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Case report

Solitary osteochondroma of the capitate, in a child

Nikolaos A. Laliotis*, Chrysanthos K. Crysanthou, Panagiotis A. Konstandinidis

Interbalkan Medical Center, Thessaloniki, Greece

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ABSTRACT

Osteochondromas, are the most common tumors of the long bones in children. Osteochondromas are extremely rare in the carpal bones. They are diagnosed in adult life, in almost all cases in the literature. We report a 7 year old boy, who presented with a hard mass on the dorsum of his hand, with decreased wrist movements. Radiological examination showed a calcified tumor of the second row of the carpal bones, with spherical shape and covered with cartilage. He was surgically treated with removal of a cartilaginous mass that was arising from the capitate. Pathology confirmed the diagnosis of an osteochondroma.

1. Introduction

Osteochondromas, although being the most common tumors of the musculosceletal system, are extremely rare in carpal bones. Only sporadic cases have been reported for solitary osteochondromas arising from carpal bones. Lesions involving the scaphoid, the capitate, the lunate, the hamate and the trapezoid have been reported.[1–9] Although osteochondromas are benign tumors of children, in almost all cases in the literature, osteochondromas of the carpal bones are discovered in adult age. There is only one, recently published, case report of an exostosis of the hamate, in a child.[10]

We report a 7 year old boy, with a solitary osteochondroma of the capitate. He was surgically treated, after a thorough clinical and radiological investigation. We want to draw attention for an extremely rare condition, a benign tumor in the hand of a child.

2. Case report

A 7 year old boy presented with a hard swelling on the dorsum of his left hand. The patient had noticed a difference in the range of movements of his left wrist compared to the right one, while training in swimming. The restriction of wrist movements had occurred during the last year, but the patient and his parents noticed the difference in the shape of his hand just a few weeks before examination. The boy had never complained of pain in the wrist.

On clinical examination, a distinct prominence, on the dorsal aspect of the left wrist, was palpable. The mass was hard and with a well contoured shape. The overlying skin had normal appearance with no signs of thinning or irritation. The palpable mass appeared immobile, both with the hand at resting position and on wrist dorsal and palmar movements. There was marked limitation of dorsal extension of the left wrist. Movement in radial and ulnar direction was normal, always compared with the ipsilateral hand.

No other prominence was found in his skeleton, and the family history was negative for osteochondromas or other skeletal abnormalities.

Plain radiographs revealed a clear calcified round mass on the dorsal aspect of the second row of the carpal bones Fig. 1A, B.

In order to clarify the origin and precise position of the mass, a CT scan was ordered. The scan showed a well circumscribed mass, arising from the dorsal aspect of the capitate, formed from calcified tissue Fig. 2A, B. No periosteal reaction was observed. MRI was also performed, which showed an area of oedema both to capitate and hamate. After gadolinium injection, no increased uptake was observed around or within the tumor Fig. 3A, B.

The Tc-99 bone scan also revealed positive uptake at the affected wrist.

After clinical and imaging investigation, differential diagnosis included benign tumors like osteochondroma, parosteal chondroma, or atypical Trevor disease.

The patient was surgically treated. A longitudinal dorsal incision was performed over the wrist, through the fourth extensor tendon compartment, with preservation of the extensor

* Corresponding author.
E-mail address: info@interbalkan-hosp.gr (N.A. Laliotis).

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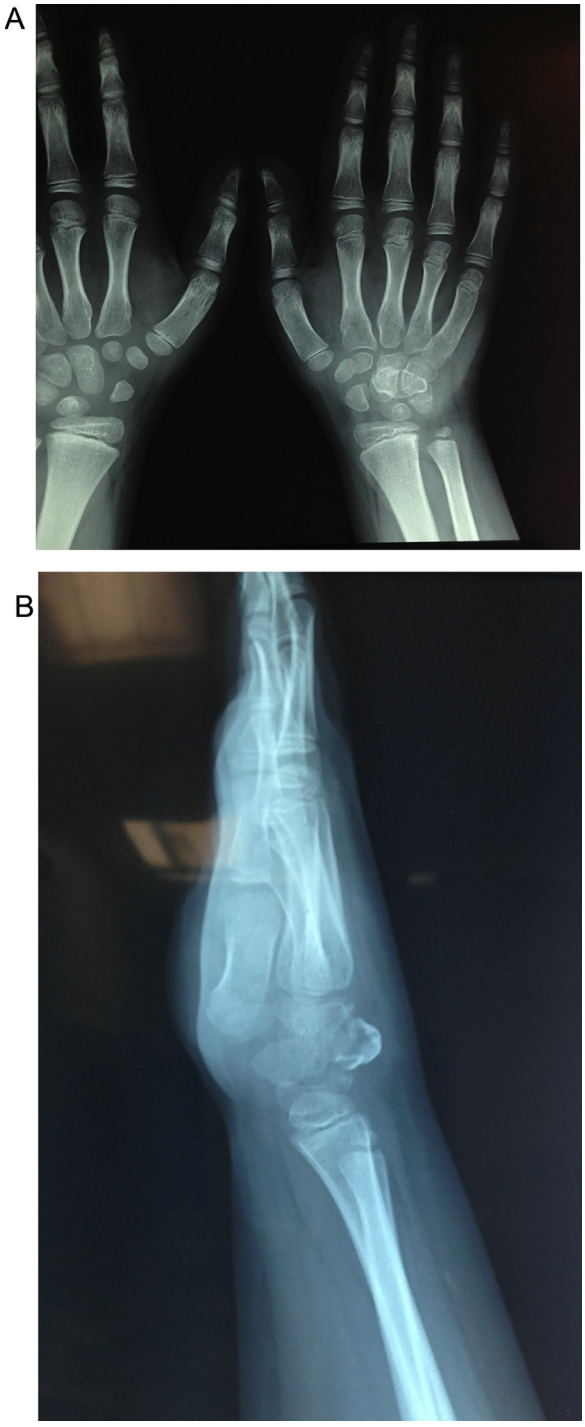

Fig. 1. A AND B: Initial radiograph AP and lateral, with the round calcified tumor of the 2nd row of carpal bones.

retinaculum and the dorsal wrist capsule. During surgery a solitary chondral lesion was identified arising from the capitate, with a clear basis on the dorsal area of the capitate. Its size was 2 cm by 2 cm and all carpal bones and ligaments appeared intact Fig. 4.

The lesion was excised from its base, and macroscopically appeared as of chondral substance. The specimen consisted of cortical and medullary bone, with overlying hyaline cartilage. Pathology confirmed the diagnosis of osteochondroma.

The boy had an uneventful recovery, with immediate improvement in the arc of wrist motion. One year after operation, there is

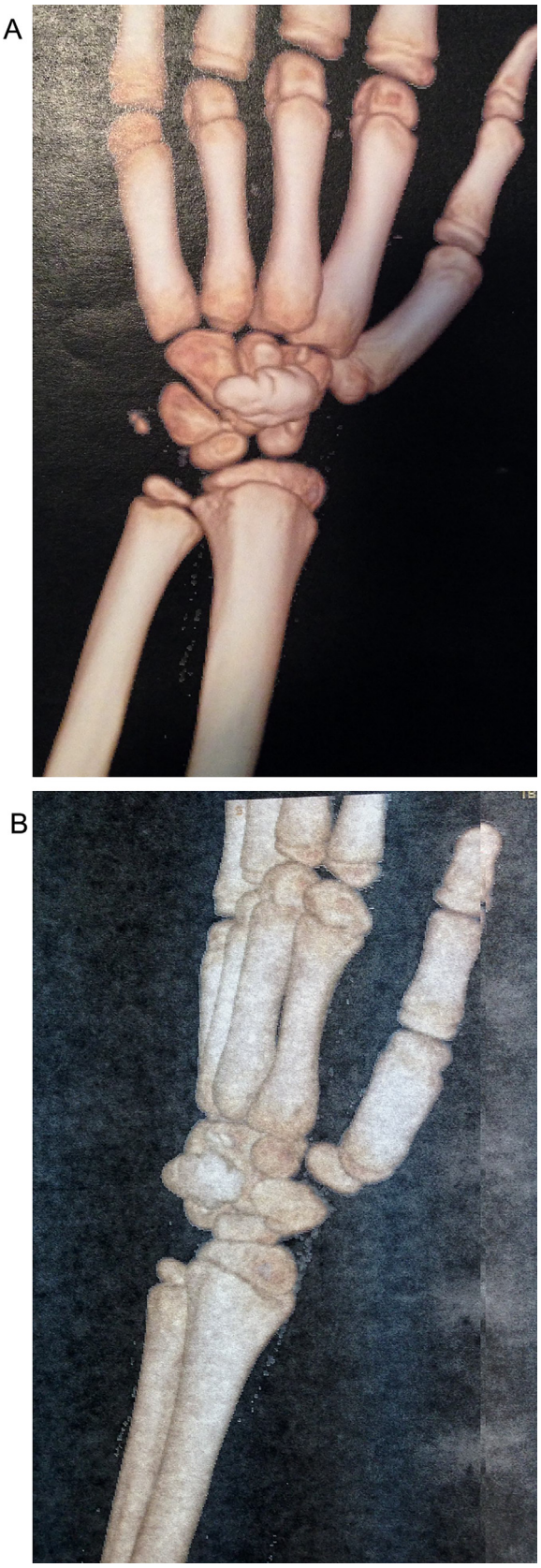

Fig. 2. A and B: CT scan with 3D reconstruction.

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