Case Report

Association of giant cell tumour and aneurysmal bone cyst in a foot bone, talus - a case report

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Abstract

Giant cell lesions have been reported at small bones of hands and feet. Most of them are seen in third and fourth decade with a distinct predilection for skeletally mature females. The giant cell containing lesions of small bones are mostly aneurysmal bone cysts rather than true giant cell tumors. Both, giant cell tumor and aneurysmal bone cyst are unusual in talus. It is not uncommon to see areas of secondary aneurysmal bone cyst in giant cell tumors.

Key Word: giant cell tumour, aneurysmal bone cyst, talus recurrence aggressive behavior

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INTRODUCTION

Giant cell tumors have been reported at unusual locations such as scapula, skull and small bones of hands and feet. Most of them are seen in third and fourth decade with a distinct predilection for skeletally mature females[1]. Radiologically these are lytic destructive bony lesions. The giant cell containing lesions of small bones are mostly aneurysmal bone cysts rather than true giant cell tumors. However, giant cell tumors do occur in small bones of hands and feet. These are very aggressive in their local behavior [2]. At the same time, aneurysmal bone cysts are the lesions of bones which may clinically suggest a true neoplasm. These are more often seen in women and are associated with pain and swelling of bone[3].

CASE HISTORY

A 40 year lady presented initially with slowly progressive swelling on medial aspect of left ankle with painful limp. Conventional radiology revealed a lytic lesion with soap bubble appearance and cortical expansion and thinning of talus (Fig. 1). The lesion was curetted and bone grafting was done. The curetted material revealed it to be aneurysmal bone cyst on histopathology (Fig. 2). The lesion recurred after one and a half years. Repeat curettage and bone grafting was done. The lesion recurred third time, quite faster within six to eight months after revision surgery. The x-ray showed increase in the bone destruction, along with expansion into soft tissue and first metatarsal (Fig. 3). Considering the rate of recurrence, painful and restricted ankle movements and x-ray findings, she was subjected for (Lt) below knee amputation.

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Figure 1

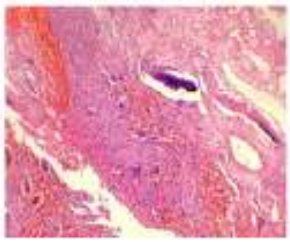
Figure 2

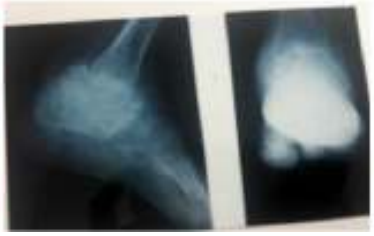
Figure 3

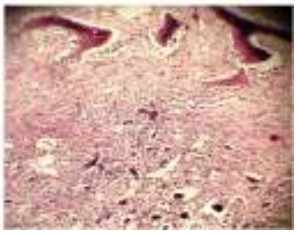
Figure 4

Legend

Figure 1: X-ray foot shows soap bubble appearance of a cyst in talus with cortical expansion.
Figure 2: showing blood vessel surrounded by osteoclastic giant cells with bone (H & E 10 X 10x)
Figure 3: X-ray foot with recurrence of cystic mass eroding articular cartilage of ankle, first metatrrsal and surrounding soft tissue.
Figure 4: shows bony trabeculae with plenty of multinucleate giant cells and spindle cell stroma showing mitoses (H & E 10x X 10x)

MORPHOLOGY

On gross received a specimen of below knee amputation of left leg. On thorough dissection, it showed a cystic lesion in talus, 4x5 cm, reddish brown sharply demarcated from surrounding tissue and friable. The lesion was also seen extending into first metatarsal and the surrounding soft tissue. The articular cartilage of ankle was also destroyed. Other small bones of feet were preserved.

MICROSCOPIC FEATURES

Multiple serial sections taken after extensive sampling from various areas in the lesion showed plenty of multinucleated osteoclastic type of giant cells along with spindle cell stroma showing pleomorphism and mitoses. Few vascular spaces were also seen. Areas of hemorrhages and necrosis were evident. So, the diagnosis of giant cell tumor with aggressive behavior was put forth (Fig. 4).

DISCUSSION

Both, giant cell tumor and aneurysmal bone cyst are unusual in talus. The differential diagnosis of giant cell lesions of bone include, giant cell tumor, aneurysmal bone cyst, osteosarcoma hyperparathyroidism and chondroblastoma[2]. In our case, the initial diagnosis on biopsy was aneurysmal bone cyst, due to the presence of plenty of vascular spaces, some osteoclastic giant cells and scanty spindle cell stroma. The giant cells were noted around blood vessels. However, the sections from below knee amputed limb with lesion in talus showed abundant osteoclastic type of giant cells, mitoses and pleomorphism in stromal cells and few vascular spaces, extending into surrounding soft tissue. The clinical, radiological and microscopic features viewed together led to the diagnosis of giant cell tumor with aggressive behavior. It is not uncommon to see areas of secondary aneurysmal bone cyst in giant cell tumors. Aneurysmal bone cysts are perhaps a reaction of skeletal tissue which may be in association with a variety of bony lesions[4]. Whether this indicates that all aneurysmal bone cysts are formed on the basis of preexisting lesions, remains to be proved[5].

REFERENCES

1. Bone tumous – Carrie Y. Inwards and K. Krishnan Unni – In Diagnostic Surgical Pathology, Editor Stephen Sternberg, Vol. I, Third edition, Lippincott, Williams and Wilkins, Philadelphia, 1999, page 291.
2. Wold LE, Swee RG : Giant cell tumor of small bones of hands and feet. Semin Diagn Pathol 1994:1;173-84.
3. Martinez V, Sissons HA: Aneurysmal bone cyst. A review of 123 cases including primary lesions and those secondary to other bone pathology. Cancer 1988:61;2291-2304.
4. Tumous of cartilage and bone- In Evans histological appearance of tumours by David Ashley, Churchill Livingstone, Fourth edition, New York, 1990 page 148.
5. Tumors and tumor like lesions simulating primary bone tumor of bone. In Atlas of Tumor pathology second series, Fascicle V by Harlen J Spjut, Howard D Dorfman, Robert E Fechner, Lauren V Ackerman, Castle House Publications Pvt. Ltd. 1979, page 362.

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