Management of Severe Sideswipe Injury to Elbow

M. R. H. Khan


A car occupant can sustain severe injury to his elbow due to direct force as in a 'sideswipe injury' or because of the overturning of the vehicle. Grotesque combinations of fractures and dislocations at the elbow joint can cause severe disabilities. In the early 1950s sideswipe injuries to elbow resulted in amputation in 50% of patients.

Campbell and Shorbe classified sideswipe injuries into various groups. Campbell's classification is based on combinations of fractures of shaft of ulna, comminuted fracture of radial head, fracture of the shaft of radius and comminuted fracture of distal humeral condyles. Shorbe classified the fracture according to severity. Group I implies soft tissue injury only. Group II includes olecranon process fracture. This is common. In Group III there are associated fractures of both radius and ulna. These may be associated with anterior displacement of proximal radio-ulnar joint. In the more severe Group IV injury a variety of fractures of the humerus can occur in combination. In the severest Group V injury all the bones around the elbow are fractured with severe soft tissue and neurovascular injuries.

Due to the complex nature of Group V sideswipe injury the treatment is always demanding.

This is a case report of a severe Group V 'traffic elbow' with an interesting combination of fractures, dislocation and nerve injury. The combination of fracture and dislocation noted in this patient has so far not been reported in literature. The report also describes the management and outcome.

Case Report

A 28-year-old Saudi male front seat passenger of a car was involved in a head-on collision with a trailer. He sustained concussion of head injury, trauma to the protruded right elbow and compound fracture-dislocation of his right ankle. His right elbow injury consisted of a comminuted intercondylar Y fracture of the distal humerus (Type C-3 fracture) Type I compound fracture of the olecranon process and a Type I Monteggia's fracture dislocation (Fig. 1). There was complete ulnar nerve palsy.

After resuscitation, the fractures around the elbow were internally fixed through a posterior approach. Comminuted intercondylar fractures were fixed by an intercondylar screw and Kirshner wire; the Y fracture by a Knowles' pin and Kirshner wires. The olecranon process fracture was internally fixed by tension band wiring and the proximal ulnar fracture by an AO-DC plate. The radial head was reduced and the annular ligament repaired (Fig. 2). The ulnar nerve was found to be severely bruised but in continuity. The nerve was transposed anteriorly. Following primary closure of the wound the elbow was placed in a posterior slab in 90° of flexion. The cast was removed 4 weeks postoperatively. The limb was supported in a collar and cuff. Gradual mobilization was instituted. After 8 weeks the Kirshner wires were removed followed by active and passive movements. At the last review after 6 months, the patient presented with a 15° lack of extension,
and flexion was up to 100°. He has limitation of supination by 5°. Ulnar nerve function recovered fully (Fig. 3). He returned to his pretrauma job as a supermarket salesman.

**Discussion**

Group V sideswipe injury otherwise called the ‘traffic elbow’ produces a complex combination of fracture dislocations and soft tissue trauma. Even in absence of appropriate fixation material (e.g. reconstruction plate or Y plate) treatment of these fractures by the so called ‘bag of bone’ technique should be avoided.

To ensure satisfactory results, in this complex injury, open reduction, meticulous intra-articular reduction and internal fixation should be the treatment of choice.
References