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FRACTURE OF THE HUMERUS FROM ARM WRESTLING

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Fractures of the humeral shaft as a result of violent muscle activity (e.g. throwing) are well known. These are spiral fractures and usually localized between the middle and the distal one third of the humerus.

The mechanical reasons are complex and have been discussed by several writers (Herzmark & Klune 1952, Arfwidsson 1957, Chao et al. 1971, Gregersen 1971).

Within a short period of time the authors have treated two patients with this type of fracture of the humerus, in both cases associated with arm wrestling. In this game the two opponents sit face to face with their elbows placed firmly on a surface, gripping their right hands and trying to force each other's arm down. There is no record of an earlier report of this type of fracture.

CASE REPORTS

Case 1

A 23-year-old man (a weight-lifter) presented with a spiral fracture through the distal part of the right humerus. On admission a partial n. radialis paresis distal to the fracture was found.

The injury had happened in association with arm wrestling. During a treatment period of 24 hours with a hanging cast a total n. radialis paresis developed, and the patient was therefore operated on. The radial nerve was found to be lying over the sharp distal fragment of the fracture, but was not macroscopically severed. The fracture was fixed with an AO compression plate, and the postoperative course was uneventful. After 2 months the fracture had healed and complete radial nerve function was restored.

Case 2

A 74-year-old man presented with a spiral fracture of the distal part of the right humerus, which had been caused by arm wrestling. There was no sign of nerve or blood vessel damage, and the patient was therefore treated with a hanging cast for 2 months. Three months after the accident the fracture had healed and movement in the extremity was satisfactory.

DISCUSSION

It is apparent that arm wrestling can be connected with a typical lesion mechanism. A powerful muscle activity is created in the shoulder joint by the strong internally rotating pectoralis major, subscapularis, teres major and latissimus dorsi muscles, while the elbow joint is fixed by the biceps, brachialis, brachio-radialis and extensor carpi radialis longus muscles. At the same time as the forearm is pressed down a violent torque is exerted upon the diaphysis of the distal part of the humerus. The torque is transmitted by the forearm acting as a lever because the elbow joint is fixed in its flexed position. In the first case reported the unusually well-developed arm muscles of the patient might have contributed to the ensuing fracture.

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