Bizarre parosteal osteochondromatous proliferation (Nora’s lesion) of middle phalanx in an adult female

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Abstract
Bizarre parosteal osteochondromatous proliferation (BPOP; also called Nora’s lesion) is a benign surface osteocartilaginous lesion. This condition seen in hands followed by the feet, long bones and the skull. The importance of the lesion lies in its clinical and pathological differentiation from malignant lesions mainly in osteosarcoma in children and chondrosarcoma in adults. The lesion is 20–50% recurrence rate. We present a case report of BPOP of the middle phalanx of the right middle finger. The importance of the case lies the involvement of phalanges is not rare, but if present it mainly in the proximal phalanges. In my case present in middle phalanx of the right middle finger.

Keywords: Bizarre parosteal osteochondromatous proliferation, middle phalanx, adult female

Introduction
Case report
A 35-year-old female presented to our outpatient clinic with pain and slowly progressive swelling on the radial aspect of middle phalanx of the right middle finger, with no apparent trigger. Swelling was present for the past 13 years but pain emerged only recently. Pain was unrelenting and not related to activity. Due to pain and cosmetic reason she requested a consultation. On physical examination a discrete, non mobile, hard mass measuring 2x0.7 cm was fixed to the underlying bone with no overlying skin changes. There was minimal tenderness on deep palpation and minimal restriction on the terminal movement of distal interphalangeal joint. Neurovascular examination was normal. Plain X-rays showed a well circumscribed bone-like mass around the distal half of the middle phalanx of the middle finger on the right hand. There was neither breach in the cortex nor medullary involvement. En bloc resection and decortication were done to prevent the reoccurrence of the bizarre parosteal osteochondromatous proliferation (BPOP). Under ultrasound guided median and radial nerve block was performed by the Anaesthesiologist using 0.5% bupivacaine of volume 3ml for each nerve before start of surgery. Gross specimen showed the surface of the lesion covered by a cartilage cap with osteoid tissue in the interior continuous with the cortical bone. Histopathological examination of specimen revealed cartilage at the margins of the lesion, bone at the center, with fibrous granulation tissue admixed in between. Diagnosis of BPOP was based on the preoperative imaging findings which were later confirmed by histopathological examination.

BPOP is a rare disease that typically presents as aparaosteal mass affecting the surface of bones in the hands and feet, especially the proximal and middle phalanges and carpals and tarsal bones [1]. It presents as an exophytic outgrowth consisting of cartilage, fibrous tissue and bone. Histologically it is characterized by a heterogeneous mixture of bone, cartilage, and fibrous tissue in the exophytic outgrowth [2]. Despite no malignant transformation, metastasis, or death associated with BPOP it has a very high rate of reoccurrence, 50% within 2 months to 2 years of surgery [3]. Despite having characteristic clinical, radiological and histological features, it is repeatedly confused with other benign and malignant lesions such as parosteal osteosarcoma, and osteochondroma.

Resection of the capsule with decortication of the underlying cortical bone is the treatment of choice to reduce the reoccurrence rate [4]. Due to misdiagnosis and inappropriate treatment associated with BPOP the clinical, radiological and histological features should be considered to make a correct diagnosis as many conditions may mimic BPOP.
It is a benign lesion with atypical microscopic features and a high chance of recur.

In summary, BPOP is a rare osteocartilaginous lesion, mainly occuring in the adult population. In view of a varied differential diagnosis and a high rate of local recurrence, an early identification and a wide excision are essential in Nora's lesions. Bizarre parosteal osteochondromatous proliferation (Nora's lesion) can occur in middle phalanx. The condition needs to be differentiated from florid reactive periostitis, turret exostosis, osteochondroma and juxtaphyseal osteosarcoma.

References