



Case report

Posterior shoulder dislocation in a 10-year-old child: Case report

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ABSTRACT

Introduction: Shoulder dislocation is the most common type of all joints dislocations. It occurs when there is separation in the glenohumeral joint. Posterior dislocation accounts for less than 4% of all shoulder dislocations. In fact, it is misdiagnosed in 60–79% of the patients in the initial presentation. In children a posterior shoulder dislocation is usually caused by a congenital anomaly or in those who have ligamentous laxity. Traumatic posterior shoulder dislocation without fracture of the proximal humeral epiphysis in children is very rare, and only few cases have been reported.

Case presentation: This report presents a rare case of a 10-year-old child with a traumatic posterior shoulder dislocation without fracture.

Discussion: this patient present with a rare posterior dislocation, which is direct and without fracture. It does not present with a marked deformity and it is hard to detect without a complete physical examination and radiographic series.

Conclusion: Posterior shoulder dislocations are rare, and even more rare in children without fractures. It is easily missed and needs careful history taking, physical exam and correct x-ray view to reach the diagnosis.

1. Introduction

Shoulder dislocation is the most common type of all joints dislocations [1]. It occurs when there is separation in the glenohumeral joint [2]. Posterior dislocation is a rare entity, it accounts for less than 4% of all shoulder dislocations [3]. In fact, it is misdiagnosed in 60–79% of the patients in the initial presentation [4,5]. In children, a posterior dislocation is usually due to congenital anomalies of the shoulder girdle, obstetrical paralysis and voluntary dislocation as those who have generalized ligamentous laxity [6,7]. Traumatic posterior shoulder dislocation without fracture of the proximal humeral epiphysis in children is very rare, and only few cases have been reported [7,8]. Epiphyseal growth plates are weaker than the ligaments, which tend to fracture before dislocation occurs [7,9]. Here we present a case of a child with posterior shoulder dislocation without fracture. This case has been reported in line with the Surgical Case Report Guidelines (SCARE) criteria [10].

2. Case report

A 10 years-old child was seen in the emergency room complaining

of left shoulder pain since one night after he hit the door. His mother reported that a month earlier, he had fallen down and his left shoulder was limited range of motion, improved with gentle manipulation, and then he continued to have recurrent episodes of same symptoms without seeking any medical advice. The patient's vital signs were normal and he looked well. He was having mild pain over his left shoulder with limited range of motion especially external rotation. Pulses were intact and no neurological deficit was detected. Shoulder examination showed arm was internally rotated and adducted, and he was holding his arm to his body. Skin was intact and arm was locked in internal rotation with humeral head was palpable in the back of the shoulder which indicate left shoulder dislocation. There were no sign of hyperlaxity. A posteroanterior and an axillary view X-ray (Fig. 1) of left shoulder were done and interpreted as posterior shoulder dislocation. The contour of humeral epiphysis is maintained and the glenoid portion of the shoulder joint appear within normal.

With oral analgesia (paracetamol 400 mg) simple closed reduction maneuver (gentle traction and pressure on the posteriorly directed humeral head with slow external rotation of the extremity) was applied, and shoulder reduced successfully without needed of sedation. Post reduction X-ray films were done (Fig. 2) which confirmed the reduction

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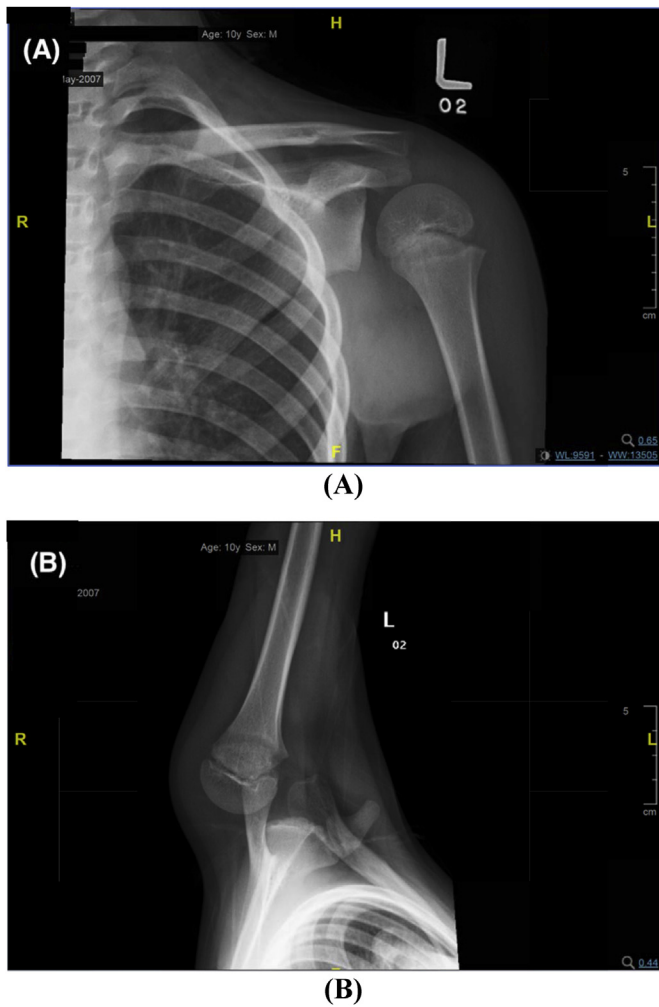


Fig. 1. (A) posteroanterior and (B) axillary view radiograph prior to reduction.

position. Shoulder was immobilized in arm sling. Patient was seen in outpatient clinic after one week, where a follow up X-ray film was done (Fig. 3) and showed no significant interval changes from post reduction films. Range of motion and strengthening exercises were started 1 week later as tolerated with no sport activity instruction for the next 4 weeks. Last follow up was 3 months post injury, which revealed full range of motion with no pain. A magnetic resonance imaging (MRI) scan was recommended to evaluate the shoulder joint, but the family was so reluctant and they refused doing MRI.

3. Discussion

There are two mechanisms of injury cause a posterior dislocation of the shoulder [7,11]. The first type is a direct trauma which results from force application to the anterior shoulder, resulting in posterior translation of the humeral head [12]. The second type is an indirect trauma, which is the most common; the shoulder typically is in the position of adduction, flexion, and internal rotation, it occurs during electric shock or convulsive mechanisms [13].

Clinically, a posterior dislocation does not present with a marked deformity; the injured upper extremity is typically held in the traditional sling position of the shoulder internal rotation and adduction. These injuries are missed without a complete physical exam and a radiographic series. Moreover, a palpable mass posterior to the shoulder, flattening of the anterior shoulder, and coracoid prominence may be observed. On examination, limited external rotation and limited anterior forward elevation may be appreciated [14].

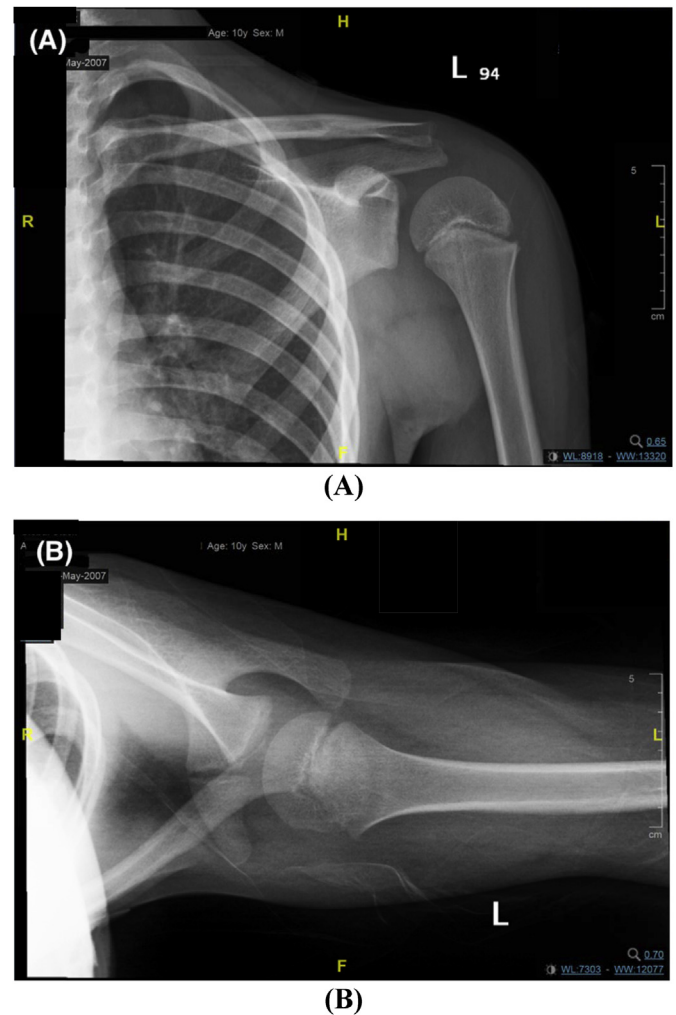
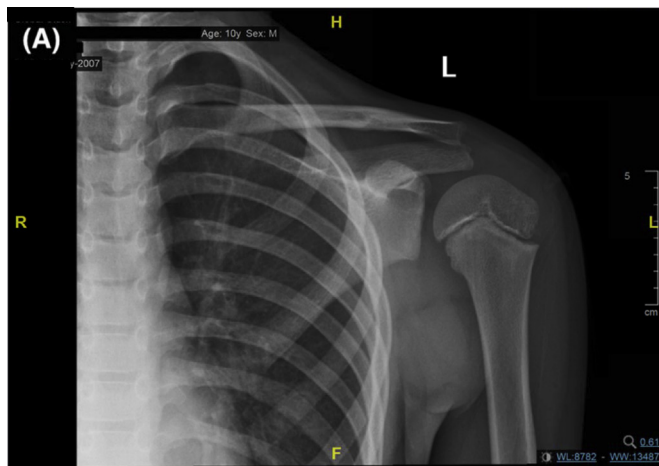


Fig. 2. (A) anteroposterior and (B) axillary view radiograph of reduced glenohumeral joint.

Radiographic evaluation of any injured shoulder demands adequate views in more than one plane to properly evaluate the shoulder, usually suffice in a glenohumeral dislocations and are more recognized on the axillary view. A posterior dislocation will almost always be missed in an anteroposterior film [14].

Non-operative treatment for posterior dislocations in pediatric can be made with closed reduction that requires full muscle relaxation, sedation or just analgesia like our case. The pain for a posterior dislocation is greater than anterior dislocation, so proper pain control could help relaxing the patient. General anesthesia may be needed if failure to achieve reduction. With the patient supine, traction should be applied to the adducted arm in the line of deformity with gentle lifting of the humeral head into the glenoid fossa. The shoulder should not be forced into external rotation, because this may result in a humeral head fracture if an impaction fracture is locked on the posterior glenoid rim. Indications for surgery include irreducible dislocation, a large posterior glenoid fragment and an anteromedial humeral impaction fracture [14].

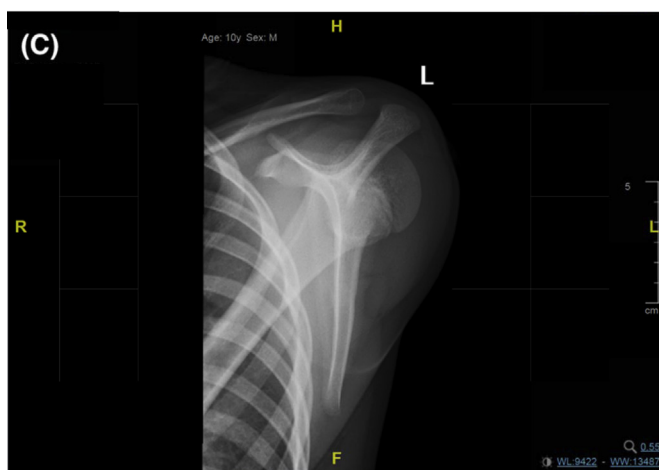
Immobilization for one to two weeks is recommended. Wilson and McKeever [15] believe that most posterior dislocations are unstable and should be percutaneously pinned. The patient's arm should be held in a sling and swathe position, then the physician drills two pins in a crossed fashion through the acromion into the humeral head. This procedure is rarely used except in open reduction of neglected posterior dislocations.



(A)



(B)



(C)

Fig. 3. (A) anteroposterior, (B) axillary and (C) Y view radiograph one week later.

4. Conclusion

Posterior shoulder dislocations are rare, and even more rare in children without fractures. It is easily missed and needs careful history taking, physical exam and correct x-ray view to reach the diagnosis. The outcome depends mainly on how early the dislocation is recognized and treated.

Ethical approval

We have reported a single case with no requirement for ethical approval. This manuscript does not describe a clinical study.

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Author contribution

NO and MD gathered the patient's data and wrote the manuscript. NO and AJ saw the patient. NO, MD, BA and AJ reviewed manuscript. All authors approved the final manuscript.

Conflicts of interest

None.

Registration of research studies

We have reported a single case with no requirement for registry. This manuscript does not describe a clinical study.

Guarantor

Nawaf Alogayyel (MBBS), Ayman H. Jawadi (Associate Professor, Consultant Pediatric Orthopedic Surgery).

Consent

Informed parental consent for the publication of this work was given on behalf of the patient.

Provenance and peer review

Not commissioned, externally peer-reviewed.

Appendix A. Supplementary data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.amsu.2018.08.005>

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