

Wrist joint tamponade after scaphoid fracture

A case report

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A scaphoid fracture was associated with high intraarticular pressure due to hemiarthrosis. Scaphoid and lunate necrosis might be caused by wrist joint tamponade.

Avascular necrosis of the proximal fragment is the most common complication following fracture of the scaphoid (Alho and Kankaanpää 1975). Hemiarthrosis in the hip joint may cause femoral head avascularity due to increased intraarticular pressure following an undisplaced fracture of the femoral neck (Soto-Hall et al. 1964, Strömqvist et al. 1988) or of the acetabulum (Bauer 1985, Wingstrand et al. 1988).

A case of wrist joint tamponade after scaphoid fracture is reported.

Case report

A 41-year-old man sustained a trauma to his right wrist when starting a boat engine, which backfired. When seen at the hospital after a few hours, he had aching at rest and intense pain upon moving the wrist. There was a fullness and a localized tenderness in the anatomic snuffbox. Radiography showed an undisplaced transverse fracture through the waist of the scaphoid bone. Arthrocentesis was performed with a 0.8-mm needle, connected by a saline-filled system to a piezoelectric transducer. The intraarticular pressure in the wrist held in neutral position was 10 kPa (76 mm Hg), and 3-ml blood was then aspirated from the joint. Immediately after aspiration, the patient had some pain relief.

Discussion

The intraosseous blood supply to the proximal fragment of the scaphoid is interrupted by a fracture through the waist, as is the extraosseous blood supply if its capsular vessels are disrupted in a displaced scaphoid fracture (Taleisnik and Kelly 1966). The result is avascular necrosis of the proximal fragment. However, wrist joint tamponade associated with an undisplaced scaphoid fracture might perhaps also cause necrosis of the proximal fragment by compromising the blood flow in its capsular vessels. This pressure

does not have to exceed the arterial pressure; for when autoregulation fails, the blood flow is proportional to the local arteriovenous pressure gradient (Matsen 1980).

The cause of Kienböck's disease (necrosis of the lunate bone) is unknown (Linscheid 1985). However, the fact that it may occur after minor trauma (Ståhl 1947), but is rare after dislocation of the lunate bone (Russell 1949), indicates that it also might be the result of a wrist joint tamponade.

As in the hip joint tamponade associated with an undisplaced fracture, aspiration of the intraarticular hematoma may prevent osteonecrosis of the carpal bones.

References

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