Type III Monteggia Injury With Ipsilateral Distal Radius And Ulna Fracture

S Sinha, W Chang, A Campbell, S Hussein

Citation

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Abstract

INTRODUCTION

Monteggia described a lesion that consisted of a fracture of the proximal third of ulna and an anterior dislocation of the proximal end of the radius. Bado[1] in a series of forty patients, found that the fracture and dislocation could be displaced in various directions and described an extensive classification according to the direction of displacement of the radial head. This is a case report of an eight-year-old girl who sustained a type III Monteggia injury with ipsilateral distal radius and ulna fracture that to the best of our knowledge has not been previously reported in literature.

CASE REPORT

An eight-year-old girl fell off a climbing frame from a height of about ten feet and sustained an injury to the right forearm. She had a severe dorsal angular deformity in the distal part of the forearm without any neurovascular deficit. The ipsilateral elbow was also swollen. Motion of the elbow and wrist was very painful and restricted. Radiographs showed dorsally displaced fractures of the distal radius and ulna along with a lateral dislocation of the radial head. In addition, there was a plastic deformation of the proximal ulna in a lateral direction (Fig 1).

Figure 1

Figure 1: (a and b): Initial radiographs show displaced fractures of the distal radius and ulna.

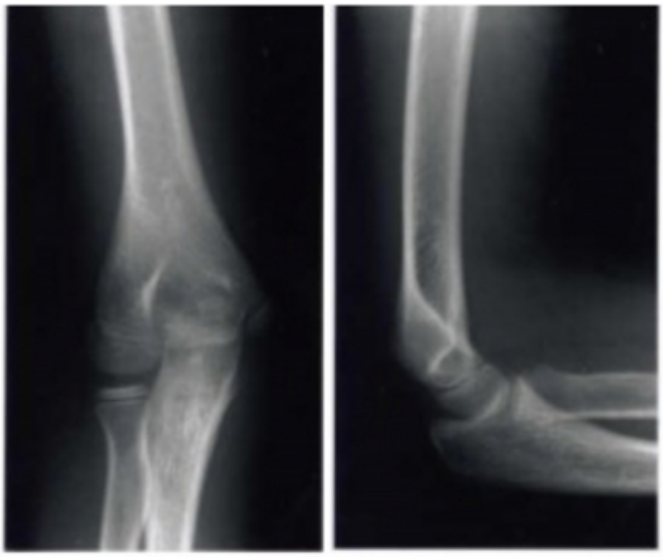
Figure 2

(c and d): Initial radiographs show lateral dislocation of the radial head with lateral bowing of the proximal ulna.

Under general anaesthesia, both deformities were corrected and the reduction confirmed by roentgenograms. The arm was immobilised in an above-elbow cast with the elbow in 90o flexion and the forearm in full supination. Check radiographs taken at 1 and 2 weeks after the injury confirmed that the reduction was maintained. The cast was removed at 4 weeks and gradual mobilisation commenced. Clinical examination three months after the injury showed that the patient had regained a full range of motion both at the wrist and elbow joints. Radiographs showed that the radius and ulna fractures had healed and that the radial head was maintained in its normal alignment (Fig 2).

Figure 3

Fig 2 (a and b): Follow-up radiographs three months after the injury show the radial head is maintained in its normal alignment.



DISCUSSION

Fracture of the distal forearm are very common in children but fractures involving the proximal one-fourth are much less common, with an incidence of 7% of all forearm fractures in children[2]. However, ipsilateral distal and proximal forearm injuries are very rare. Such combinations previously reported include a fracture of the olecranon and the distal radial epiphysis[3], a type II Monteggia injury with fracture separation of the lower radial epiphyses[4], and a type IV Monteggia injury with distal diaphyseal fracture of the radius[5]. A type III Monteggia injury with ipsilateral distal radius and ulna fracture has not been previously described.

The mechanism of injury of the ipsilateral two-level forearm fractures is not very well understood. A fall on the outstretched hand with a pronated forearm leads to fracture of the distal radius and ulna[6]. As the force travels upwards, an adduction force must have come into play to cause lateral dislocation of the radial head with lateral bowing of the proximal ulna. This mechanism of injury is supported by the fact that the reduction in this case was obtained by putting abduction strain on the fully extended elbow and by supination of the extended forearm, while a direct ulnarward pressure was applied over the dislocated radial head.

By reporting the case, we intend to highlight the existence of this particular injury combination, thus far not described in literature. We feel awareness of possible injury combinations

is important to avoid missing second lesions, which although rare, can be masked by a more obvious injury.

CORRESPONDENCE TO

Mr. W.R. Chang MRCS(Ed), Specialist Registrar, West of Scotland Deanery Flat 10, 32 Cleveden Drive Glasgow G12 0RX Tel: +44 (0) 141 334 7552 Mob: +44 (0) 7876757340 E-mail: wins71@yahoo.com

References

1. Bado J L. The Monteggia lesion. Clin Orthop1967;50:71-86.
2. Holdsworth B J, Sloan J P. Proximal forearm fracture in children: residual disability. Injury 1982;14:174-9.
3. Papavasiliou H, Neuropoulos B. Ipsilateral injuries of the elbow and forearm in children. J Paediat Orthop1993;13:561-6.
4. Kristiansen B, Erikson A F. Simultaneous typeII monteggia lesion and fracture separation of the lower radial epiphysis. Injury 1986;17:51-2.
5. Rodgers W B, Smith B. A typeIV monteggia injury with a distal diaphyseal fracture in a child. J Orthop Trauma 1993;7:84-6.
6. Evans E M. Pronation injuries of the forearm with special reference to the anterior monteggia fracture. J Bone Joint Surg 1949;31(B):578-88.

Author Information

S. Sinha, FRCS
Associate Specialist, Department of Orthopaedics, Monklands Hospital

W. R. Chang, MRCS(Ed)
Specialist Registrar, West of Scotland Deanery

A. C. Campbell, FRCS(Trauma & Ortho)
Consultant Orthopaedic Surgeon, Monklands Hospital

S. M. Hussein, FRCS
Senior House Officer, Monklands Hospital