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Case Report

Benign fibrous histiocytoma of ulnar bone: rare tumor in a rare location

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Abstract

Benign fibrous histiocytoma is a very rare tumor with special radiographic and microscopic criteria. It mostly involves the ilium and sacrum but it also can occur in tubular bones. We report a benign fibrous histiocytoma in ulnar diaphysis.

Keywords: Fibrous histiocytoma, Ulna, Benign tumor.

Introduction

Benign fibrous histiocytoma (BFH) is a very rare tumor with special radiographic and microscopic criteria (1). It contains spindle-cell lesion composed of fibroblast-like cells with a storiform pattern (1). The ilium and ribs are the most frequently reported involved sites (2). It may present as a diaphyseal lesion of the long tubular bones. We report a unique BFH in ulnar diaphysis.

Case report

We examined a 26 year-old right handed male referred to our hand clinic for swelling and mild pain in his left forearm. His past medical history indicated that the patient has had a two years ago falling down accident and suffered from intense pain. After receiving medical consultation and fracture in ulnar bone due to large lytic lesion was revealed. The fracture was treated by immobilizing the limb in long arm splint. He underwent incisional biopsy in other center which the microscopic diagnosis showed aneurysmal bone cyst and incisional biopsy. When we visited the patient, physical examination was normal except for mild swelling and tenderness in his left forearm. Lab test were normal but plain X-rays revealed huge lytic lesion with multiple coarse trabeculations within the lesion and cortical thinning at ulnar bone diaphysis (Fig. 1). MRI of the left forearm showed expansile lytic lesion and differential diagnosis suggested aneurysmal bone cyst, giant cell tumor and osteoblastoma (Fig. 2).

Patient underwent en block excisional biopsy regarding to the aggressiveness of previous pathologic diagnosis. We removed 16cm of ulnar diaphysis which its cortex seemed intact (Fig. 3). Gross inspection revealed ulnar lytic lesion displaying a fusiform expansion and intramedullary multinodular cream and yellow rubbery mass with intact cortex (Fig. 4).

The pathologic examination of tumor showed fibrohystiotic spindle cells arranged in sheets in a storiform pattern with no abnormal or mitotic figures and revealed areas of foam cell collections, calcification,

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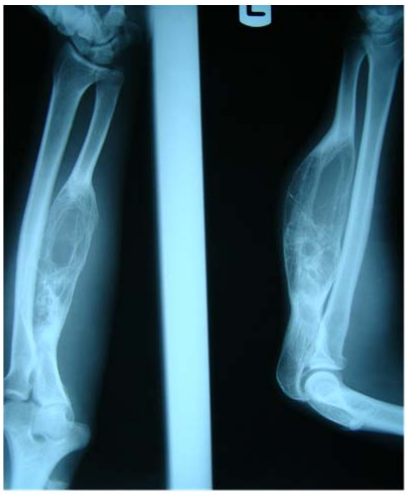


Fig. 1. Forearm X rays show lytic lesion in ulnar diaphysis.

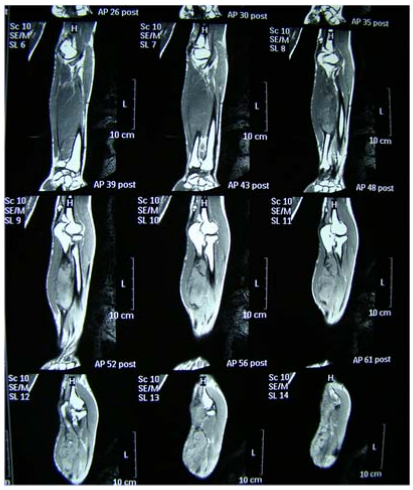


Fig. 2. The MRI of the lesion in ulnar bone.

hemosiderin deposition and giant cell aggregation. Surrounding skeletal muscles were not invaded. The final diagnosis was benign fibrous histiocytoma (Fig.5-6). We reconstructed the ulnar bone by autologous fibular bone graft and fixed it by intramedullary rush nail. We immobilized the reconstructed limb in a long arm cast for 8 weeks and afterward the patient was referred to physiotherapy to regain elbow range of motion. After 12 months there was a solid union and patient could return to his job with full range of motion (Fig. 7).

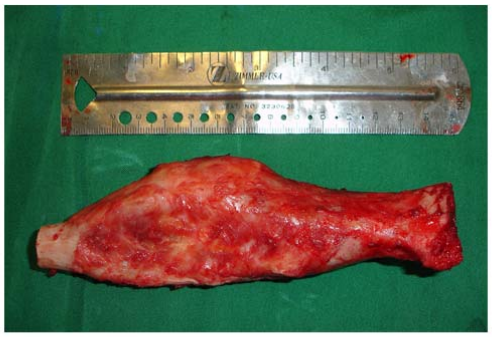


Fig. 3. Ulnar bone after resection.

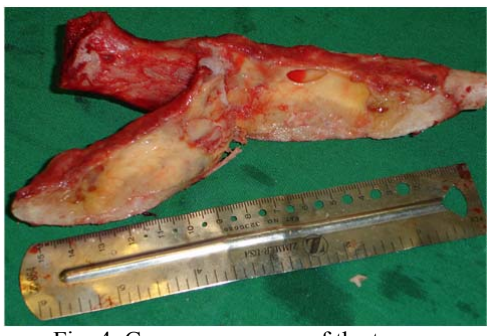


Fig. 4. Gross appearance of the tumor.

Discussion

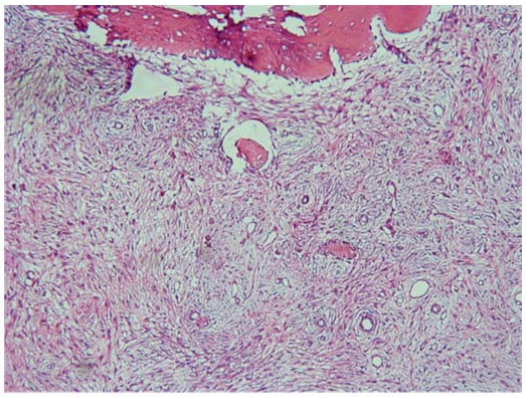
After Dahlin description of benign fibrous histiocytoma in 1978 only a few cases of BFH have been reported in the literature (1-5).

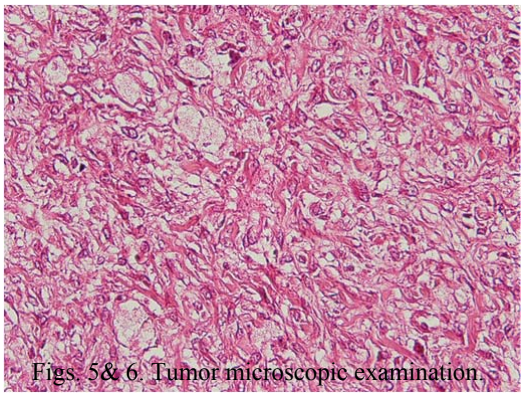
The benign fibrous histiocytoma and non-ossifying fibroma cannot be distinguished from each other merely on the basis of histological findings (1,3). Since histological results are similar in these two lesions, identification of the lesion should be based on clinical and radiographical tests. Radiological test represents BFH as a well-defined lytic lesion which usually but not always has sclerotic margin and fine trabeculations (5).

BFH mostly involves the ilium and sacrum (6), but it also can occur in tubular bones. Individual cases have been reported in skull, vertebra and epiphysis or diaphysis of the long bones such as femur, humerus, tibia, and fibula (3,6,7). The tumor can disrupt the cortex and invade surrounding soft tissue (6).

The tumor can involve patients with a wide range of ages from 5 to 75 years. Usually involved patients are older than those with a non-ossifying fibroma. No sex predilection has been reported for this tumor (6).

The microscopic examination revealed distinct fibroblastic pattern that contained scattered multinucleated giant cells, foam cells and a storiform pattern of fibrogenic





Figs. 5& 6. Tumor microscopic examination.

cells (1). These symptoms in long bones and during adulthood could suggest the diagnosis of benign fibrous histiocytoma (1).

BFH may show indistinct borders with an aggressive pattern (8). It can be locally aggressive and amputation may be necessary to eliminate the tumor after recurrence (8,9). Suggested treatments for this tumor are curettage and filling of the defect with bone graft or cement. Recurrence is a risk in treatment and there are reports of recurrence and variable rate of amputation afterward (5). In our case because of huge size of the tumor we preferred resection and reconstruction of the defect using a long fibular bone graft. As a unique option of treatment, the performed procedure was successful. The BFH differential diagnosis of long bones suggests aneurysmal bone cyst, unicameral bone cyst, giant cell tumor and osteoblastoma. The presenting case indicated that BFH should be considered in differential diagnosis of large lytic lesion in long tubular bone. The successful treatment of BFH was by en block resection and reconstruction with fibular bone graft.

References

1. Bertoni F, Calderoni P, Bacchini P, Sudanese A, Baldini N, Present O, et al. Benign fibrous histiocytoma of bone. J Bone Joint Surg [Am].1986; 68: 1225-1230.
2. Clark TD, Stelling CB, Fechner RE. Case report 328: benign fibrous histiocytoma of the left 8th rib. Skeletal Radiol. 1985; 14: 149-151.
3. Destouet JM, Kyriakos M, Gilula LA. Fibrous histiocytoma (fibroxanthoma) of a cervical vertebra: a report with a review of the literature. Skeletal Radiol. 1980; 5:241-246.
4. Dahlin DC. Benign and atypical fibrous histiocytoma. In: Dahlin DC, ed. Bone tumors. General aspects and data on 6,221 cases. 3rd ed. Springfield: Charles C Thomas; 1978:116–136.
5. Clarke BE, Xipell JM, Thomas DP. Benign fibrous histiocytoma of bone. Am J Surg Pathol. 1985; 9:806–815.
6. Dorfman HD, Czerniak B. Bone Tumors. Missouri: Mosby, 1998; 509-513.
7. Grohs JG, Nicolakis M, Kainberger F, Lang S, Kotz R. Benign fibrous histiocytoma of bone: a report of ten cases and review of literature. Wien Klin Wochenschr. 2002 15; 114(1-2):56-63.
8. Sanatkumar S, Rajagopalan N, Mallikarjunaswamy B, Srinivasalu S, Sudhir NP. Benign fibrous histiocytoma of the distal radius with

congenital dislocation of the radial head: a case report. Journal of Orthopedic Surgery. 2005; 13(1):83-87

9. Hermann G, Steiner GC, Sherry HH. Case report 465: benign fibrous histiocytoma (BFH). Skeletal Radiol. 1988; 17:195–198.