon-transfer of the lesser tuberosity, hemiarthroplasty, total arthroplasty [2] or reconstruction with femoral head allograft [7].

We have diagnosed our case on the first post trauma day and promptly reduced the posterior dislocation by closed reduction. His humeral head defect was very minimal and he did not have a recurrence in the past two years of follow up.

CONCLUSION

Posterior dislocations of the shoulder should be suspected if the contour of the shoulder is deceptively normal and the radiographs are near normal. Cross sectional imaging is essential. CT and MRI can be of use to give soft tissue and bony details apart from confirming the diagnosis.

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