

IPSILATERAL MULTIPLE INJURIES OF THE UPPER LIMB

Salem M Al-Zahrani, MBBS, FRCS*

We are reporting an unusual case of ipsilateral multiple injuries of the upper limb. The injuries included fracture humerus associated with radial nerve injury, fracture of both forearm bones, fracture olecranon along with dislocation of the elbow and fracture of the first metacarpal bone. The classification and the plan of management of sideswipe injury are reviewed. To the best of our knowledge this combined multiple injuries have not reported. Bahrain Med Bull 1995;17:

Multiple fractures around the elbow are common in sideswipe injuries¹. The outcome of these injuries is variable. It can include amputation, elbow arthrodesis, permanent stiffness, and non union².

Campbel classified sideswipe injuries according to the combination of fracture of shafts of ulna and radius, comminuted fracture of head of radius and distal humeral condyles³. Shorbe in 1941 classified it into five groups according to the severity of the condition. Group 1 include only soft tissue involvement, group 2 is the commonest and includes fracture of olecranon process, group 3 is associated with fracture of both radius and ulna, group 4 includes any humeral fracture, and in the severest group 5, there are fracture of all bones around the elbow along with severe soft tissue and neurovascular injuries⁴.

The treatment of combined long bone fractures and dislocations of upper limb has not been thoroughly discussed like individual bone fracture⁵.

We are reporting concomitant ipsilateral fractures of the humerus, olecranon, ulna, radius and first metacarpal bone along with dislocation of the elbow and radial nerve injury in a patient who was involved in a Road Traffic Accident (RTA) with different mechanism of injury.

THE CASE

A 45 year old male sustained multiple injuries to his left upper limb following RTA. The car turned over to the driver side after colliding with a lamp post. The patient who was driving was not wearing a seat belt.

* Associate Professor
Orthopaedic Department
Faculty of Medicine
King Khalid University Hospital
King Saud University
Riyadh, Saudi Arabia

The patient sustained type 1 open fracture left humerus and deformity of left forearm and elbow. He was unable to dorsiflex his left wrist. There was no vascular injury.

Radiological examination showed fracture humerus with marked angulation, fracture both bones of forearm, fracture first metacarpal bone and comminuted fracture of olecranon with dislocation of the elbow (Fig 1,2).

Debridement of the wound and fixation of the fracture humerus by 6 holes dynamic compression plate (DCP) were done. Radial nerve was explored during surgery and found intact. Fractures of both bones of forearm were fixed with 6 holes 3.5 DCP

(Fig 2). Fracture olecranon fixed with 2 K-wires and figure of 8 tension band with reduction of the dislocated elbow (Fig 3).

The first metacarpal bone fracture was treated conservatively. Above elbow plaster back slab was applied for the first 7 days then active elbow exercise started. Physiotherapy exercise and Lively's wrist splint started 14 days later.

At 18 month all fractures were found clinically as well as radiologically united except for the olecranon fracture which was not united radiologically^{2,3}. Patient has almost full range of movements without pain. Radial nerve fully recovered after 8 months.

DISCUSSION

The outcome of concomitant ipsilateral multiple injuries and dislocations of the upper limb is related both to the severity of initial trauma and the treatment^{2,5}. It is rare to see 3 or more fractures and dislocation occurring in one limb. Rogers reported 33 cases who had fracture humerus, both forearm bones and olecranon but without dislocation of the elbow or nerve injury². Viegas reported one case of fracture humerus and both bones of forearm with dislocation of elbow but without fracture of the olecranon and nerve injury⁶. There is no much argument regarding the surgical treatment of combined fracture about the elbow with or without nerve repair.

In such severe injury around the elbow open reduction, meticulous intra articular reduction and rigid internal fixation should be the treatment of choice to achieve good result. The question is which fracture must be fixed first. The intra articular fracture needs anatomical reduction and proper fixation to achieve good function. By studying the case report we felt that surgical fixation of all fractures was required and that the initial fixation of fracture arm and forearm will facilitate adequate reduction and fixation of intra articular fracture or dislocation of the elbow. A computer search and literature review revealed no previous report of such combined multiple injuries.

CONCLUSION

Multiple injuries around the elbow are difficult problems and the outcome depends on the severity of injury and method of treatment. From the case presented, initial fixation of the arm and forearm will facilitate adequate reduction and fixation of intra articular fracture and dislocation of the elbow.

REFERENCES

1. Rockwood CA Jr, Green DP. Fractures in Adults. 2nd ed. Philadelphia: Lippincot, 1984:639-40.
2. Rogers JF, Bennett JB, Tullos HS. Management of concomitant ipsilateral fractures of humerus and forearm. J Bone Joint Surg 1984;66:552-6.
3. Sisk TD. Sideswipe fracture. In: Edmonson AS, Crenshaw AH, eds. Campbell's Operative Orthopaedics. Vol.1. St Loui:Mosby, 1980:678-9.
4. Shorbe HB. Car window elbows. South Med J 1941;34:372-6.
5. Morrey BF, Askew LJ, Chaw ET. A biomechanical study of normal function of elbow motion. J Bone Joint Surg 1981;63A:872-77.

6. Viegas SF, Gogan W, Railey S. Floating dislocation review the literature. J Trauma 1989;29:886-8. elbow: Case report and