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Visual Diagnosis

Ulnar sided wrist pain after falling on outstretched hand

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1. Ulnar sided wrist pain after falling on outstretched hand

A 59-year old male presented at the emergency department after falling on his outstretched hand. On physical examination, there was slight tenderness over the ulnar side of the wrist and wrist movements were painful. Right wrist anteroposterior (AP), lateral x-rays and computed tomography (CT) images of the wrist were taken (Fig. 1). CT revealed a bone fragment on the tip of the hook of hamate. What is your diagnosis in this patient?

2. Diagnosis: Os hamuli proprium

In the presented case, the wrist x-rays were normal. On CT examination, there was an oval shaped well-corticated bone fragment at the tip of the hook of hamate which was consistent with os hamuli proprium. There was no other bony lesion or fracture. Further questioning about previous wrist trauma or symptoms was negative. Thus, os hamuli proprium was an incidental radiological finding in this patient. A static wrist splint and non-steroidal anti-inflammatory drugs were prescribed with a diagnosis of wrist sprain.

A variety of accessory ossicles and sesamoid bones may be found around the hand and wrist, and these usually have no clinical significance. Os hamuli proprium is a rare accessory ossicle located at the tip of the hook of hamate.[1,2] Although its origin is not well-known, it has been suggested that during embryological development, the failure of fusion of the secondary ossification center which belongs to the hook of hamate is the reason for its occurrence.[3]

Os hamuli proprium is usually bilateral. Thus, the presence of a similar bone fragment on the contralateral side supports the diagnosis. In addition, os hamuli proprium is a separate, rounded and corticated bone, whereas a fracture of the hook of hamate has no cortical bone on the fractured surface (Fig. 2). Moreover, palpation of the hook of hamate on the palmar surface of the wrist will induce pain in patients with a hook of hamate fracture. The hook of hamate can not be seen clearly on direct anteroposterior and lateral radiographs due to superimposition, as was the case in the current patient. Therefore, when fracture of the hook of hamate is suspected, an additional carpal tunnel view should be requested. Furthermore, CT is quite helpful as it provides information on the sectional and three-dimensional detailed anatomy of the wrist.

Os hamuli proprium is accepted as a normal anatomic variation, although in the context of trauma, it can easily be misinterpreted as a fracture of the hook of hamate on imaging studies.[4] Therefore, emergency physicians should be aware of this rare anatomic variation and familiar with how to differentiate these two distinct entities, because the management is totally different.

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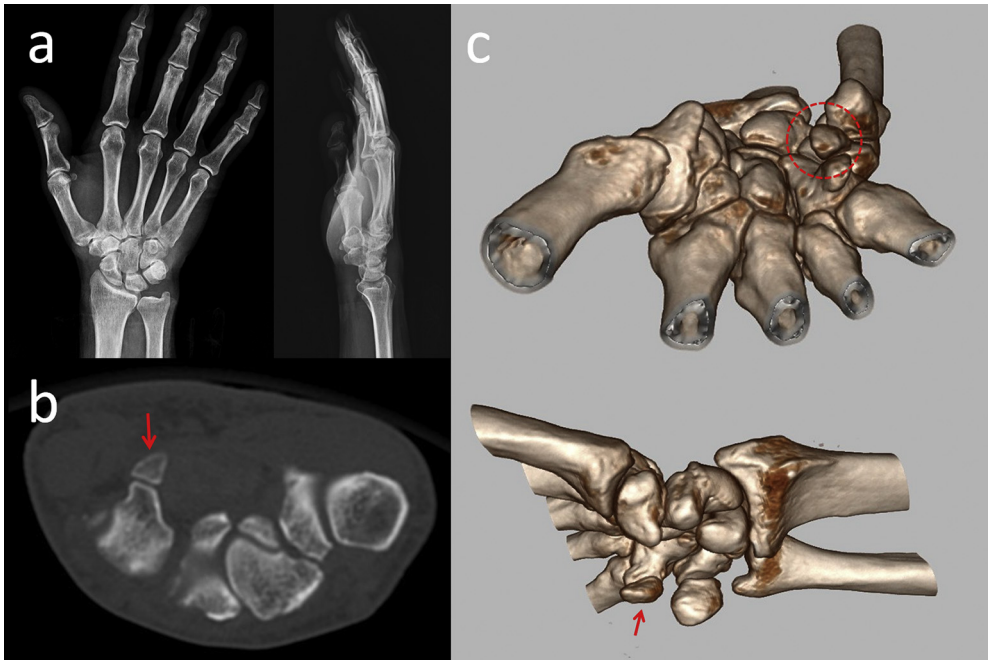

Fig. 1. (a) AP and Lateral hand radiographs. (b) Axial CT section of the wrist. (c) 3D image of the wrist *(red arrows show the bone fragment).*

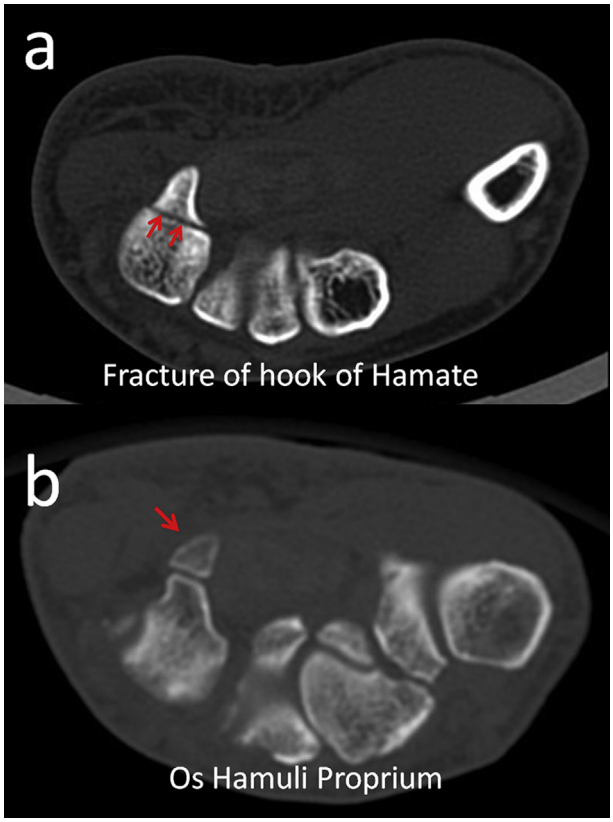

Fig. 2. (a) Axial CT section of a patient with fracture of the hook of hamate. (b) The presented case with os hamuli proprium. Note the corticated periphery of the os hamuli proprium.

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