Conry and Hall (1987) described two cases of cervical fracture associated with seat belts. However, neither sustained a spinal cord injury. The mechanism of cervical cord injury is not completely understood (Taylor, 1951). Attempts have been made to associate the type of cord lesion produced with the biomechanical forces acting to produce the injury. The age of the child affects the type of injury sustained, and children younger than 8 years old have a worse prognosis as upper cervical lesions are more common in the under-8-year-olds. On biomechanical principles and in the light of the available data, we believe the cervical injury in our patient was due to a severe hyperflexion injury at the time of impact. Younger children have heavier heads relative to their body and the fulcrum for maximum flexion in young children is at C2–3, whereas in the adult it is at C5–6. It would therefore explain this injury as a hyperflexion injury possibly with transient subluxation and spontaneous reduction.

The use of seat belts is clearly beneficial. With the legislation of the use of rear seat belts it is likely that more lap-style seat belts will be fitted in the rear centre seat of cars. It is suggested that placing young children in this position receives critical attention in the coming years as they would appear to be unsuitable for young children in whom specific child restraints should be used.

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References


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Requests for reprints should be addressed to: Mr N. Williams, Tutor in Surgery, University of Manchester, Hope Hospital, Eccles Old Road, Salford M6 8HD, UK.

Inferior (subacromial) dislocation of the outer end of the clavicle

S. R. Koka and J. C. D'Arcy
Department of Orthopaedics, Eastbourne District General Hospital, Eastbourne, UK

Introduction

Inferior dislocation of the outer end of the clavicle is exceedingly rare. Review of the literature on this subject showed that five such cases reported were all subcoracoid dislocations without an associated fracture (Patterson, 1967; McI'hee, 1980; Gerber and Rockwood, 1987). We report a case of subacromial dislocation with an associated fracture, treated surgically with a satisfactory result.

Case report

A 43-year-old woman was seen in the Accident and Emergency at the Eastbourne District General Hospital with an injury to the right shoulder after a fall from a galloping horse. After an initial examination and radiograph, an angulated fracture of the right clavicle was diagnosed and the dislocation of the outer end of the clavicle was not noted. Reduction of the fracture was attempted under intravenous sedation without success. She was reviewed in a fracture clinic 5 days after the injury and noted to have an angulated fracture of the right clavicle and subacromial dislocation of its outer end (Figure 1) without neurological problems.

At operation, the right acromioclavicular joint was exposed though a curved anterior incision. The dislocation was easily reduced and held with two Kirschner wires. The fracture of the clavicle reduced spontaneously (Figure 2).

At 6-week follow-up, the Kirschner wires were removed and the shoulder mobilized. At the 18 month follow-up the patient stated that she had some discomfort in the right shoulder after heavy manual work but she had a full range of painless movements. A radiograph (Figure 3) showed narrowing of the acromioclavicular joint indicating early degenerative changes. Despite this she has an excellent functional result.
Case reports

Discussion

Inferior dislocation of the outer end of the clavicle is a rare occurrence, there being only five previously reported cases (Patterson, 1967; McPhee, 1980; Gerber and Rockwood, 1987). We believe that subacromial dislocation of the outer end of the clavicle with an associated fracture has not been reported previously. We are of the opinion that the mechanism of injury may have been direct force on to a widely abducted and externally rotated shoulder.

Conclusion

Subacromial dislocation of the outer end of the clavicle with an associated fracture is rare and can easily be overlooked unless careful attention is paid to the initial radiographs. We feel that the unusual angulation of the clavicle fracture in our case may be taken as a 'tell-tale sign' of co-existing injury to the acromioclavicular joint. We agree with the other authors (Patterson, 1967; McPhee, 1980; Gerber and Rockwood, 1967) that the injury is best treated by open reduction.

References


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Requests for reprints should be addressed to: Mr S. R. Koka FRCSEd, Department of Orthopaedics, Eastbourne District General Hospital, Kings Drive, Eastbourne, East Sussex BN21 2UD, UK.