

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.

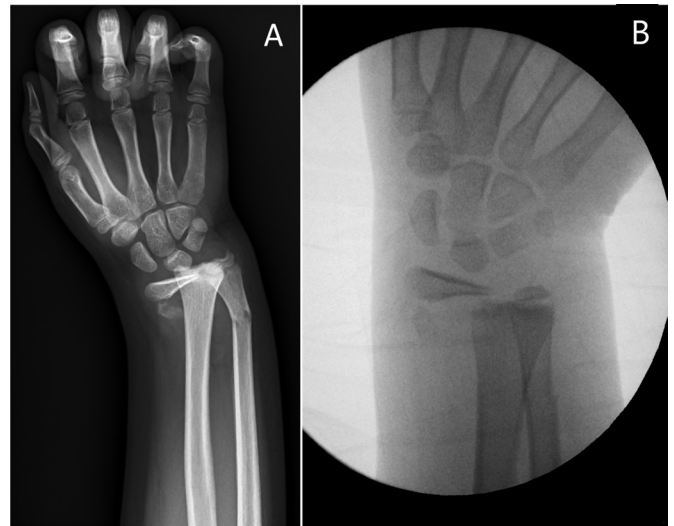


Figure 2 (A) Left wrist anteroposterior radiograph. (B) Radiograph following close reduction under sedation.

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.¹ 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.²



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

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Contributors C-YL: searching data/completing the manuscript. C-CL: interpreting data/critically revising the manuscript.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Consent obtained directly from patient(s).

Ethics approval This study does not involve human participants.

Provenance and peer review Not commissioned; internally peer reviewed.

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► Additional supplemental material is published online only. To view, please visit the journal online (<http://dx.doi.org/10.1136/emermed-2021-211860>).



To cite Lee C-Y, Lu C-C. *Emerg Med J* 2022;**39**:880.

Accepted 26 November 2021

Emerg Med J 2022;**39**:880.

doi:10.1136/emermed-2021-211860

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