

## IMAGE CHALLENGE

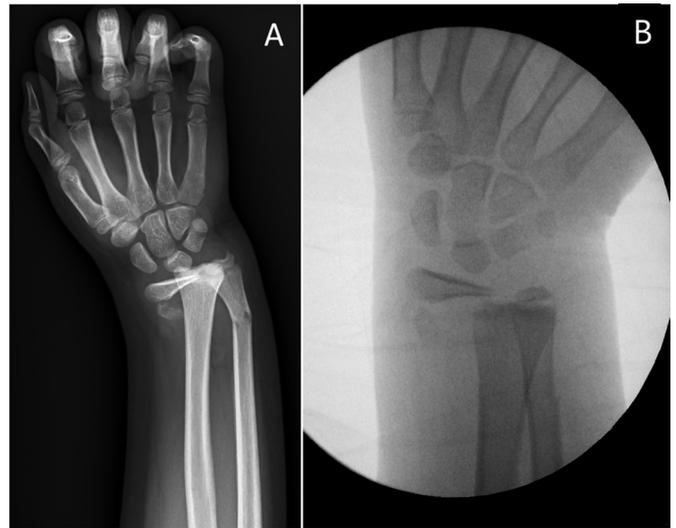
## Wrist deformity following falling down

### 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.

*For answer see page 880*

# Wrist deformity following falling down

For question see page 866

## 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

Chih-Yao Lee<sup>1,2</sup>, Cheng-Chang Lu<sup>1,2,3</sup>

<sup>1</sup>Department of Orthopedics, Kaohsiung Municipal Siaogang Hospital, Kaohsiung, Taiwan

<sup>2</sup>Department of Orthopedics, Kaohsiung Medical University Hospital, Kaohsiung, Taiwan

<sup>3</sup>Department of Orthopedics, College of Medicine, Kaohsiung Medical University, Kaohsiung, Taiwan

**Correspondence to** Dr Cheng-Chang Lu, Department of Orthopedics, Kaohsiung Municipal Siaogang Hospital, Kaohsiung, Taiwan; cclu0880330@gmail.com

**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.

**Supplemental material** This content has been supplied by the author(s). It has not been vetted by BMJ Publishing Group Limited (BMJ) and may not have been peer-reviewed. Any opinions or recommendations discussed are solely those of the author(s) and are not endorsed by BMJ. BMJ disclaims all liability and responsibility arising from any reliance placed on the content. Where the content includes any translated material, BMJ does not warrant the accuracy and reliability of the translations (including but not limited to local regulations, clinical guidelines, terminology, drug names and drug dosages), and is not responsible for any error and/or omissions arising from translation and adaptation or otherwise.



## OPEN ACCESS

**Open access** This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited, appropriate credit is given, any changes made indicated, and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>.

© Author(s) (or their employer(s)) 2022. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.

► 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

## ORCID iD

Chih-Yao Lee <http://orcid.org/0000-0002-3605-9130>

## REFERENCES

- 1 Salter RB, Harris WR. Injuries involving the epiphyseal plate. *J Bone Joint Surg Am* 1963;45:587–622.
- 2 Carlone A, Kopiec A, Riley S, et al. A Salter-Harris II distal radius fracture irreducible by closed methods. *JBJS Case Connect* 2020;10:e20.00061.