

Periosteal Chondroma of the Hand: Two Cases

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Periosteal chondromas are rare cases and also rarely seen in hand bones. We presented two periosteal chondromas occurred in the tubular bones of the hands and compared these findings with the literature.

Key words: Periosteal, chondroma, hand

El yerleşimli periosteal kondroma: İki vaka

Periosteal kondromalar nadir görülen vakalardır ve el kemiklerinde görülmeleri daha da nadirdir. Elin tubuler kemiklerini tutan iki periosteal kondrom vakasını ve literatürle bu bulguların karşılaştırmasını sunduk.

Anahtar kelimeler: Periosteal, kondroma, el

Periosteal chondromas are rare benign tumors of cartilage originating from subperiosteal tissues. Until 1975 there were only 34 cases in the literature (1). Up to date total number of cases does not exceed 100. This tumor is seen mostly in humerus, tibia, femur (% 70 of cases) and occasionally in the tubular bones and feed (% 25 of cases). The predominant location is metaphyses (2,3,4). We reported two periosteal chondromas which were seen in the tubular bones of the hands, a rare location. Also, the literature were compared with our cases.

CASE REPORTS

Case 1: S.O. a 44 year-old female, had a 3,5 cm nodular mass on fifth finger of her right hand . The mass gradually attained its size over a period of seven years, and it was moderately

painful. There was no ulceration or color change on the overlying skin and the laboratory work-up was unremarkable. Antero-posterior and lateral radiograms (**Figure 1A-B**) revealed a juxtacortical soft tissue mass of 3 cm with scalloping of the underlying cortical bone of the second phalanx of the right fifth finger. There was no evidence of the penetration into the medullary cavity. Minute calcifications were noticed in the center of the globoid mass. An amputation from the metatarso-phalangeal joint was made. On gross examination a bluish white tumor was seen as encircling the phalanx. Microscopic sections revealed a benign hyaline cartilage with focal myxoid change and calcification and a tiny buttress of bone formation around the outer borders of the tumor. There was no penetration to the medullary cavity.

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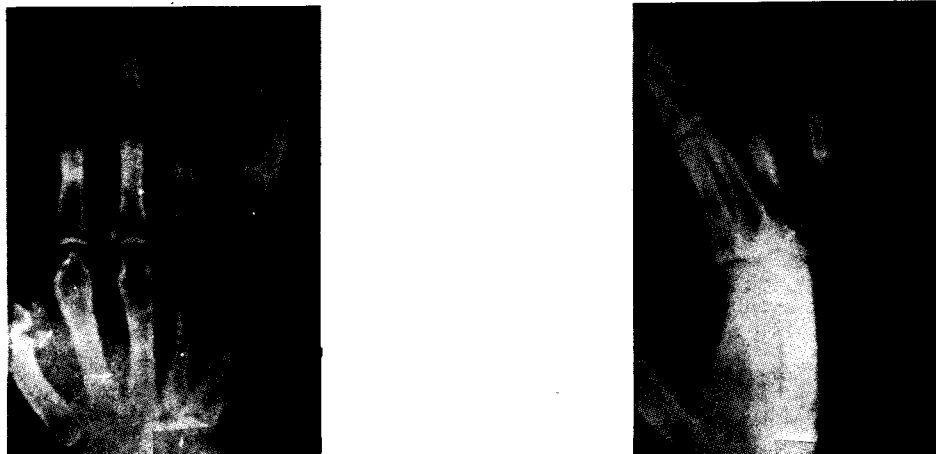


Figure 1A-B. On the lateral and antero-posterior radiograms show juxtacortical soft tissue mass of 3 cm with scalloping of the underlying cortical bone of the second phalanx of the right fifth finger. Minute calcifications are seen in the center of the mass. There was no evidence of the penetration into the medullary cavity.

Case 2: O.O. a 53 year-old male was examined due to a painful nodule on the distal phalanx of the thumb of his left hand. The mass was 0.5 cm when noticed thirty years ago and attained a dimension of 3 cm in diameter. There was no ulceration but the skin overlying the mass was blue. The antero-posterior and lateral radiograms (**Figure 2A-B**) revealed a 3 cm soft tissue tumor neighboring the distal phalanx of the right thumb. There was erosion of the proximal cortical phalangeal bone without sclerosis and medullary penetration. There were small flecks of calcification inside the mass. The lesion was curetted and fragments were submitted to pathology. The bluish white tissue fragments showed a hyaline cartilage with focal myxoid

change consistent with a periosteal chondroma.

DISCUSSION

Periosteal chondromas are commonly seen in the 2nd and 3rd decades mainly in males. The size is on average 1 to 3 cm. Clinically pain and soft tissue swelling are seen (2,5,6). Radiologic appearance of the tumor is very characteristic. A soft tissue mass eroding the neighboring cortex is seen. In 50% of cases there is patchy calcification. The lesion is located eccentrically and limited with a sclerotic region which elongates into the medullary canal. Usually there is no penetration into the medullary canal.



Figure 2 A-B. On the antero-posterior and lateral radiograms show 3 cm soft tissue neighboring the distal phalanx of the right thumb. Small flecks of calcification are seen inside the mass. There was erosion of the proximal cortical phalangeal bone without sclerosis and medullary penetration.

Minimal periosteal reaction can be seen (2,3,7,8).

Macroscopically, it is seen as a well delineated bluish cartilaginous structure. Microscopically frequently a hypercellular lobulated hyaline cartilagenous structure is seen with binucleation and plump nuclei. Sometimes atypism is seen but mostly they are benign (2,3,5,7)

Radiographically, differential diagnosis includes periosteal chondrosarcoma, osteosarcoma, fibrous cortical defect and soft tissue tumor eroding the bones (5,7,9). Especially periosteal chondrosarcoma is more aggressive and shows cortical destruction. It is seen in an elderly age group and predisposed to have a greater size. Histologically, it is difficult to differentiate the malign and benign event, invasion is the only criterium. If the lesion radiologically shows cortical destruction and aggressive pattern, it should be considered as a condrosarcoma (2,5-7,10). Both of our cases had typical radiological appearance of periosteal chondroma. In both cases, despite the sizes of the lesions were at the upper limit and the patients were elderly, no radiologic aggressive appearance was observed. The cases were considered as chondroma. The diagnosis was proved histologically.

REFERENCES

1. Duran H, Ferrandez L, Sierra G, y Cajal SR, Duran M, Stern LL. A case of juxta-cortical chondroma. Z Orthop 113(6): 1100-1102, 1975.
2. Resnick D. Bone and joint imaging, volume 2. WB Saunders Comp, Philadelphia. 1982, pp:1128-1129
3. Stainer GC. Benign cartilage tumors. In : Taveras JM, Ferruci JT(eds). Radiology. diagnosis-imaging-intervention, volume 5. JB Lippincott Comp Philadelphia, 1990, p.13.
4. Baudrillard JC, Lerais JM, Schernberg F, Gillen P, Toubas O, Durot JF. Subperiosteal (Juxtacortical) chondroma of the hand. Apropos of 2 cases. Review of the literature. J Radiol 66(3) 233-239, 1985.
5. Nojima T, Unni KK, McLeod RA, Pritchard DJ. Periosteal chondroma and periosteal chondrosarcoma. Am J Surg Pathol 9 (9): 666-667, 1985.
6. Boriani S, Bacchini P, Bertoni F, Campanacci M. Periosteal chondroma. A review of twenty cases. J Bone Joint Surg 65(2):205-212, 1983.
7. Bauer TW, Dorfman HD, Lathman JT. Periosteal chondroma: a clinicopathologic study of 23 cases. Am J Surg Pathol 6 (7): 31-37, 1982.
8. de Santos LA, Spjut HJ. Periosteal chondroma: a radiographic spectrum. Skeletal Radiol 6(1): 15-20, 1981.
9. Greenspan A, Unni KK, Matthews J. Periosteal chondroma masquerading as osteochondroma. Can Assoc Radiol J 44(3): 205-208, 1993.
10. Fornasier VL, Mc Gonigal D. Periosteal chondroma. Clin Orthop 124: 233-236, 1977.

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