

## A dorsal bony protuberance of the hand

### Protubérance osseuse dorsale de la main

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#### I. CASE REPORT

A 30-year-old man came to our institution complaining of a prominence in the region of the dorsal third carpo-metacarpal joint and a pain in his right wrist, aggravated by flexion and extension movement.

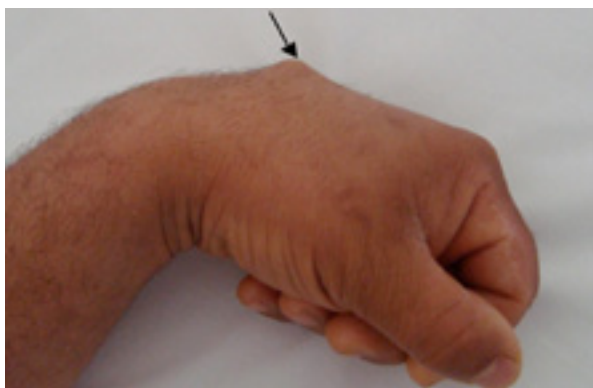
An inquiry into the history of the swelling discovered that the patient had suffered a trauma to the right hand 4 years previously.

On examination we found a painful hard dorsal protuberance at the base of the third metacarpal bone (Fig. 1).



**Fig. 1 a:** The carpal boss overlies the index/middle finger carpometacarpal joints (arrow).

There was a visible and palpable “snapping” of the extensor tendon as the third finger was extended.



**Fig. 1 b:** With wrist flexion, the prominence of the carpal boss becomes strikingly evident (arrow).

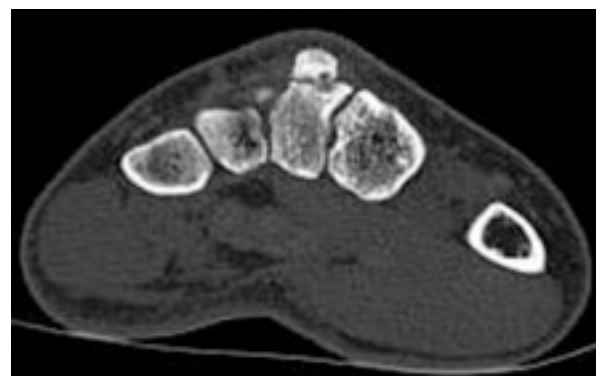
Plain radiographs (Fig. 2) and CT scan (Fig. 3) of the right hand were done.



**Fig. 2:** “The carpal boss view”



**Fig. 3a:** CT scan sagittal view



**Fig. 3 b:** CT scan axial view

• **What is your diagnosis ???**

### • Answer: *Os styloideum*

In fact, the X-Ray of the right hand showed a bony protuberance fused to apposing surface of the third metacarpal and capitates (arrow) and the CT scan demonstrated the presence of a bony fragment close to the capitates.

The carpal boss was then exposed through a 3 cm dorsal incision centred at the base of the middle finger metacarpal (Fig. 4 a).



Fig. 4 a: Surgical exposition of the "os styloideum"

The extensor tendon was snapping over the carpal bone with extension of the third finger (Fig. 4 b).

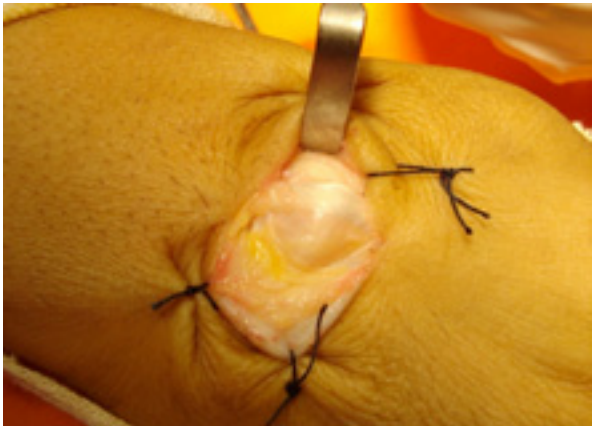


Fig. 4 b: Intraoperative view showing the subluxation of the extensor tendon over the "os styloideum"

Osteotomes and a rongeur are used to expose the accessory ossicle which is removed along with the surrounding sclerotic bone. Excavation is continued to the level of normal joint (Fig. 4 c).



Fig. 4 c: Intraoperative view showing the completely resection of the "os styloideum"

At 12 month follow-up, the patient had recovered well, and motion of wrist was painless and complete. The radiographs taken at this time showed no evidence of recurrence (Fig. 5).



Fig. 5: At 12 months follow-up, X-ray showing no recurrence

## II. DISCUSSION

Os styloideum or carpal boss is described as a bony protuberance localized on the dorsum of the hand at the third and/or second carpometacarpal (CMC) joint [1, 2]. The condition may represent a degenerative disease (osteophyte formation), or the presence of an ossicle or both [3].

The ossicle or "os styloideum" is the result of the persistence of accessory centres of ossification which should have disappeared during foetal development.

The incidence of "os styloideum" is unknown, and it is occasionally isolated (2%) but more commonly fused to the second or third metacarpal (94%), to the capitate (3.5%) or to the trapezoid (0.5%) [3].

Most of the symptoms arise from a degenerative osteoarthritic process, a ganglion or an inflamed bursa that may develop over the bony prominence, or an extensor tendon slipping over it. Pain at the quadrangular trapezoid-capitate-metacarpal joint was elicited by what we call the "metacarpal stress test". This is performed by distracting the index and middle fingers with metacarpal joint in flexion.

Imaging studies may be decisive in making the correct diagnosis. Neither the trapezio-metacarpal and capito-metacarpal joints, nor the overlying carpal boss can be visualized on a standard lateral X-ray examination of the hand and wrist.

Optimal radiologic visualisation can be obtained by a modified lateral view of the wrist with the hand flexed and supinated 30 to 40° with ulnar deviation of 20 to 30° defines "the carpal boss view" [2, 4]. In this view, the prominence of the carpal boss is perpendicular to X-ray beam and "os styloideum" appears as a dorsal overgrowth of the bones involved.

Although the "carpal boss view" on X-ray can be an adequate diagnostic tool, more specialized imaging studies,

such as CT scan or MRI, have been used to document the presence of "os styloideum".

Most authors agree that symptomatic patients eventually need surgical treatment for pain relief [2, 4-12]. The technique of choice or wide-wedge excision was described by CUONO and WATSON [4]. Effort should be made to explore to the level of normal joint cartilage and normal cancellous bone in order to remove all areas of sclerosis and to reduce the risk of persisting symptoms.

Surgical treatment was indicated for patients who remain symptomatic after a long history of pain and associated limited function, despite conservative management.

CMC arthrodesis may be indicated for the treatment of persistent pain or joint instability following boss excision.

### III. REFERENCES

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