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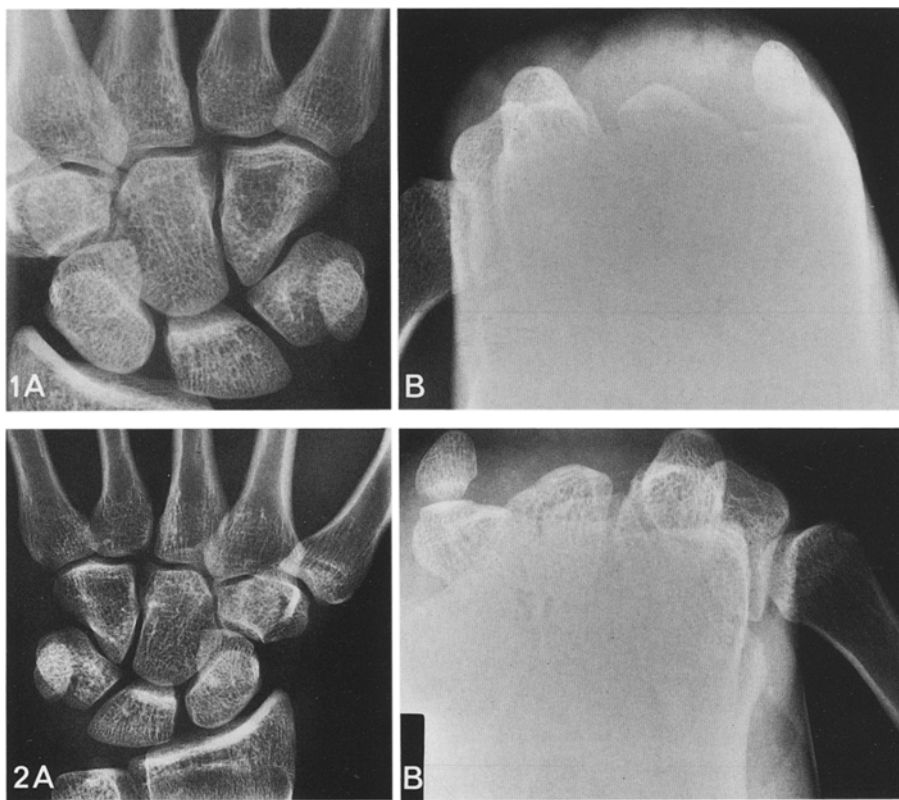
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## Case report 464

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### Radiological studies

**Fig. 1 A, B.** Posteroanterior (A) and carpal tunnel (B) views of the right wrist and hand are demonstrated

**Fig. 2 A, B.** Comparison films of the asymptomatic left wrist show features similar to those present on the right. The radiological findings will be described subsequently

### Clinical information

This 28-year-old man presented to the emergency room with pain dorsal to the proximal aspect of the right second and third metacarpals following a fight. No prior history of trauma to the hand or wrist was elicited. Physical examination demon-

strated edema and ecchymosis with a human bite-induced laceration on the dorsum of the right third metacarpophalangeal joint. No neurological deficits were present and muscle strength was limited only by pain. Roentgenograms of the right wrist and hand were obtained (Fig. 1 A and B). The radiological findings were noted to be symmetrical when similar studies of the asymptomatic left wrist and hand (Fig. 2 A and B) were obtained.

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### Diagnosis: Bilateral congenital absence of the hook of the hamate

The differential diagnosis is greatly limited, unless it were inferred that the hook of each hamate bone was avulsed – a most unlikely consideration. Once the congenital abnormality is detected, and particularly in view of it being bilateral, no other differential possibility exists.

No evidence of fracture or dislocation in either wrist and hand is present.

### Discussion

The hook or hamulus, a projection of the distal palmar aspect of the hamate bone, forms the ulnar wall of the carpal canal and the radial boundary of the canal of Guyon. The carpal tunnel transmits the median nerve and flexor tendons; the canal of Guyon transmits the deep branch of the ulnar nerve. The flexor brevis and opponens digiti quinti muscles and the pisiform-hamate ligament originate from the hook; a portion of the volar carpal ligament inserts into the hamulus [2]. When all or part of the hamulus arises from a second ossification center that does not fuse with the body of the hamate bone, it remains a separate ossicle (the *os hamuli proprium* or *os hamulare basale*) into adult life [3].

Functional impairment associated with a small hamate hook is not reported. In fact, surgical resection of this bony protuberance has been advocated for treatment of certain median and ulnar nerve entrapment syndromes [7] and for fractures of the hamulus [5]. Our patient had no history of functional abnormalities of either hand and no neuromuscular deficits were found on examination.

The only source of concern regarding an *os hamuli* lies in the potential for misdiagnosis as a fracture in cases of trauma [6]. Although congenital absence of the hamulus has not been described previously in the literature, the condition was included by Norman et al. in the differential diagnosis on failure to visualize the hook of the hamate due to fracture [4].

The absence of an osseous hook of the hamate in our patient does not imply that the structure was not present in cartilaginous form. This possibility could have been evaluated with magnetic resonance imaging had the patient been available. The fact that the hamulus was absent bilaterally strongly supports a congenital origin.

In *summary*, a 28-year-old man who presented after an injury in a fight, showed absence of the hook or hamulus of the hamate bone in the symptomatic left wrist. The asymptomatic right wrist showed a similar change, indicating the diagnosis of congenital absence of the hook of the hamate – an abnormality apparently not previously described in the literature. The anatomical and clinical implications, both potential and real, of an absent hook of the hamate in searching for fractures or dislocations of the wrist, are discussed briefly. It is stressed by the authors that the potential for a misdiagnosis, particularly in a case of trauma to the wrist, certainly exists in instances where an absent or hypoplastic hook of the hamate is present. It is also stressed that even though a hook of the hamate is not delineated radiologically, it may be present in its cartilaginous form. Under such circumstances, imaging with magnetic resonance might be helpful.

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