

## IMAGE CHALLENGE

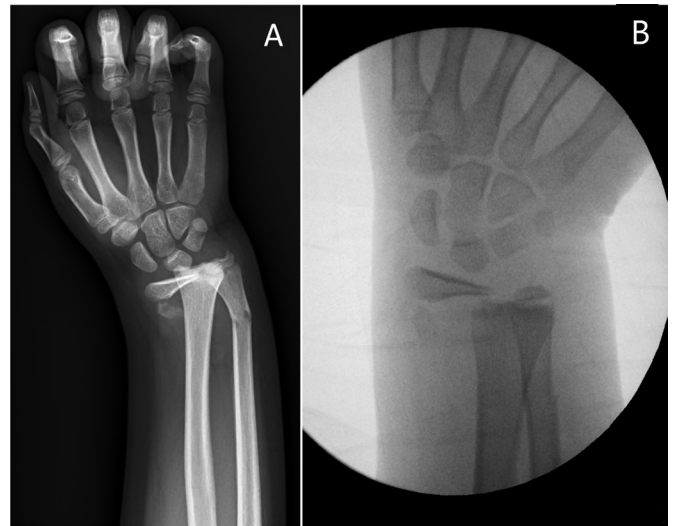
## Wrist deformity following falling down

## CLINICAL INTRODUCTION

A 8-year-old girl presented to our emergency department with a painful deformity of her left wrist following falling



**Figure 1** The appearance of the left wrist on presentation to the emergency department.



**Figure 2** (A) Left wrist anteroposterior radiograph. (B) Radiograph following close reduction under sedation.

onto her outstretched hand. The physical examination showed ecchymosis, swelling, and left wrist deformity with radial deviation and ulna apex ([figure 1](#)). Sensation and capillary refill time on the left distal limb were normal. Left wrist radiograph was obtained ([figure 2A](#)). Following closed reduction under sedation, the fluoroscopic radiograph showed persistent deformity with unacceptable alignment ([figure 2B](#)).

## QUESTION

Which of the following is the most appropriate management?

- Attempt closed reduction under sedation again.
- Immobilisation in short arm cast for 2–3 weeks without reduction.
- Short arm splinting and consult for open reduction and internal fixation.
- Arthrocentesis for symptom relief.

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## ANSWER: C

The initial radiograph showed left distal radio-ulnar fracture with physis separation. Closed reduction failed after several trials is usually suggestive of soft tissue interposition in the physis which can be visualised in the postreduction radiograph and is indicated in figure 3 (arrowhead). This usually warrants surgical intervention. The appropriate emergency management would be immobilisation with short arm splinting and followed by open reduction and internal fixation by orthopaedic surgeon. The periosteum interposition between the fracture fragments was found in surgery (online supplemental figure 1). After pulling the soft tissue out without damaging the physis, the patient underwent reduction of distal radius and ulnar fracture with percutaneous pins fixation.

Distal radius fractures account for 20%–35% of all paediatric fractures, and many of these fractures involve the growth plate.<sup>1</sup> Most of these fractures could be successfully treated by closed reduction and immobilisation under appropriate analgesia in emergency department. An irreducible distal radius fracture is a rare condition, but soft-tissue interposition must be kept in the mind when it is difficult to perform closed reductions to avoid excessive reduction attempts.<sup>2</sup>



**Figure 3** Soft tissue interposition (arrowhead) between the fracture fragment

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