

CHAPTER XVIII

INJURIES OF THE HAND

THE great number of small articulations in the carpus increases the number of pathological processes usually met with. The interesting diseases of the synovial tendon-sheaths, which surround the wrist and extend into the fingers, also require mention. Injuries of the thumb, especially the notorious dislocation of its first phalanx, almost deserve a separate chapter, while Dupuytren's contraction still further swells the list of affections.

French neurologists, in describing the posture and shape of the hand so characteristic of palsy of the main nerve-trunks, have applied the names ordinarily used

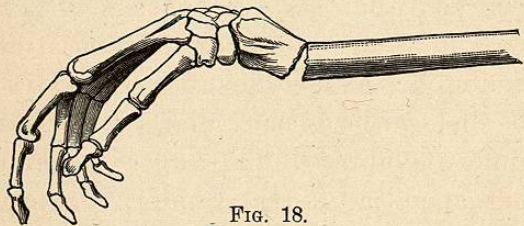


FIG. 18.

in the description of physiognomy. They speak, for instance, of the hand of the pathetic preacher. The surgeon is reduced to the plainest prose—he studies the abscess of the hand, hidden beneath the horny palm of the cobbler or carpenter; he cures the panaritium

of washerwomen and servant-girls, and puts an end to their sleepless nights by incisions, the depth of which bear witness to his diagnostic skill.

FRACTURE OF THE LOWER END OF THE RADIUS deserves our first attention. Direct violence may fracture the bone in any situation, but indirect, as a fall upon the outstretched hand, causes a fracture immediately above the wrist. The injury is the result of tearing rather than of breaking of the bone. A fall upon the dorsally flexed hand puts the ligaments upon the stretch; not they, but the lower end of the radius, give way, so that the carpus and the lower fragment remain united. This fracture is frequently overlooked by ignorant practitioners. Pitha puts it too mildly when he says, "It is often difficult to make physicians realize that a fracture has occurred." The symptoms are by no means insignificant. As soon as the limb is fractured, the upper fragment, which consists of the greater part of the radius, protrudes on the flexor side of the forearm, while the lower fragment, and with it the hand, assumes a position dorsal to the lower end of the upper fragment. The chief symptom can be readily deduced from this. It consists of a flattened prominence anteriorly, just above the wrist-joint, and a corresponding depression dorsally (silver-fork deformity). If the dislocation is more marked, the axis of the forearm along the outer (radial) side is angularly bent. By pressing upon the dorsal groove, the prominence grows more marked anteriorly. This is impossible with the radius intact, for the unfractured bone would resist such pressure. The position of the hand is not constant. Usually it assumes a position of ulnar flexion if the forearm is extended. Careful inspection detects

some slight supination. The main symptoms, however, are sufficient: prominence on the flexor surface above

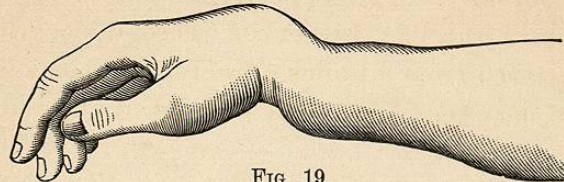


FIG. 19.

the wrist-joint, a corresponding dorsal groove, and abnormal mobility. With these present, attempts to elicit crepitus torture the patient unnecessarily.

In many of these fractures the extremity shows a characteristic deformity if the flexor surface is examined. The angular break in the long axis of the limb, as indicated by the dotted line, can be seen in Fig. 20.

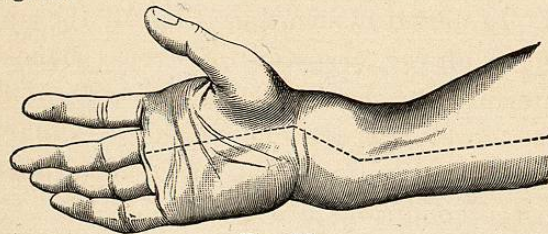


FIG. 20.

But why should this fracture be so often overlooked? When the displacement is slight the fracture is not recognised, and the condition is mistaken for a sprain; when the displacement is great, the diagnosis of dislocation is made. Surgeons in former days more frequently spoke of dorsal dislocation; in more recent days this is but rarely met with. Dupuytren was correct in stating that most of the cases of dorsal dislocation of the older authors were unrecognised fractures of the radius with much displacement.

True and undoubted DISLOCATIONS OF THE WRIST

have, however, been observed. They occur between the radius and the carpus; the hand and carpus are displaced dorsally. The opposite displacement is seen much more rarely. Either of these dislocations are differentiated from a Colles's fracture by measuring the distance between the styloid process of the radius and

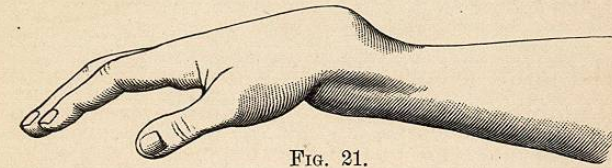


FIG. 21.

some fixed point in the hand. In the case of the fracture, the distance remains normal; in dislocation, more or less shortening is found. Careful palpation will do the rest. In dorsal dislocation (Fig. 21) the upper convex surface of the first row of carpal bones can be felt posteriorly in the region of the wrist-joint; anteriorly the lower concave end of the articular surface of the radius can be palpated. In dislocation forward (Fig. 22) the conditions are reversed.

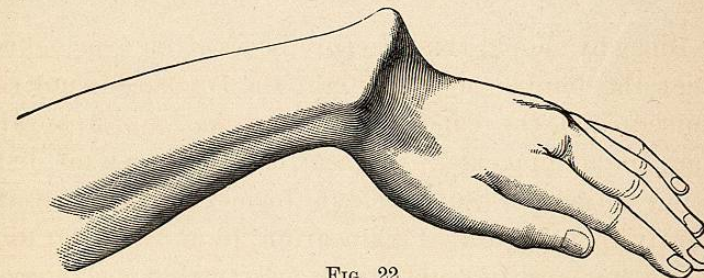


FIG. 22.

We have observed one case of *epiphyseal separation* at the lower end of the radius, in a child two years of age, due to a fall on the hand. This is a very uncommon injury.

Small children frequently sustain an obscure injury by a sudden

tug upon the arm. The child keeps its arm quiet and cries aloud when the hand is grasped. The surgeon examines each joint; and, as Goyrand correctly states, finds crepitus in the elbow joint. Consequently, he prescribes cold applications to this region. As a matter of fact, the injury is situated in the wrist, and consists either of a *rupture of the dorsal ligaments*, or, as Goyrand has found, of a *dislocation of the inferior radio-ulnar articulation*. In every case extension of the hand and pressure upon the dorsum of the carpus effects a reduction, and at once relieves the pain. We need not enter into a discussion of the merits of Goyrand's view, that the trouble is due to a dislocation of the radio-ulnar joint with displacement of the triangular cartilage; but this injury must be kept in mind, as children are frequently roughly pulled by the hand. The scene described by Bogumil Goltz, of a mother, who catches her falling child with one hand and removes the boiling pot of milk from the fire with the other, is a frequent one.

In adults, *dislocation of the inferior ulnar articulation* does not often complicate the above-mentioned fracture of the radius. When it does, the attitude is characteristic. The whole hand is displaced outward and held in radial abduction; the head of the ulna is very prominent and bulging. And yet, incredible as this may sound, a man was brought to v. Dumreicher's clinic who had been treated by the doctors for articular rheumatism. The first glance showed bilateral fracture of the radii, with dislocation of the ulnæ. In addition, he had sustained a fracture of the tibia below the left knee-joint, with considerable displacement. This man had been found beneath a cave-in, and still the diagnosis of *rheumatism* had been made!

The prognosis in fracture of the radius in old people should be conservative. In very old people fissures may extend into the wrist-joint, with a resulting ankylosis. The condition may be recognised by the behaviour of the joint on the second or third day after injury. In spite of rest and bandaging, the swelling does not decrease; on the contrary, it increases, and spreads about the joint, which grows more and more painful. In a laborer I saw a τ fracture of the lower end of the radius which healed without ankylosis.

Dislocation of isolated carpal bones, fractures of the metacarpal bones, and of the phalanges, require no

special notice from a diagnostic standpoint. They must be recognised by palpation.

DISLOCATIONS OF THE THUMB, however, demand special mention. Dorsal dislocation is the more frequent. The first phalanx is displaced upon the dorsum of the metacarpal bone; its axis almost forms a right angle with that of the metacarpal. The joint between the first and second phalanx is flexed. Most beginners are deceived by these symptoms. They mistake the rounded head of the metacarpal bone, which is felt bulging in the ball of the thumb, for the proximal end of the phalanx, and therefore wrongly call the dislocation anterior. By seizing the thumb and changing the position from hyperextension to a straight angle, this error can

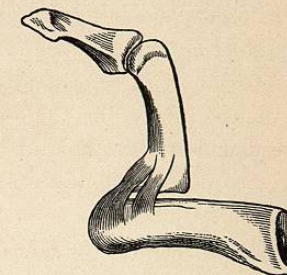


FIG. 23.

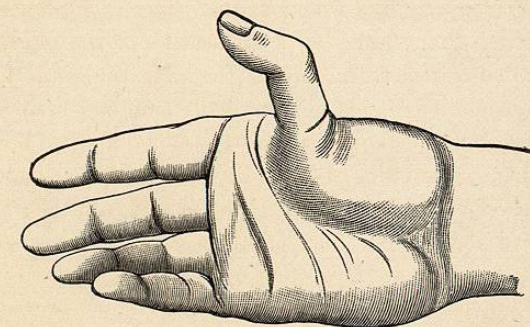


FIG. 24.

not occur, for the axis of the first phalanx will now no longer intersect the prominence, which was mistaken for the base of the phalanx. Anterior dislocation is of rarer occurrence. The first phalanx of the thumb

forms a prominence in the thenar eminence, and, in addition, is displaced to the radial or ulnar side of its metacarpal bone. The thumb is shortened; the interphalangeal joint is flexed. A characteristic feature is the pronation of thumb in the ulnar displacement and supination in radial displacement.

CHAPTER XIX

INFLAMMATORY PROCESSES IN THE HAND

IN the vicinity of the carpus any *effusion* which is plainly recognisable can be situated only in the radiocarpal joint. The relations of such a swelling can be studied on the cadaver if the joint cavity is filled through a hole bored obliquely through the radius. Occasionally such an effusion will be seen in the living subject, and the clinical findings will then be found to correspond with those experimentally obtained. In the cases that I had occasion to see, the hand was held in slight abduction, and a flat, fluctuating swelling appeared upon the dorsum of the carpus. The upper boundary of the swellings was plainly formed by the posterior edge of the radial articular surface. The swelling showed considerable increase of tension when the hand was pressed upward toward the radius. In addition, a slight degree of abnormal mobility could be demonstrated between the radius and the carpus. In these cases, after inflammatory symptoms had subsided, absorption of the fluid took place when treatment by means of pressure was instituted. Inflammation of the carpal joints, in toto, is not distinguished by symptoms such as these, for the rigid capsules prevent the collection of a recognisable amount of fluid. Instead of a fluctuating tumour, *diffuse* swelling of the whole