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CASE REPORT

'WRISTWATCH FRACTURE' OF THE DISTAL RADIUS: A NEW DIAGNOSIS?

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Abstract

Segmental forearm fractures are relatively uncommon in children, and their optimal management is unclear. We present an unusual segmental fracture of the distal radius in a 14 year old that appears to be related to a large metal wristwatch worn by the patient. It was successfully managed by closed reduction and immobilisation in a plaster cast.

Case Report

A previously healthy 14 year old right hand dominant male tripped and fell onto his out stretched left hand whilst walking his dog. At the time he was wearing a wristwatch. He presented to our Accident and Emergency department with an obvious deformity of his left forearm. It was a closed injury with no neurovascular deficit. All other systems were unremarkable. Initial radiographs showed a segmental fracture of the left distal radius with a fracture of the distal ulna. There was a Salter-Harris II fracture of the distal radius, which was radially and dorsally displaced in conjunction with a transverse fracture at the metaphysio-diaphyseal junction (see Figures 1 and 2).

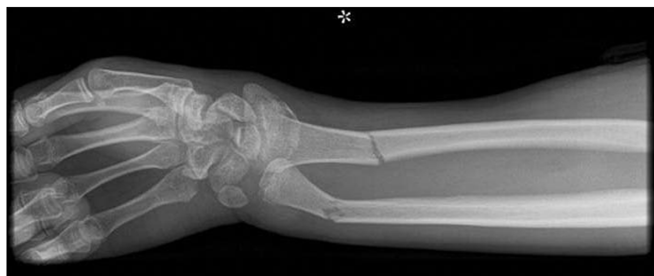

Figure 1. AP View of segmental fracture of the left distal radius with a fracture of the distal ulna.

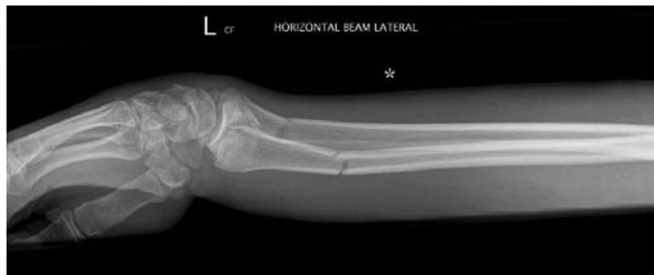

Figure 2. Lateral view of segmental fracture of the left distal radius with a fracture of the distal ulna.

He underwent manipulation under general anaesthesia and immobilisation in a left above elbow plaster of Paris cast. There were no immediate complications from the procedure and he was discharged the next day following an uneventful in-patient stay.

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The plaster cast was removed at 6 weeks. Subsequent radiographs showed the fracture to be uniting satisfactorily. At 3 months post injury his only restriction was a 10° lag in wrist palmar-flexion and supination and, by 6 months he had gone on to make a full functional recovery.

Discussion

Segmental fractures of the radius and ulna are relatively common in adults as a result of high-energy trauma. However there appears to be very little reported in the published literature on the incidence of these injuries in children, or their subsequent management [1].

Anatomical reduction and internal fixation has become accepted as the treatment of choice in adults. This is done in order to reduce the incidence of non-union, mal-union, loss of pronation, supination and subsequent function [2].

Traditionally stable non-segmental forearm fractures in children have been managed by manipulation and immobilisation in a plaster cast. In children fractures can be managed more conservatively, as bony union is rarely a problem and a certain amount of mal-union can be tolerated because of the remodelling potential in the immature skeleton. For unstable fractures, open reduction and compression plating has generally been favoured in the UK [3]. The disadvantage, however, is that in children the plates tend to subsequently require removal, and this second procedure is not without its complications. There has therefore been a more recent trend towards using flexible intramedullary nails, and there have been favourable reports in the literature [4].

As mentioned, paediatric segmental forearm fractures are rare. We can find only one other case report of segmental injury and the subsequent management [5]. In that case, the authors were unable to effect a closed reduction, and therefore open reduction and internal fixation was required. The distal segments were fixed with Kirschner wires and the proximal segments with semi-tubular plates. The child had a very good return to function.

The fracture pattern in our patient was unusually different. The position and configuration of the segment of radius correlated with the external position and shape of the wristwatch, which was presumably acting as a stress riser. In this case, we were able to achieve a satisfactory reduction by closed means, and early follow-up radiographs showed no loss of position. Our patient went on to achieve a fully satisfactory functional outcome.

To the best of our knowledge, there have been no documented reports of this particular fracture pattern in the radius, or of successful closed treatment of segmental forearm fractures in children.

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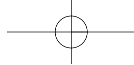

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