CASE REPORT

Fractured lateral condyle with associated olecranon fracture in a child

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Introduction

We describe an unusual elbow injury encountered in a 5-year-old boy. Fracture of the olecranon in children is an uncommon injury, accounting for between 4 and 7% of all childhood elbow fractures. 1 Fracture of the lateral condyle occurs in 15% of distal humeral fractures in children. 2 The combination of both injuries together has not been previously described. We describe the injury pattern and its management in our institution.

Case report

A 5-year-old boy fell off a scooter onto his outstretched hand with the elbow extended. He presented to A&E on the day of injury with pain over the left elbow. He had localised tenderness and swelling over the lateral condyle and the olecranon. He had no neurological signs and symptoms in the left hand and forearm. Antero-posterior and lateral radiographs revealed a displaced lateral condyle fracture (Figs. 1 and 2). No CT scan of the elbow was arranged. The patient’s arm was placed in an above elbow backslab and he was admitted for elevation and neurovascular observations.

He was taken to theatre the following day. An incision over the lateral condyle confirmed the lateral condyle fracture which was displaced as the radiographs had suggested. The fracture was reduced and three longitudinal Kirschner wires (K-wires) were used for fixation (Figs. 3 and 4). The radiographs revealed another displaced fragment that was thought to be the medial epicondyle (Figs. 1 and 2). A medial incision revealed no medial epicondyle fracture. A CT scan of the elbow would probably have been helpful at this point as the plain radiographs were not conclusive. A third incision over the olecranon identified a displaced intra-articular olecranon fracture. Two K-wires were used to fix this fracture (Figs. 3 and 4). Both fixations were performed under the guidance of image intensifier.

The patient was placed in an above elbow backslab. He was reviewed in the clinic for 1 week for a follow-up X-ray and completion of plaster. The wires were removed at 4 weeks and patient was mobilised. The arm had full range of movement for 12 weeks after his injury.

Discussion

Fracture of the olecranon in children is an uncommon injury. Approximately 80% of olecranon fractures are minimally displaced and can be managed by immobilisation. Where there is displacement...
more than 4 mm of the fracture open reduction and internal fixation is required. Longitudinal K-wires have been used successfully where operative treatment is indicated.

Lateral condyle fracture of the humerus is caused when a fall onto the outstretched hand with the elbow extended pushes the forearm into varus and pulls off the lateral condyle. This fracture, when displaced more than 2 mm, should be openly reduced and internally fixed. K-wires are an acceptable and successful method.

In the above case report, even though the lateral condyle fracture was obvious on the radiograph, the olecranon fracture was not (Figs. 1 and 2).

In a complex injury it may have been more appropriate to obtain a CT scan of the elbow before the final operative plan was made, or at least involve a paediatric radiologist. A correct diagnosis would have avoided an incision over the medial epicondyle.

Fractures of the elbow are among the most common fractures in children. Where the injury is complex and unusual, good pre-operative planning is

Figure 1 Pre-operative plain radiograph, antero-posterior of the left elbow showing the displaced lateral condyle and the olecranon fracture.

Figure 2 Pre-operative plain radiograph, lateral of the left elbow showing the displaced lateral condyle and the olecranon fracture.

Figure 3 Post-operative plain radiographs, antero-posterior of the left elbow showing the fixation with K-wires of the two fractures.
essential. The combination of a lateral condyle and olecranon fracture is an unusual injury and may be difficult to diagnose. Open reduction and internal fixation has good results where is indicated and a pre-operative CT scan can be very informative.

References


Figure 4 Post-operative plain radiographs, lateral of the left elbow showing the fixation with K-wires of the two fractures.