Rare localizations of sesamoid bones of hand

Revealed by an avascular necrosis of the sesamoid

of the third metacarpo phalangeal joint

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Abstract:

Sesamoid bones of thumb and index are well known and are described in literature. But sesamoid bones of the middle finger and the ring finger are rare and their pathology is not reported. We present the case of a 60 year old women who had sesamoid bones on each metacarpo phalangeal joint of her right hand. They are revealed by an avascular necrosis of the middle finger sesamoid bone presenting as a sub acute flexor tenosynovitis. The diagnosis was made with TDM and RMI and non operative treatment was successful.

Keywords : avascular necrosis; sesamoid bone; middle finger; hand

Introduction:

We report a rare case of avascular necrosis of sesamoid bone of the middle finger. This pathology is not described in literature. We will discuss about diagnosis and treatment for this case.

Case report:

A sixty year old Vietnamese woman complained of tenderness over the palmar side of the metacarpo phalangeal joint of right middle finger. There was no history of trauma. When seen in the emergency department, the patient was afebrile but presented three of four Kanavel's cardinal signs of acute flexor tenosynovitis: uniform swelling, percussion tenderness along the course of the tendon sheath , flexed position of the finger failed (Fig. 1). No open injury or recent scar was found on the finger, there was no sign of regional or general infection. The white blood cell count was 7500.

Anteroposterior and oblique radiographs of hand revealed a sclerotic aspect of the sesamoid bone of the middle finger (Fig. 2) but they also showed normal sesamoid bones on each metacarpo phalangeal joint of the hand. A computed tomography study comparing each sesamoid bone of the hand concluded with an necrosis aspect of the sesamoid of the middle finger (Fig. 3,4). A non operative treatment with anti inflammatory drugs and immobilization with splint was decided. A MRI of the right hand confirmed the diagnosis of avascular necrosis of the sesamoid of the third metacarpo phalangeal joint (Fig. 5). Pain and swelling decreased in two weeks. A year later ranch of motion is recovered completely, the middle finger was pain free, also grip and strength returned to the anterior level and radiographs showed fragmentation of sclerotic sesamoid bone (Fig. 6).

Discussion:

The sesamoid bones of metacarpo phalangeal joint of the thumb and metatarso phalangeal joints of the hallux are always present in the dissections and radiographs (Goldberg I, Nathan H 1987) and their pathologies are well known and reported in literature (Bruser P 1994; Keating S, Fisher D, Keating D 1987; Mohler LR, Trumble TE 2001; Shaw M, Lyburn ID, Torreggiani WC et all. 2003; Wood VE. 1984). Many cases are published about arthritis, sesamoid periostitis (Reiter's syndrome), fracturesmechanichal dysfunction. Except these two localizations, index sesamoid bone and its pathology is now published. We can find case-reports about many topics : atraumatic avascular necrosis, pathological fragmentation, fracture, sesamoiditis (Baek GH, Chung MS, Kwon BC, Ahn BW 2002; Lang CJ, Lourie GM 1999; Moreel P,

Nanhekhan LV, Le Viet D 2005; Takei TR, Terrono AL, Hayek J 1996; Van Asch Y, Vreugde M, Brabants K 2005).

In contrast to these, sesamoid bones of the middle and the ring finger are rare. They are observed in only 3% for the third metacarpo phalangeal joint and in 1% for the fourth metacarpo phalangeal joint (Goldberg I, Nathan H 1987). A review of literature don't retrieve any case report about their pathology.

We present a case of a right hand which has sesamoid bones on each metacarpo phalangeal joint. Wood showed a case in his article in 1984. Our case is revealed by an avascular necrosis of sesamoid bone of the middle finger. But its clinical presentation lent to confusion. Indeed swelling, tenderness, failed flexion evoke rather an infection as we can retrieve in literature about index sesamoid bone (Lang CJ, Lourie GM 1999). But the diagnosis of acute flexor tenosynovitis is turned down because the patient is afebrile and the C-reactive protein is normal.

The diagnosis of fracture of sesamoid bone can be also discussed with radiographs and TDM. But there is no trauma history in this case and the MRI images conclude with sesamoid bone necrosis.

The treatment for this case can be also discussed. The clinical presentation of an acute flexor tenosynovitis should lead to a operative management (Lang CJ, Lourie GM 1999). According to certain authors fractures, necrosis of sesamoid bones must lead to a surgical treatment with

sesamoidectomy (Lang CJ, Lourie GM 1999; Moreel P, Nanhekhan LV, Le Viet D 2005; Van Asch Y, Vreugde M, Brabants K 2005).

But the aim of treatment is to relieve pain and recover complete function of the metacarpo phalangeal joint. Also others authors advise to a non operative treatment with

splint and analgesic or anti inflammatory drugs (Baek GH, Chung MS, Kwon BC, Ahn BW 2002; Shaw M, Lyburn ID, Torreggiani WC et all. 2003; Wood VE1984).

In this aspect, the non operative management of our case is successful and comparable with literature even if localizations are different. An no further treatment is necessary.

Conclusion:

Avascular necrosis of the middle sesamoid bone is rare. The diagnosis may be missed if radiographs are not acquired or are not correctly studied. It seems that a non operative treatment with immobilization and analgesic treatment is enough.

Fig. 1 Uniform swelling of the middle finger

Fig. 2 Sclerotic aspect of the sesamoid bone of the middle finger

Fig. 3 sesamoid bones on each metacarpo phalangeal joint

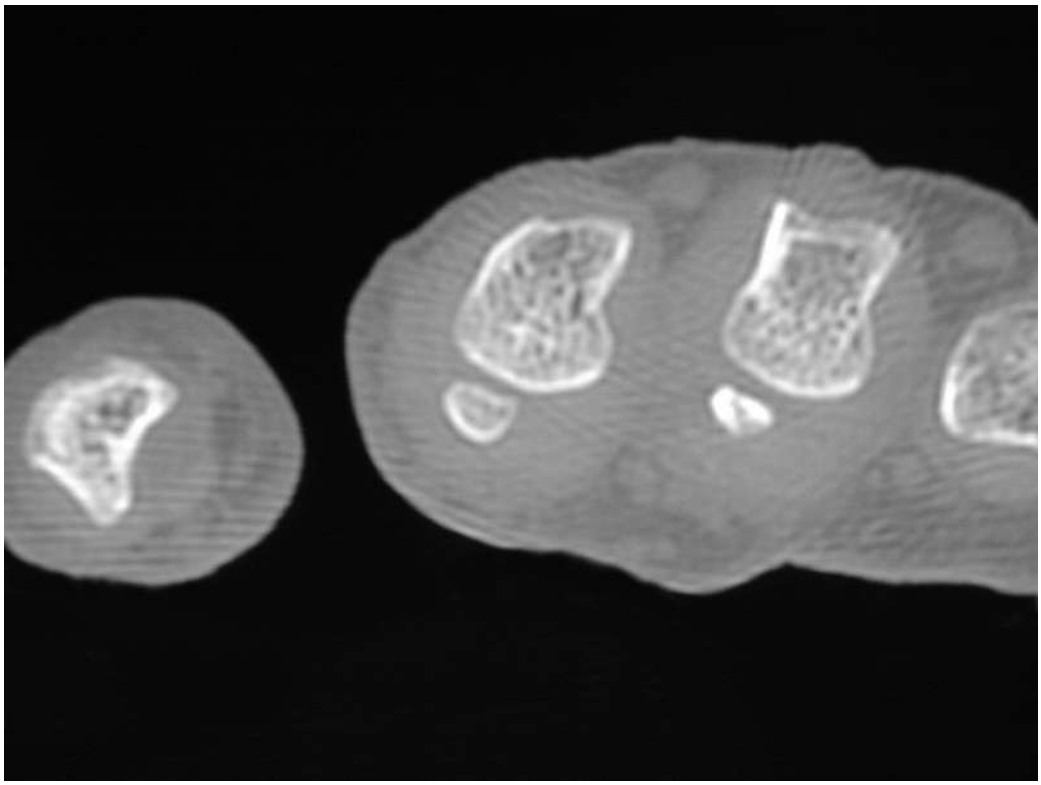

Fig. 4 necrosis aspect of the sesamoid of the middle finger

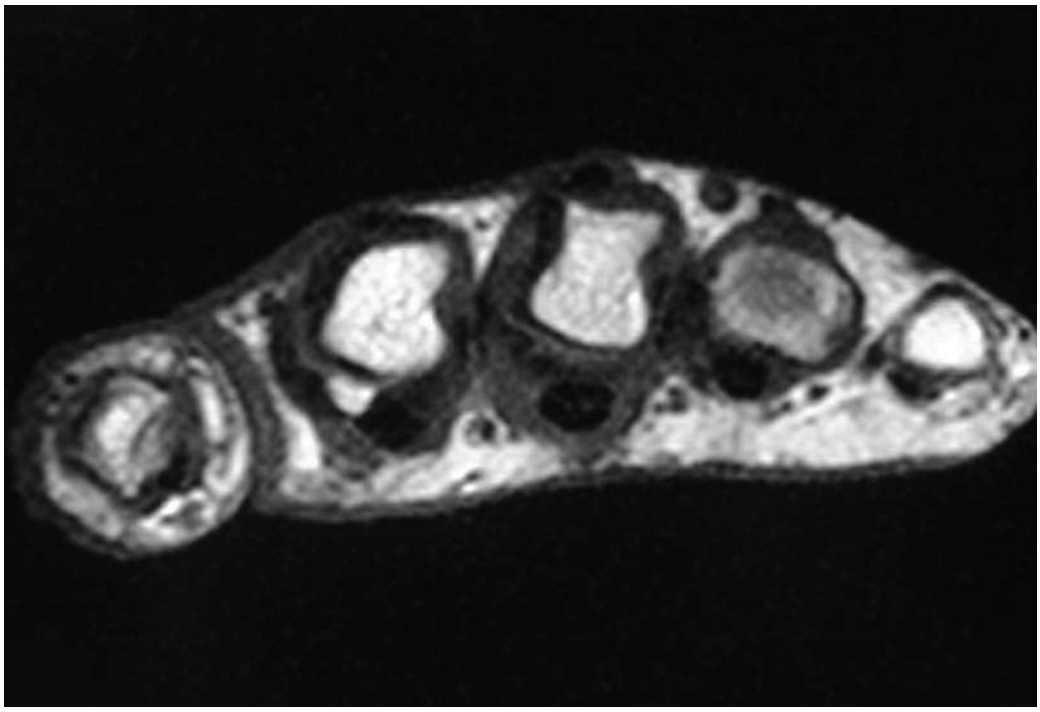

Fig. 5 Normal aspect of sesamoid bone of the index, necrosis aspect of the sesamoid of the middle finger on MRI

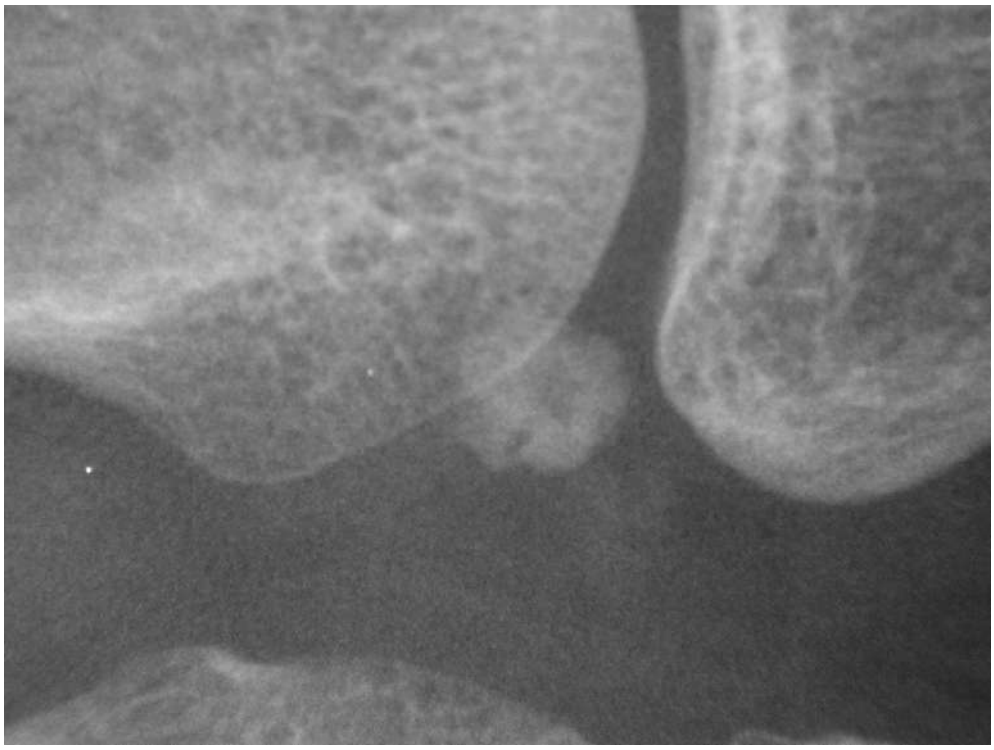

Fig. 6 Fragmentation of sclerotic sesamoid bone

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