PERCUTANEOUS NEEDLE-REDUCTION OF A DISLOCATED LUNATE BONE

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Dislocation of the lunate bone is a comparatively rare injury. Watson Jones (1929) reported an incidence of one in every 400 fractures and dislocations. Various methods of reduction have been recommended (Böhler 1938, Davis 1923, Farr 1926 and Watson Jones 1929). Common to all these methods is the application of traction to the hand in order to pull the capitate away from the radius while pressure is exerted against the lunate bone from the palmar side of the wrist. Reduction can usually be accomplished if performed within a few days of injury. If a longer interval has elapsed, the use of skeletal traction or open reduction may be necessary. Late results after operative reduction are usually poor because of the development of osteoarthritis in the radiocarpal joint. Watson-Jones (1943) recommended excision of the lunate bone if reduction has not been accomplished within a reasonable time after the injury. The following case is reported to illustrate a percutaneous method of reduction which proved useful in a patient in whom the lunate bone was dislocated anteriorly and rotated about 90 degrees.

CASE REPORT

A man of sixty-four fell ten feet into a ship's hold, injuring his right wrist. The next day the wrist was swollen, stiff and painful. A radiograph showed a dislocation of the lunate. An immediate attempt at reduction under anaesthesia was unsuccessful and the patient was referred to the surgical department of Aker Hospital on the same day. Further attempts at reduction were made shortly after admission: strong traction was applied to the wrist, which

FIG. 1
Radiograph before reduction.

was dorsiflexed and then slowly flexed palmwards while pressure was exerted over the lunate bone by the thumb from the palmar side of the wrist. The manipulation was performed under fluoroscopic guidance. This attempt also was unsuccessful and so was a further manipulation the next day (Fig. 1). Operative treatment was therefore planned five days after the injury.

FIG. 2

Condition three months after reduction.

FIG. 3

FIG. 4

FIG. 5

Figure 3—The distal pole of the displaced lunate bone is engaged by the needle. Figure 4—The bone is tilted into its proper position by the pressure of the needle. Figure 5—The pressure of a thumb over the front of the lunate bone may cause the bone to take a transverse position, thus making reduction impossible.

Operation—A thin cannula was inserted from the palmar side of the wrist at the distal margin of the flexor retinaculum. Under fluoroscopic guidance the tip of the lunate was easily engaged by the needle (Fig. 3), and moved and tilted so as to slip into its proper position (Fig. 4). Figure 2 shows the condition of the wrist three months after reduction.

Comment—Pressure of a thumb over the front of the wrist gives diffuse pressure on the bone because of the intervening tendons and ligaments, but the point of a needle can be directed exactly to the tip of the lunate bone which is thus manipulated into its proper position. Figure 5 suggests how diffuse pressure over the front of the lunate bone may cause it to attain a transverse position, thereby making reduction impossible.

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