

## ISOLATED DISLOCATION OF THE CARPAL SCAPHOID

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A case of isolated dislocation of the carpal scaphoid is presented and the literature on the subject reviewed. An analysis has been made of the cases reported and attention is drawn to certain features which are common to most of the cases.

*Key words:* scaphoid; carpal; dislocation; isolated

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With the exception of the lunate bone an isolated dislocation, i.e., a dislocation unassociated with displacement or fracture of other carpal bones, is extremely rare and that of the scaphoid is no exception. It receives but scant attention in many standard textbooks and none at all in others. Nigst & Buck-Gramcko (1975) in their classification of the types of subluxations and luxations of the carpal scaphoid draw attention to its radiological features, but a search of the literature reveals that since 1930 only eight cases have been reported, two by Higgs (1930), one each by Buzby (1934), Kuth (1939), Walker (1943), Russell (1949), Schlossbach (1954), Connell & Dyson (1955). By contrast the other and entirely unrelated type of displacement of the scaphoid, that known as rotational subluxation (or dislocation), has been abundantly documented during the same period.

The rarity of isolated dislocation—sometimes referred to as acute dislocation—of the scaphoid merits a report of a further case, thus making a total of nine in the last 46 years.

### CASE REPORT

A 23-year-old driver of a car was involved in a road accident in February 1976, damaging his right wrist. When seen at the hospital within an hour of the accident his wrist was painful, movements were restricted and there was an abnormal tender bony prominence distal to the radial styloid process. There was no nerve lesion. There was a slight general swelling.

X-rays (Figure 1) showed that the scaphoid was dislocated forward and outward, but there was no evidence of displacement or fracture of the other carpal bones. There was a fracture at the base of the styloid process of the ulna. Under general anaesthesia reduction was easily achieved by traction on the thumb and fingers and digital pressure on the bony prominence—the bone slipping back into position with a soft snap. Subsequent X-rays (Figure 2) showed that the bone had been fully reduced.

The wrist was immobilised in slight dorsiflexion in plaster for 6 weeks. He was then encouraged to put the hand to increasing use. He resumed his normal work as a teacher of pottery in 8 weeks. Eight months after the injury he had no complaints except an occasional ache and was doing his normal work without difficulty. There had been no recurrence of the dislocation. The wrist was normal in appearance and in movements. X-rays (Figure 3) showed no evidence of ischaemic necrosis nor of any other abnormality.



Figure 1. Initial displacement of the scaphoid.



Figure 2. Full reduction.

**DISCUSSION**

A study of the reports of the eight published cases, together with the one reported here, reveals certain features

which are common to the majority who have suffered this injury.

*The mechanism.* In all but one case (Schlossbach 1954) the injury resulted from accidents involving road vehicles.

Figure 3. Normal appearances 8 months after the injury.



Thus five were sustained whilst riding a motor-cycle, two whilst driving a car and one on cranking an engine. A factor which is common to all these activities is that the wrist is firmly held in a position of dorsiflexion and ulnar deviation. A sudden violent jerk forcing the hand further in these two directions would have a distraction effect on the radial aspect of the wrist joint and eject the scaphoid in a forward and outward direction. This is the position, with slight variation, which is seen in the X-rays of the majority of the cases. This mechanism, suggested by Connell & Dyson (1955), is confirmed by a study of these cases. As a point of interest all reported cases have been men.

*Diagnosis and treatment.* With one exception all the patients were seen early, usually within hours of the accident and the diagnosis presented no difficulty either by clinical examination alone or by X-rays, and there was no delay in instituting treatment. Closed reduction was easily accomplished by traction on the fingers and digital pressure on the bony prominence followed by immobilisation

for a few weeks with the wrist in slight dorsiflexion.

Open reduction was very rarely called for when the patients were treated promptly but it became necessary in two cases; thus Higgs (1930) described how open reduction had to be employed in one of his cases first seen 6 weeks after the injury. Walker (1943), in a case presenting 5 days after the injury, failed to reduce by manipulation, and even at operation the bone could not be restored to its normal position. He removed it, excised some obstructive tissue and was then able to replace it easily and it remained stable.

*Ischaemic necrosis.* A remarkable feature in view of the gross displacement of the bone is that this complication is not reported as having occurred in any of the patients. Even in the case described by Walker (1943) and referred to above, although the X-ray appearances 7 weeks after the operation showed changes suggestive of ischaemia of the scaphoid, 7 months later the bone was normal.

*Results.* The results in all nine cases,

whether reduced by closed or open methods, were uniformly good although not necessarily perfect. None suffered from subsequent instability. No doubt such good results are to be attributed to their being seen and diagnosed early and easily (in contrast to many cases of rotational subluxation) and the fact that at this early stage closed reduction is readily accomplished.

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