Trauma Case Reports xxx (2017) xxx–xxx

Contents lists available at ScienceDirect

Trauma Case Reports

journal homepage: www.elsevier.com/locate/tcr

Case Report

Traumatic pediatric shoulder fracture dislocation treated with closed reduction and intramedullary nailing: A case report

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ARTICLE INFO

Article history:
Accepted 21 May 2017
Available online xxxx

Keywords:
Pediatric
Trauma
Shoulder fracture dislocation
Proximal humerus fracture
Humeral neck fracture
Intramedullary nailing
Ten

ABSTRACT

Background: Although rare, pediatric proximal humerus fractures may coexist with glenohumeral dislocations. Most of these injuries are Salter -Harris type of injuries. The treatment usually consists of closed or open reduction and k- wires fixation.

The case: In this case report; a 10-year-old girl presented with a rare traumatic humeral surgical neck fracture with a posterior shoulder dislocation that was treated by closed reduction and flexible intramedullary nailing.

Conclusion: Pediatric humerus fracture dislocations are rare. Treatment should keep in mind preservation of the growth plate.

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Introduction

Shoulder trauma in children can result in a variety of injuries ranging from rotator cuff strain and glenohumeral subluxation to proximal humerus fractures and joint dislocations [1].

Proximal humerus fractures represent less than 5% of all pediatric fractures. These rare injuries have an estimated annual incidence of 1.2 to 4.4 per 1000 children [2,3,4]. Usually, the physis is the most vulnerable site of fracture in the proximal humerus [4]. Due to the high remodeling rate in this part of the bone, most of these fractures (with the exception of Salter Harris types III-IV) are treated non-operatively.

Glenohumeral dislocations in the pediatric population are rare [5]. In Rowe's classic series of five hundred shoulders in a series of 488 patients, only 8 (1.6%) of them were under 10 years of age [4]. While the exact incidence of pediatric shoulder dislocation remains unknown, there seems to be an increase in frequency in older children and adolescents [6]. The most common direction for traumatic shoulder dislocations is anterior [1]. Very rarely, posterior (less than 5%) or inferior (less than 1%) glenohumeral dislocations can occur [1].

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[1] Contribution: surgeon who performed the procedure.
[2] Contribution: literature review, writing and editing of manuscript.
[3] Contribution: literature review, writing and final review of manuscript and publication process.

http://dx.doi.org/10.1016/j.tcr.2017.05.003
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Please cite this article as: G. Fannouch, et al., Traumatic pediatric shoulder fracture dislocation treated with closed reduction and intramedullary nailing: A case report, Trauma Case Reports (2017), http://dx.doi.org/10.1016/j.tcr.2017.05.003

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The combination of shoulder dislocation and proximal humeral physeal fracture are extremely rare in children younger than 10 years old [7].

Here we present the unusual pediatric case of surgical humeral neck fracture with a posterior glenohumeral dislocation. Up to our knowledge, no similar case was reported in the English literature.

The case

A 10-year-old girl previously healthy, fell down from a 1 step stairs. She initially presented to a local primary health care center complaining of left shoulder pain. She was found to have a closed surgical humeral neck fracture with posterior shoulder dislocation. Closed reduction under sedation was attempted but failed. She was then transferred to our institute which is considered a level I trauma center. Upon presentation, her left arm was on an arm sling with her shoulder adducted and internally rotated and she was complaining of left shoulder pain. Both active and passive shoulder range of motion were restricted due to pain. Distal neurovascular examination was normal and there were no signs of compartment syndrome. Radiographic studies revealed a picture of left surgical humeral neck fracture with posterior shoulder dislocation (Fig. 1).

At that time the patient had completed 24 h from the initial injury. The patient was consented for closed versus open reduction and fixation and was taken to the operating room as an emergency case. Under general anesthesia, closed reduction of the shoulder dislocation was performed with difficulty and was unstable. At that time, we moved to the elbow and a posterior midline 2 cm vertical skin incision was made, then dissection carried down and the triceps tendon split in line with skin incision.

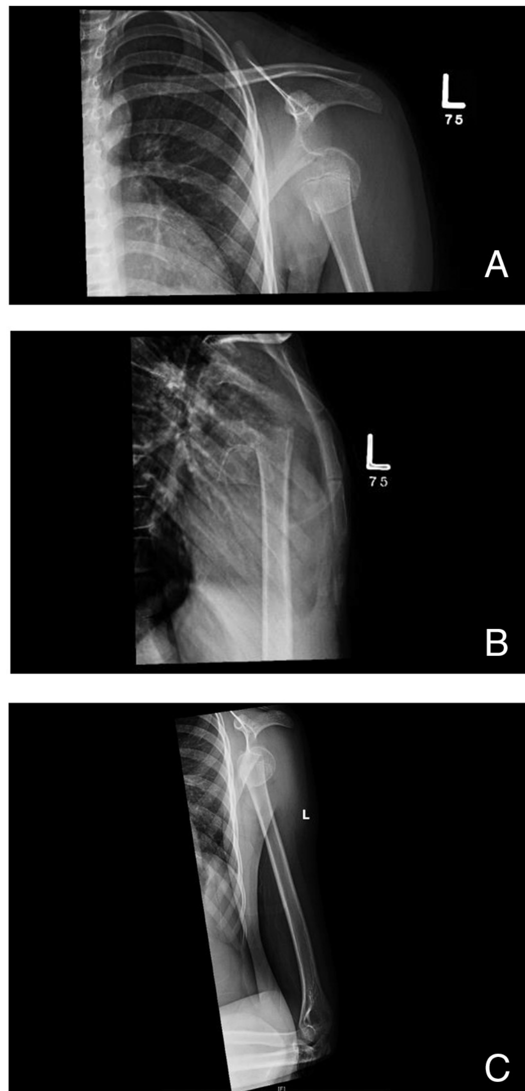

Fig. 1. A: AP (anterioposterior), B: Lateral shoulder and C: Lateral humerus X-rays demonstrating the humeral surgical neck fracture with a posterior shoulder dislocation.

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