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Case Report

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A rare case of solitary exostosis of capitate

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ABSTRACT

Exostosis arising from carpal bones is rare and only a few cases have been reported till date. A 29 years old female came to the outpatient department with a localized swelling present on the dorsum of her right wrist since the past three years. On examining the patient clinically, a well-defined protuberance was observed over the dorsal aspect of the right wrist. CT report showed bony outgrowth over the dorsum of the capitate extending beyond the carpometacarpal joint. In surgical intervention, the mass was removed from the base, which grossly had an appearance of chondral origin. The biopsy report confirmed the diagnosis of exostosis (osteochondroma). Hence, excising the exostosis surgically led to achievement of adequate motion of the patient's wrist along with the additional cosmetic correction benefit.

Keywords: Exostosis, Capitate, Carpal bones, Enchondroma, Excision

INTRODUCTION

Osteochondroma are considered to be one of the most common bone tumors. They generally involve the metaphyseal region of long bones. Exostosis arising from carpal bones is a rare occurrence with very few cases being reported till now.[1-10] Among these, only four have been specific to capitate.[6,9,11,12] Despite being considered a benign tumor occurring in children, in most of the cases, osteochondromas have been discovered in adulthood.[13]

This case report is that of a 29 year old female having diagnosed with solitary osteochondroma of capitate after adequate clinical and radiological investigations.

CASE REPORT

A 29 years old female came to the outpatient department with a localized swelling present on the dorsum of her right wrist since past 3 years. She started noticing a restriction while moving her right wrist in comparison to the left side along with pain in the right wrist since the past 6 months. There was no history of trauma. There were no such complaints in any of family members/any syndromic association.

On examining the patient clinically, a well-defined protuberance was observed over the dorsal aspect of the right wrist (Figures 1 and 2). There were no noticeable skin changes overlying the mass. On palpation, protuberance was firm with a smooth contour (2×3 cm) and it was immobile. There was no superficial or deep tenderness. Dorsiflexion of the right wrist was restricted and painful terminally. Palmar flexion of the right wrist was also terminally painful. Radial and ulnar deviation was within normal range in comparison to the contralateral side.

Plain radiographs of right wrist showed a bony outgrowth over the dorsum of the capitate bone. NCCT of the right wrist was done which confirmed a bony outgrowth along the dorsal surface of the capitate extending beyond the carpometacarpal joint (Figures 3-5). Following this, a Tc-99 bone scan was done which showed a positive uptake in the involved region of the right wrist.

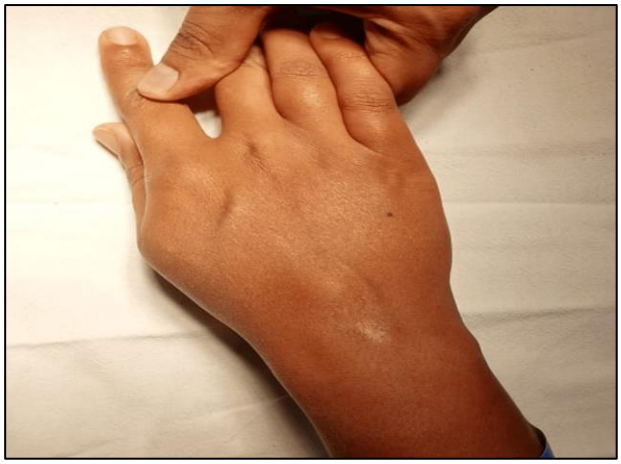

Figure 1: Localized swelling over dorsum of right wrist.

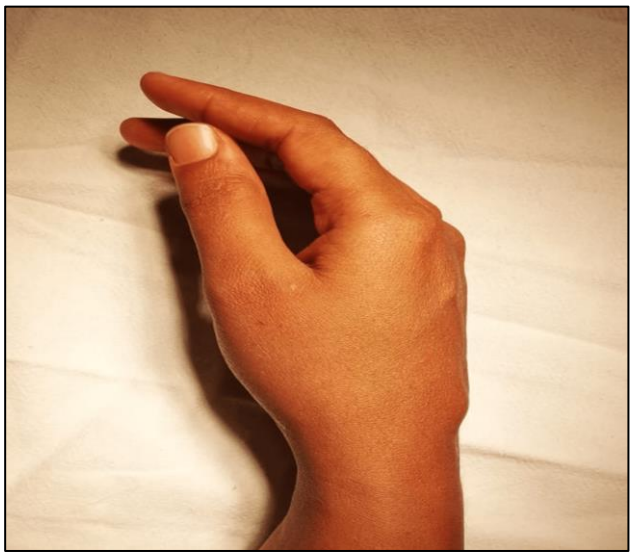

Figure 2: Localised swelling over dorsum of right wrist- lateral view.

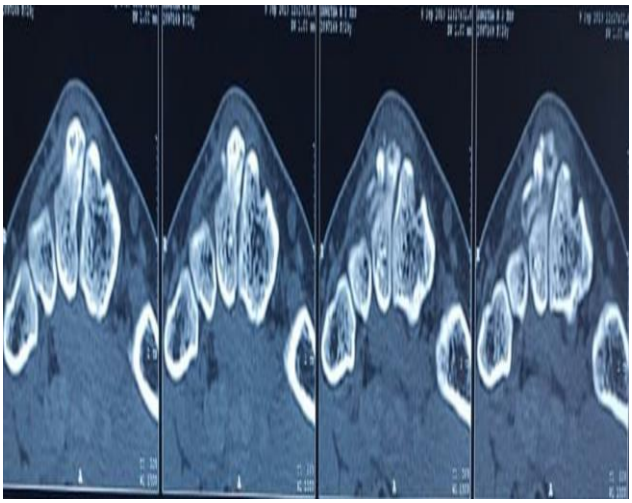

Figure 3: Bony protuberance over the right capitate- CT wrist, axial section.

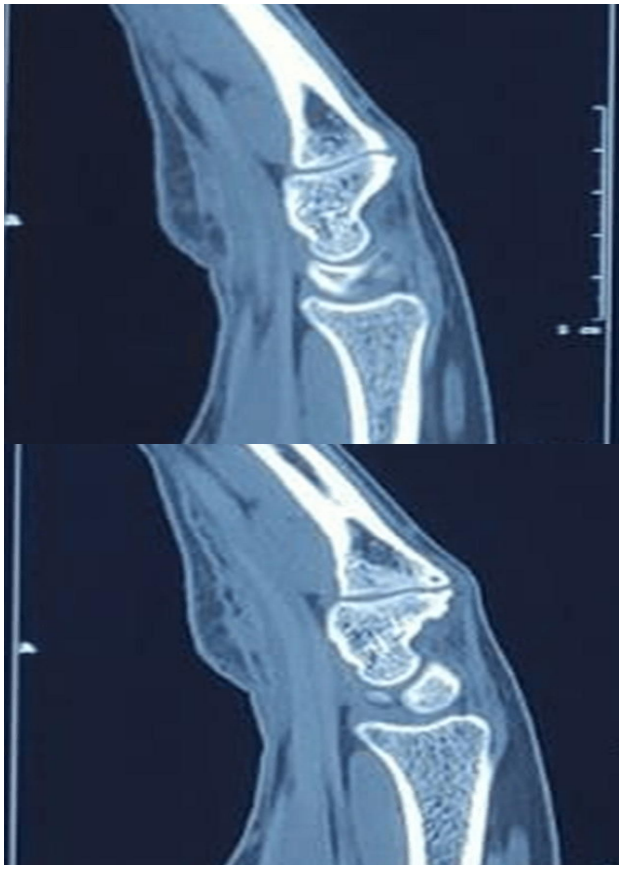

Figure 4: Bony outgrowth over capitate visible in CT sagittal sections.

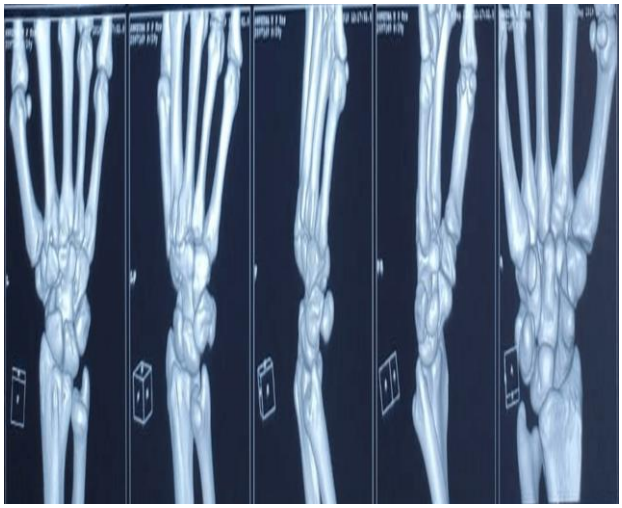

Figure 5: CT 3d reconstruction of wrist showing bony outgrowth over the capitate.

Surgical intervention was done for the patient in view of worsening symptom and improvement of the cosmetic appearance as per patient's request. A vertical incision was placed over the dorsum of the wrist in the concerned area, traversing the 4th extensor compartment, preserving the extensor retinaculum. A solitary chondral lesion measuring 2×3 cm was present in the dorsal area of the capitate. Rest of the carpal bones and ligaments were

uninvolved. Mass was removed from base, which grossly had appearance of chondral origin (Figures 6 and 7). Biopsy report conclusive of exostosis (osteochondroma) (Figure 8). Patient underwent an uneventful recovery following surgery and regained painless range of motion as examined at 6 months follow up.

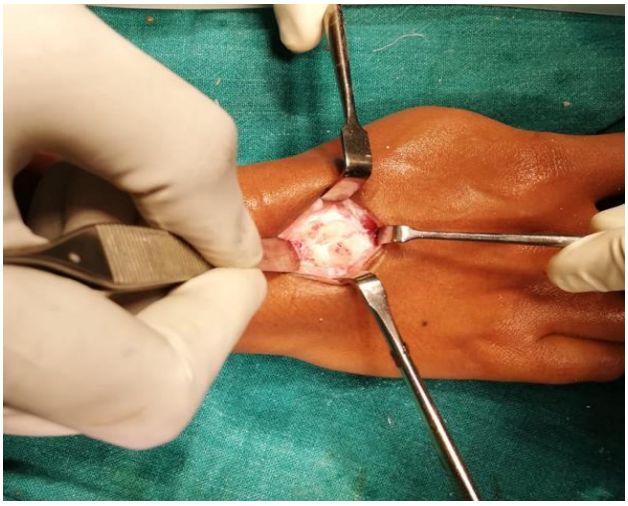

Figure 6: Exposure of the exostosis site.

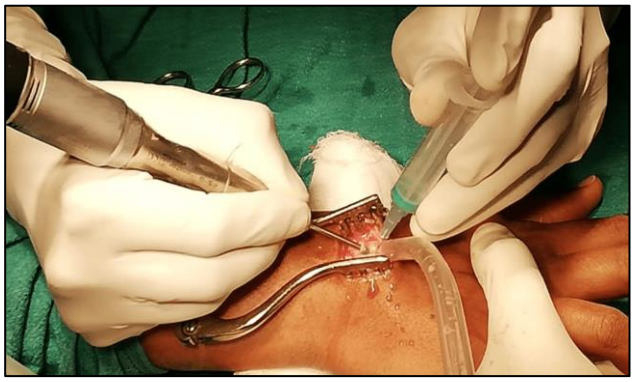

Figure 7: Excision of capitate exostosis using high speed burr.

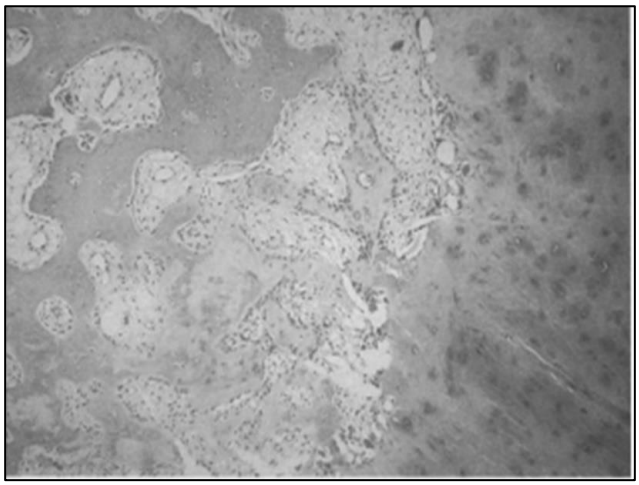

Figure 8: Biopsy confirmation of osteochondroma.

DISCUSSION

Osteochondroma, also called as exostosis, can be defined as a cartilage encased bony protuberance involving the outer region of a bone containing a marrow cavity in most cases. Most common age group involved is between 10 to 30 years. However, capitate exostosis has also been reported in as young as a 7 year old patient.[13]

It generally presents as a painless solid mass around the metaphyseal area of long bones. Only a few cases of osteochondromas arising from the various carpal bones have been reported in the literature till date.[1-9]

The most common presenting symptoms in such patients have been a mass over wrist along with decreased range of motion. Majority of the patients do not present with pain as their main symptom. Few patients have presented with complications, associated with osteochondromas of the carpal bone, such as carpal tunnel syndrome and superficial radial nerve compression.[14,15] Other complications of carpal osteochondromas which have been reported are rupture of extensor tendons due to capitate osteochondroma, lunate osteochondroma, rupture of flexor pollicis longus due to scaphoid exostosis and scapholunate dissociations due to scaphoid exostosis.[12,16-18]

Osteochondromas can initially be treated by observation if the patient is asymptomatic. However, for symptomatic patients the gold standard of treatment has been excision of the lesion. In most cases, marginal excision of the tumor is sufficient. Recurrence may occur in cases of solitary osteochondroma of long bones (20). Recurrence after marginal excision of carpal exostosis has not been reported. There occurs a dramatic improvement in the patient's symptomatic condition following the excision of the tumor.

CONCLUSION

Solitary exostosis (osteochondroma) involving the carpal bones are rare and generally seen in patients within the first 3 decades of life. This rare case report is that of a 29 year old female with a painless swelling on the dorsum of the wrist, which was diagnosed to be solitary exostosis of the capitate. Excising the exostosis surgically led to achievement of adequate motion of the patient's wrist along with the additional cosmetic correction benefit.

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