

Non-union of a fractured fifth metacarpal

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THE RARITY of non-union of a fractured fifth metacarpal warrants this report of a single case. An extensive review of the literature from 1940 to the present revealed no article of a similar case having been reported. In addition to a case report this paper attempts to explain the mechanism which resulted in non-union.

Case report

P.Y. a 22-year-old man was injured in a road traffic accident on the 11 March 1967. The following injuries were sustained: cerebral con-

cussion, a fracture of the anterior cranial fossa of the skull associated with a left frontal aero-coele and cerebro-spinal fluid rhinorrhoea from the left nostril, facial fractures including a fracture of the middle third of the facial skeleton with minimal displacement, numerous broken teeth, multiple superficial lacerations with bruising and a double fracture of the right fifth metacarpal (Fig. 1).

The fractured fifth metacarpal was treated using a crepe bandage and by encouraging early movement. The patient, it will be appreciated,



FIG. 1. X-ray on admission, 11 March 1967, showing a double fracture of the fifth metacarpal.



FIG. 2. X-ray on the 5 October 1967 showing established non-union at the distal fracture. The proximal fracture has united but with some shortening.



FIG. 3. Diagram to show how the comminuted fracture at the base has allowed the major fragment to move proximally while the head is held in position by the deep transverse ligament so maintaining a gap at the distal fracture.

was under intensive observation and treatment by the neuro-surgical and facio-maxillary teams; however he returned to the orthopaedic depart-

ment on 5 October 1967 complaining of pain over the fifth metacarpal when using the right hand for lifting or gripping. Examination of the hand revealed no abnormality other than localized tenderness over the fifth metacarpal on firm pressure but an X-ray showed established non-union of the distal fracture (Fig. 2).

Once the cause of the pain had been explained to the patient and the doubtful prospects of a satisfactory result following operative measures, he declined further treatment and resolved to accept his disability.

Discussion

I believe that the mechanism, which resulted in non-union, was that the comminuted fracture at the base of the metacarpal allowed the major shaft fragment to move proximally, while the head was held in position by the deep transverse ligament, so maintaining a gap at the distal fracture (Fig. 3).

The rarity of this injury and the relatively satisfactory result obtained by the patient indicates that no conclusions need be drawn concerning treatment.

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