

SYNOSTOTIC OSTEOCHONDROMA OF 4th AND 5th METACARPAL

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SUMMARY

The authors report a very rare case of a child who had an osteochondroma of left hand producing synostosis between 4th and 5th metacarpal and having a single cartilaginous cap. The tumour was excised and gap reconstruction was done by utilizing fibular strut grafts.

Key Words: *Osteochondroma, hand, metacarpal, synostosis, reconstruction.*

INTRODUCTION

Osteochondromas in the hand are rarely seen. Although kissing osteochondromas leading to synostosis have been reported in lower limbs, this is the first report of isolated synostosis osteochondroma in the hand involving the fourth and fifth metacarpals. Although benign, symptomatic exostoses need surgical excision.

CASE REPORT

A 10 years old male child presented with an isolated bony swelling of the dorsum of left (dominant) hand in the region of proximal part of 4th and 5th metacarpal (Fig. 1). There was slight restriction of flexion of the involved metacarpophalangeal joints with moderate tenderness locally. The swelling was cosmetically unacceptable to the patient. Roentgenograms of the hand showed a bony swelling in continuity of bases of both the 4th and the 5th metacarpals simultaneously and forming a bony bridge between the two metacarpals, thus producing synostosis (Fig. 2). Skeletal survey showed no exostosis elsewhere; so it was a single exostosis. The cosmetic deformation, tenderness and limitation of flexion that caused inability to clinch a fist properly (because of stretch on extensor tendons), were the indications for surgery. On surgical exploration, a



Fig. 1. Photograph showing the size and site of synostotic exostosis.

bursa was found beneath the skin; extensor tendons were also stretched over the growth. The tumour was excised en-block extraperiosteally; the defect was reconstituted with fibular strut grafts and stabilized with K-wires (Fig. 3). The excised specimen showed continuity of the stalk of tumour from both metacarpals and a single cartilaginous cap, thus confirming the synostosis. Histopathologically, it was proven to be an osteochondroma. The K-wires were removed after 12 weeks and the child was advised to do active physiotherapy.

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Fig. 2. Pre-operative radiograph. Note involvement of both 4th and 5th metacarpal bases. The clinical size is more than radiological as cartilage is radiolucent.

DISCUSSION

Osteochondromas are osteocartilagenous bony tumours with a bony stalk and a cartilaginous cap. They are not real neoplasm but are developmental aberrations that arise in the region of growth plate and metaphyseal junction. Though the commonest benign bone tumour, its common sites of involvements are lower end of femur, upper tibia and upper end of humerus, in that order. Osteochondromas are rare in the hand. Congenital synostoses of fourth and fifth metacarpals have been reported¹. Although kissing osteochondromata leading to synostosis in lower limbs and single osteochondromas involving hand have also been reported, these patients are usually those having multiple hereditary exostosis^{2,3}. Even proximal tibiofibular synostosis without multiple hereditary exostosis is reported to be extremely rare⁴. To the best of our knowledge, this is the first reported case of non-hereditary, isolated, synostosis osteochondroma of metacarpals.

This extremely rare tumour was confirmed on surgery to have a single cartilaginous cap.



Fig. 3. Post-operative radiograph.

Histopathology confirmed the presence of benign bony and cartilaginous elements. The synostosis osteochondroma was causing repetitive bursitis, difficulty in writing (it was the dominant hand), was cosmetically ugly and slowly growing. This formed the indication of surgery in this patient and fibular strut grafts were utilized to replace the defect in fourth and the fifth metacarpals. This kind of radical surgery is rarely required for isolated benign osteochondromas. The growth potential and risk of recurrence required the authors to do so. The final cosmetic and functional result of the hand at 2 years follow-up was quite acceptable with no evidence of recurrence.

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