Primary solitary osteochondroma of middle phalanx of third finger with digital nerve compression: A rare case report

Amrinder singh[1], Nitin bansal[2], Swapnil sharma[3], Gaurav Jain[4,*]

[1]Assistant Professor, [2]Associate Professor and Head of Unit, [3,4]Senior Resident, Dept. of Orthopaedic department, Adesh Institute of Medical Sciences and Research, Bathinda, Punjab

***Corresponding author:**
Email: dr.gaurav.jain09@gmail.com

Abstract

Osteochondromas are the most commonly found benign bone tumours, contributes to 45% of benign bone tumours. They commonly involves metaphyseal region of long bones and are covered with a cartilaginous cap. Solitary primary osteochondromas are very rarely found in hand, less than 5% of all osteochondromas, more commonly found in phalanges than metacarpals. Among phalanges, Proximal and distal phalanges are more commonly involved. Involvement of Middle phalanx in solitary osteochondroma is very rare. Osteochondroma commonly develops in growing bone and increases in size till skeletal maturity. They usually found in 1st and 2nd decades of life. They can be of pedunculated (with stalk) or sessile (without stalk). They typically remain asymptomatic. Here we are reporting a case of 12-year-old female with a primary solitary osteochondroma of the left middle phalanx of middle finger.

Keywords: Primary, solitary, Osteochondroma, Exostosis, Middle phalanx.

Case Report

A 12 year old female presented to us with the complaint of swelling over the anterolateral aspect of the middle phalanx of left middle finger for last 14 months. Initially it was painless small swelling which gradually increased over a period of time. Patient experienced pain and numbness over the tip of finger for last 2 months.

On clinical examination there was a hard, tender, non-mobile swelling with smooth margins of size approximately 2 cm X 1cm over the antero-lateral aspect of middle phalanx of left middle finger. There was a decrease in crude touch as well as two point discrimination along with altered temperature perception over tip of affected finger. X-ray showed a bony mass over antero-lateral aspect of middle phalanx which appeared to be free from underlying bone. Higher Investigations could not be done due to financial constrains. Other lab reports were normal.

Under regional anaesthesia (wrist block) direct-lateral approach was taken with linear skin incision over maximum tenderness of swelling. The mass was exposed and it was found to be covered with cartilaginous cap and was attached to proximal metaphyseo-epiphyseal junction with a cartilaginous stalk and was in close proximity to the digital neurovascular bundle. The gross appearance was more towards osteochondroma. Marginal resection of tumour was done and sent for histopathological examination. I.V antibiotics were given one hour prior to surgery and continued postoperatively for a single day followed by 5 days of oral antibiotics, along with analgesics.

Histopathology report came to be Osteochondroma. Patient's recovery was uneventful. Patient immediately reported relief from the symptoms. A follow up of 1 year showed no sign of recurrence.

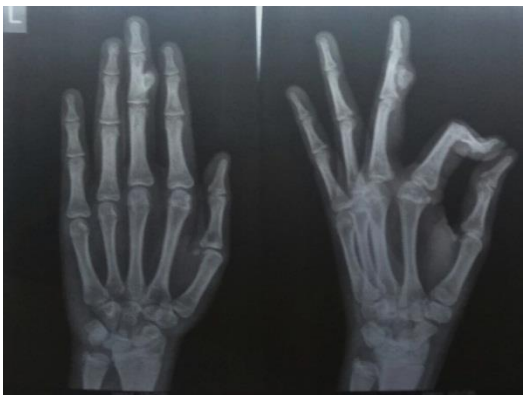

Fig. 1: Pre-op X-ray

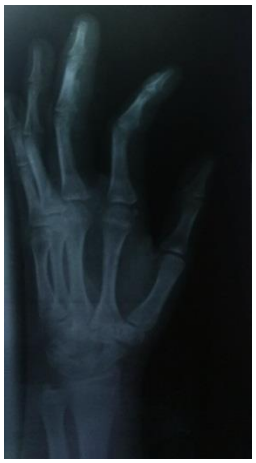

Fig. 2: Post-op 1 year X-ray

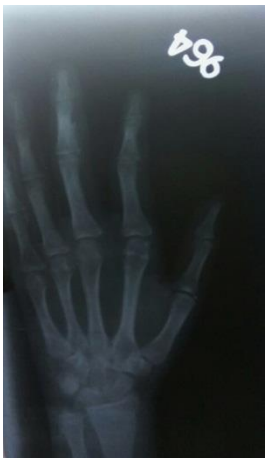

Fig. 3: Post-op 1 year X-ray

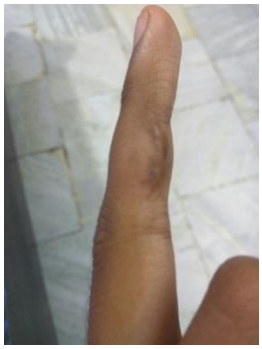

Fig. 4: Post-Op 1 year

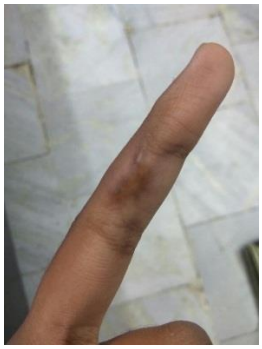

Fig. 5: Post-op 1 year

Discussion

Osteochondromas are the commonest benign bone tumours consists of cartilaginous cap contributes to 45% of benign bone tumours. The osteochondromas commonly occurs at metaphyseal region of long bones, most common at lower end of femur, proximal end of tibia and proximal end of humerus.[1-4] Solitary primary osteochondromas are very rarely found in hand, less than 5% of all osteochondromas. More commonly found in phalanges than metacarpals.[5,6] Among phalanges, Proximal and distal phalanges are more commonly involved.[7] Involvement of Middle phalanx in solitary osteochondroma is very rare. Hand involvement are more commonly found in hereditary multiple osteochondromas.[6] A typical osteochondroma lesion grows away from the joint i.e. toward the region of diaphysis.[1–4] Osteochondromas commonly develops in growing bones and thus increases in size till skeletal maturity. After skeletal maturity, it usually shows no growth. They usually seen in 1st and 2nd decades of life with male predominance.[1,2] They can be classified on the basis of attachment to the parent bone as sessile (without stalk) and pedunculated (with stalk). Around 85 % of osteochondromas present as nonhereditary lesions & around 15% of osteochondromas present as hereditary multiple osteochondromas (HMOs), this disorder has an autosomal dominant trait.[8,9] They typically remain asymptomatic till discovered incidentally.[2,4] occasionally they become symptomatic and may land up in complications such as bone deformity, fracture, restriction of joint movements,[9,10] vascular and neurological compromise when it comes close to vital structures. If growth of tumour occurs even after skeletal maturity it can be malignant transformed variant which is very rarely found less than 1% for solitary tumors and 4% for hereditary multiple exostosis.[10] The treatment of choice for osteochondroma is surgical unless the skeleton is still immature. Primary solitary osteochondromas occurrence in the small bones of Hands and feet are rare, usually secondary osteochondromas are found in carpals, metacarpals, metatarsals and phalanges.[6] In our case, presentation of the primary solitary osteochondroma was unusual and the site of tumour along with x ray presentation was not suggestive of osteochondroma as first impression. The intra-operative picture and histopathology report confirmed its identity.

References

1. Mirra JM. Benign cartilaginous exostoses: osteochondroma and osteochondromatosis. In: Mirra JM, eds. Bone tumors: clinical, radiologic, and pathologic correlations. Vol 2. Philadelphia, Pa: Lea & Febiger, 1989;1626-1659.
2. Resnick D, Kyriakos M, Greenway GD. Osteochondroma. In: Resnick D, eds. Diagnosis of bone and joint disorders. 3rd ed. Vol 5. Philadelphia, Pa: Saunders, 1995;3725-3746.
3. Milgram JW. The origins of osteochondromas and enchondromas: a histopathologic study. ClinOrthop 1983;174:264-284.
4. Keith A. Studies in the anatomical changes which accompany certain growth disorders of the human body. J Anat 1920;54:101.
5. Murphy MD, Choi JJ, Kransdrof MJ, et al. Imaging of osteochondroma: variants and complications with radiologic-pahologic correlation. Radographic 2000;20:1407-1434.
6. Wood VE,Moliter C, Mudge MK. Hand involvement in multiple hereditary exostosis. Hand Clin 1990;6:685-692.
7. Shinji Yoshioka, Yoshitaka, Shinjiro, Hiroaki &NatsuoYasui An Osteochondroma limiting flexion of the proximal interphalangeal joint in hereditary multiple exostosis: a Case Report Hand (2010)5:299-302.
8. Carroll KL, Yandow SM, Ward K, Carey JC. Clinical correlation to genetic variations of hereditary multiple exostosis. J PediatrOrthop 1999;19:785-791.
9. Prakash U, Court-Brown CM. Fracture through an osteochondroma. Injury 1996;27:357-358.
10. Willms R, Hartwig C-H, Böhm P, et al. Malignant transformation of a multiple cartilaginous exostosis e a case report. IntOrthopaed 1997;21:133e6.