

1

: (BPOP)

BPOP

: 1984 1998 BPOP 19 X-
가 15 6 : 9, 17 69 (, 41) , ,

: 15 9 가
6 15 가 가 5
가 , , (long bone) 3 , 가 2 ,
가 1 2.5×1.9cm
15 3 .

: BPOP
BPOP

(bizarre parosteal osteochon- 가 15 . 15
dromatous proliferation, BPOP) 1983 Nora (1) 2 13
35 가 가 (2-9). X-
6 : 9
17 69 (, 41),
(ossification) 10 60 (10 ;1 , 20
(1, 2). Nora (1) ;3 , 30 ;4 , 40 ;2 , 50 ;1 , 60 ;4).
(2, 3).

가
(10). BPOP

1984 1998 BPOP 19 X-

1
2
3
1999 3 5 1999 5 14 . 가 15 9 가
6 15 2 15
가 5 가 ,

(metatarsal bone), (long bone) 3 (Fig. 2). 1-6cm, 15
 (Fig. 1), 가 2, (metacarpal bone) 0.6-3.5cm 2.5 × 1.9cm
 (metatarsophalangeal joint) 가 3 , 2 2
 1 . 가 1 (Fig. 3), 1 1 .



Fig. 1. 35-year-old female with BPOP at the distal shaft of the ulna.

A. Anteroposterior view of the wrist shows a lobulated bony lesion (arrows) at the medial aspect of the distal shaft of the ulna. The lesion is attached to the cortex.

B. Lateral view shows ventral location of the lesion (arrows) with lobulated margin.

C. Microphotograph of the lesion shows irregular lobules of cartilage maturing into bone. Note the characteristic dark blue color of the cartilage as it matures into bone (Hematoxylin-Eosin × 40)



Fig. 2. 26-year-old female with BPOP at the distal phalanx of the 4th toe.

A. Anteroposterior view of the foot shows an irregular margined, bony lesion (arrows). The lesion is attached to the distal phalanx. Diffuse swelling of the soft tissue is noted.

B. Lateral view shows attachment of the lesion (arrows) to the distal phalanx, however, the medullary cavity of the distal phalanx is normal appearance.



A

B

Fig. 3. 32-year-old female with recurred BPOP at the proximal phalanx of the 3rd finger.

A. Oblique view of the hand shows a well-defined, lobulated bony mass (arrows) at the radial side of the proximal phalanx.

B. 2-years follow-up film after surgical resection shows a small bony mass (arrows) at the same site.

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가
BPOP
가
가
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BPOP
(2).
(7, 8)
(fusiform)
(erosion)
BPOP
가
BPOP
(fibroosseous pseudotumor)
가
가
(2).
10 , 4 , 1
BPOP
BPOP
가 가
20%
50%
(1).
3 (20%)
가
가
BPOP
BPOP
573

BPOP 1983 Nora (1)
35
1/4
가 6 : 9
20-30
(2). 2
(osteochondroma), (subun-
gual exostosis), (parosteal osteosarcoma),
(heterotopic chondro-ossification),
(florid reactive periostitis) (myositis ossificans)
BPOP
가
(lacunar spaces)
(4, 5).
가
1cm
BPOP

3가

(1, 2, 10).

Yuen (6)
erative periostitis) BPOP

가

가

BPOP가

가

BPOP

BPOP

(prolif-

가

1. Nora FE, Dahlin DC, Beabout JW. Bizarre parosteal osteochondromatous proliferations of the hands and feet. *Am J Surg Pathol* 1983;7:245-250
2. Meneses MF, Unni KK, Swee RG. Bizarre parosteal osteochondromatous proliferation of bone(Nora's lesion). *Am J Surg Pathol* 1993; 17:691-697
3. Cooper PN, Malcolm AJ. A bizarre parosteal osteochondromatous proliferation of the radius. *Histopathology* 1993;22:78-80
4. Dahlin DC, Unni KK. *Bone tumors, General aspects and data on 8,542 cases*. Springfield, IL:Charles C Thomas, 1986
5. Davies CWT. Bizarre parosteal osteochondromatous proliferation in the hand:a case report. *J Bone Joint Surg[Am]*1985;67:648-650
6. Yuen M, Friedman L, Orr W, Cockshott WP. Proliferative periosteal processes of phalanges:a unitary hypothesis. *Skeletal Radiol* 1992;21:301-303
7. Porter AR, Tristan TA, Rudy FR, Eshbach TB. Florid reactive periostitis of the phalanges. *AJR* 1985;144:617-618
8. Jongeward RH, Martel W, Louis DS, Okoye MI, Walter N. Case report 304:Florid reactive periostitis proximal phalanx of the left 5th finger. *Skeletal Radiol* 1985;13:169-173
9. de Lange EE, Pope TL Jr, Fechner RE, Keats TE. Case report 428: bizarre parosteal osteochondromatous proliferation(BPOP). *Skeletal Radiol* 1987;16:481-483
10. . Bizarre parosteal osteochondromatous proliferation (Nora's lesion) : 5 . 1996; 30:733-738

Radiological Findings of Bizarre Parosteal Osteochondromatous Proliferation¹

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Purpose : To analyse the radiological findings of bizarre parosteal osteochondromatous proliferation (BPOP), a rare benign tumorous lesion with a high frequency of recurrence which frequently occurs around the short tubular bones of the hands and feet.

Materials and Methods : Between 1984 and 1998, 19 cases of BPOP were pathologically Proven, and in is of these, six men and nine women aged between 17 and 69(mean, 41) years, plain radiographs were available for analysis. We examined the location and size of lesions, and their relationship to adjacent bone.

Results : In all cases, trabecular bone formations were present. There were not separable from adjacent bones, which in all cases appeared normal. In nine of 15 cases margins were sharp, and in the remaining six they were irregular. Lesions were located around a phalanx of the hand (n= 5), a metatarsal bone (n= 3), a long bone (n= 3), a phalanx of the foot (n= 2), a metacarpal bone (n= 1), and a metatarsophalangeal joint (n= 1). Their average size was 2.5 × 1.9cm, and in three of is cases the tumor recurred.

Conclusions : BPOP showed a well-marginated mass of heterotopic mineral arising around short tubular bones. These finidngs were useful for diagnosis and differential diagnosis.

Index words : Bones, abnormalities
Bones, radiography

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