DISLOCATION OF THE CARPAL SCAPHOID

Report of a Case

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A blacksmith aged thirty-six attended the casualty department with an injury of his right wrist. He was cycling over a narrow bridge when he collided with another bicycle coming in the opposite direction. On examination, the wrist was moderately swollen and tender over its radial aspect. All movements were greatly restricted and painful. Radiographs showed that the scaphoid had been rotated so that the proximal pole, which normally articulates with the radius, had been dislocated to the lateral side of the radial styloid process and the distal end had been moved in front of the capitate (Fig. 1). The capitate, trapezoid, trapezium and first three metacarpals had closed up towards the radius, whereas the other carpal and metacarpal bones remained in their normal positions. A small chip fracture of one of the carpal bones lay between the capitate and the radial styloid.

Treatment—Under general anaesthesia the scaphoid was easily reduced by forced deviation of the hand to the ulnar side with digital pressure over the displaced scaphoid. A plaster back splint was applied. Further radiological examination showed that the scaphoid was reduced to its normal position (Fig. 2). Radiographs three weeks later showed that the scaphoid had not undergone any ischaemic change; and on clinical examination the swelling was minimal, tenderness was slight, and half the full range of active movement was present.

The wrist was enclosed in plaster-of-Paris for a further three weeks, at the end of which time the swelling and tenderness were absent, and movement was only slightly restricted. The radiological appearance was again normal. Two weeks later the patient returned to heavy manual work without any disability. When last seen eighteen months after the injury he was free from disability and the range of wrist movement was full.

Comment—Isolated dislocation of the carpal scaphoid is a rare injury. The considerable force that is necessary to squeeze out the scaphoid more usually results in a fracture of the radial styloid or of the waist of the scaphoid than in the dislocation of the scaphoid.
In most reported cases the dislocation has been caused by injury while the hand was gripping something in ulnar deviation and dorsal extension of the wrist. Thus in the case reported by Walker (1943) the man was cranking a van which backfired, and Kuth's (1939) patient was a street car driver involved in a crash while holding the knob of the control handle, which was sufficiently violent to break off the handle in his hand. Russell (1949) reported a case like the present one in a motor cyclist, and in two other cases, those reported by Buzby (1934) and Andrews (1932), the patients were involved in accidents while driving motor cars; in Andrews' case the ulnar styloid process was also fractured.

The force is transmitted up the second and third metacarpals through the capitate to the scaphoid. If the hand is not in ulnar deviation the sudden dorsiflexion that takes place results in the more common transcarpal retrolunar dislocation of the capitate with a fracture or dislocation of the scaphoid.

Treatment should be aimed at reducing the dislocation as soon as possible, because the earlier it is done the more likely it is to succeed; within a week of the injury the bones become glued together with serous exudate. In most cases it has been possible to reduce the dislocation by direct pressure over the scaphoid while traction is applied to the fingers, usually with the wrist extended. Only in a few cases has open reduction been necessary, usually when there has been delay in attempting the reduction. The case with which the reduction was effected in the present case was probably due to the fact that only one hour had elapsed between the injury and manipulation. Watson Jones (1929) condemned the use of levers between the articular surfaces as being likely to result in osteoarthritis. In Walker's case (1943) closed manipulation four days after the injury failed. At open operation the tenseness of the ligaments made the operation so difficult that the scaphoid had to be severed from its attachments; after being washed in saline it was replaced and the torn capsule was sutured over it. Revascularisation of the bone took place with an excellent functional result.

In long-standing cases arthrodesis or excision of the scaphoid will be necessary. It is interesting that in none of the cases reported has there been any evidence of permanent avascular necrosis.

REFERENCES


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