Case 7

History
Trauma to hand.

Findings
Comminuted intra-articular fracture of the base of the first metacarpal. Incidental note is made of a second metacarpal diaphyseal fracture.

Discussion
This fracture, originally described in 1910, now bears the name Rolando fracture. Originally described as a Y-shaped 3-fragment fracture that extended to the carpometacarpal joint surface, today the eponym is widely used for any comminuted intra-articular fracture at the base of the thumb. The Rolando fracture occurs secondary to axial loading that splits and crushes the articular surface somewhat analogous to the Pilon fracture in the ankle. Rolando described two cases that occurred secondary to a fall on the radial side of the hand with the thumb in adduction and a third case caused by a closed fist with the thumb folded and held in the palm striking an adversary’s head.

The Rolando fracture can be associated with significant post-traumatic arthritis if there is incongruity at the articular surface. Marked decrease in hand function can eventually result if proper fixation is not achieved, with significant joint incongruity (i.e., >1-2 mm of articular step-off) mandating treatment. In addition, displacement of the fracture fragments may result secondary to musculotendinous action of the extensor pollicis brevis and longus, flexor pollicis longus, adductor pollicis, and the abductor pollicis longus.

References

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