



Traumatic Bilateral Epiphyseal Injury: A Case Report

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Authors' contributions

This work was carried out in collaboration among all authors. Author JEA designed the study, wrote the the first draft of the manuscript. Authors IEA and COA assisted in drafting the manuscript with proof reading. Author BJA managed the literature searches. All authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Bilateral distal radial epiphyseal injuries are rare injuries in children. So far, only a few cases have been reported. The upper limbs play a vital role in the survival and defense mechanism in children. Therefore, injury to both wrists can be temporarily incapacitating. We reviewed medical records of the patient including clinical findings, radiological studies, treatment and follow up documentation, as well as relevant literature. We present a case of a nine year old boy who sustained bilateral closed distal radial epiphyseal injury following a fall from a coconut tree. He was managed conservatively by closed manipulation and bilateral below elbow cast application. Bilateral distal radial epiphyseal injury is quite rare and debilitating to the affected child. However, it can be successfully treated conservatively.

Keywords: Bilateral; epiphyseal injury; rare; distal radius.

1. INTRODUCTION

Epiphyseal fractures constitute about 15% of paediatric fractures. It usually increases in frequency with increasing age until physeal fusion which varies between males and females [1]. Distal radial epiphyseal injury mostly result from indirect trauma following a fall on the outstretched hand (FOOSH), but can also follow repetitive axial loading (micro-trauma) as reported in child gymnast or climber [2]. This may not be unrelated to the fact that in children the tendons and ligaments are relatively stronger than the epiphyseal plate (weakest link) but the muscles and bones show considerable elasticity implying faster healing [2, 3]. These injuries are more common in males, frequently affecting the upper extremities and more prevalent around the adolescent growth spurts [4]. They present with pain, swelling, deformity and reduced function. This injury is graded using Salter Harris classification. These injuries are rare and the exact incidence remains unknown [5].

These injuries can be evaluated with the use of ultrasonography (USS), plain radiograph (X-ray) and magnetic resonant imaging (MRI).

Complications that could arise include early fusion of the radial physis leading to positive ulna

variance, acquired Madelung deformity and growth disturbance [6]. Affected children should be followed up till skeletal maturity.

2. CASE REPORT

A 9 year old boy who presented with pain, swelling and deformity of both wrists, with associated painful swelling and abrasion of the forehead following a fall on the outstretched hands from a coconut tree about 3 meters high. There was no loss of consciousness or bleeding from any craniofacial orifice. He presented 2 days after injury. Following initially resuscitation and elevation of both upper limbs with Dunlop splints at home because the guardian declined admission, bilateral wrist swelling subsided within 48hrs. Radiograph of both wrists reveals bilateral Salter Harris type 1 fracture worse on the right (see Fig 1). We managed him by manipulation and application of a below elbow cast (see Fig 2). He was also given non steroidal anti-inflammatory drugs (NSAIDs), calcium and vitamin supplement. Post reduction radiograph was done 4 days later due to financial challenge, it revealed inadequate reduction but acceptable (see Fig 3, x-ray films were of poor quality).

He is stable and recuperating at home, and will be followed up till skeletal maturity.



Fig. 1. X-ray showing Salter Harris Type 1 fracture of the right wrist



Fig. 2. Immobilization of both wrists in cast

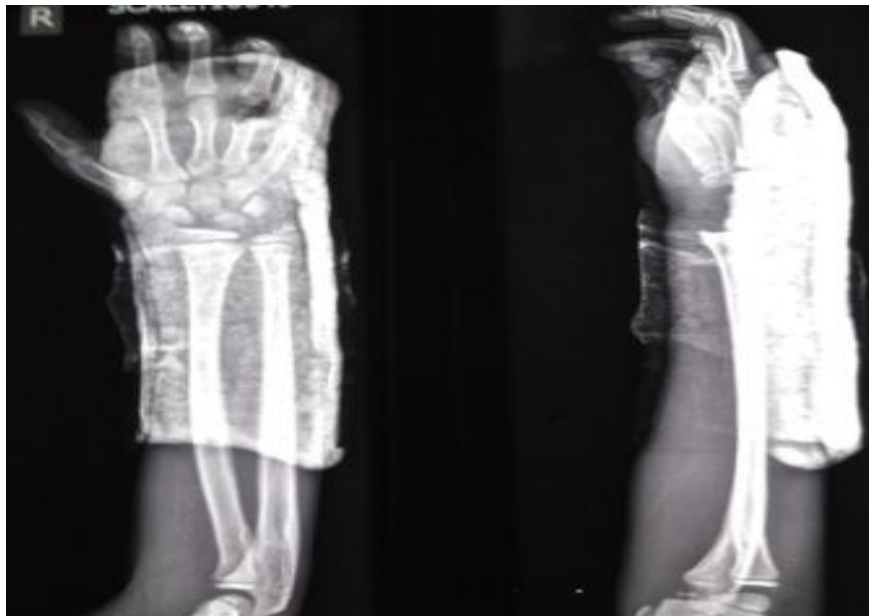


Fig. 3. Post reduction X-ray right wrist

3. DISCUSSION

We use this case to report a rare injury and illustrate the encumbrances associated with management of this injury to the subject and managing doctor.

Our victim is a 9 year old boy; this has been reported by several journals that boys sustain more injuries than girls whether sporting or traumatic. He is also within the age bracket. This

is due to their high activity level [2,3,5]. The injuries were in the upper extremity which is the most commonly injured part of the body. [3] In this case both fall on out-stretched hands and axial loading were implicated in the mechanism of injury. He also, sustained associated mild head injury. This has been reported that bilateral distal radial injuries have associated injuries though not severe in children. [1,3,5] Management was conservative. This has been widely reported to be so and in other traumatic

injuries in paediatric age group except in some isolated cases where surgery was inevitable due to complications of treatment or neglect [7, 8].

4. CONCLUSION

Bilateral distal radial epiphyseal injury (wrist) though rare can still occur. It poses some management challenges in poor resource areas.

CONSENT

As per international standard, patient's written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

As per international standard, ethical approval has been collected and preserved by the author.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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