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Giant Cystic Chondrosarcoma of Femur: A Case Report

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Abstract

Chondrosarcoma is a common primary bone tumor which accounts for 20% to 27% of all malignant bone tumors. It often occurs in the cartilage of the pelvis, femur, tibia, and humerus. Small cystic degeneration can be seen in chondrosarcoma. We report a rare case of a Giant Cystic Chondrosarcoma of Femur in 45 years old male.

Keywords : Giant Chondrosarcoma, Cystic change, Femur

Introduction

Chondrosarcoma is the second most common primary malignant bone tumor.[1] Chondrosarcoma constitutes a heterogeneous group of neoplasms that have the production of cartilage matrix by tumour cells in common.[2] It arises more commonly in men with a ratio of 2:1. It occurs in the fourth to sixth decades of life. [1] The chondrosarcoma has a predilection for pelvis (iliac bone involved most frequently), followed by proximal femur, proximal humerus, distal femur and ribs.[3] On the basis of origin, chondrosarcomas may be divided into primary or secondary lesions. Primary chondrosarcomas are those that arise de novo, whereas secondary chondrosarcomas arise from previous cartilage lesions (enchondromatosis or with single or multiple cartilaginous osteochondromas in Maffuci syndrome and Ollier's disease). [4,5] Small cystic change is present in chondrosarcomas which is contrary to the present case report showing a cyst as a major component. Giant chondrosarcomas was reported in Sacrum, ribs, chest wall and humerus.[2,3,5] Chondrosarcoma have excellent prognosis and surgical resection is the most effective therapeutic modality.[3]

Case Report

A 45 years old male patient presented with pain and swelling in the thigh region. The swelling was non-mobile with ill-defined borders. X-ray findings showed a large cystic lesion with cortical destruction. CT scan revealed bony destruction and areas of small calcifications. Patient was operated and tumor mass was sent to the Pathology department for further histopathological examination.

Gross examination revealed a tumor mass measuring 25×15×8 cm. External surface was smooth. Cut surface was cystic filled with gelatinous material.

Microscopic examination revealed lobulated hypercellular tumor mass with malignant chondrocytes in hyaline matrix. Chondrocytes showed enlarged hyperchromatic

nuclei with frequent mitotic figures and proliferating blood vessels and were positive for S-100 on IHC. Diagnosis of Giant Cystic Chondrosarcoma was made.

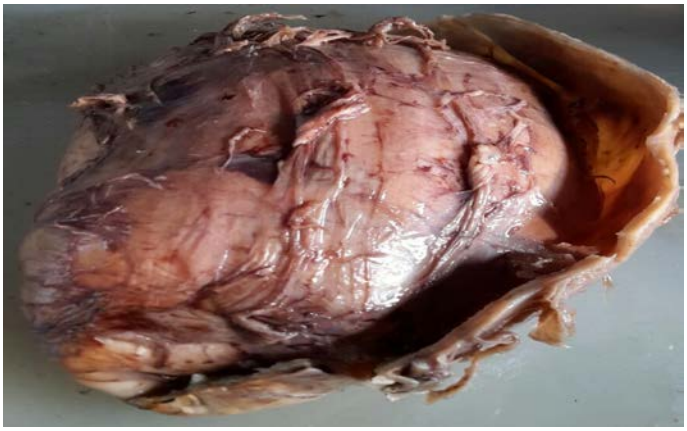

Figure: A

Figure B

Figure 1: A and B: A large cystic swelling measuring 25×15×8 cm

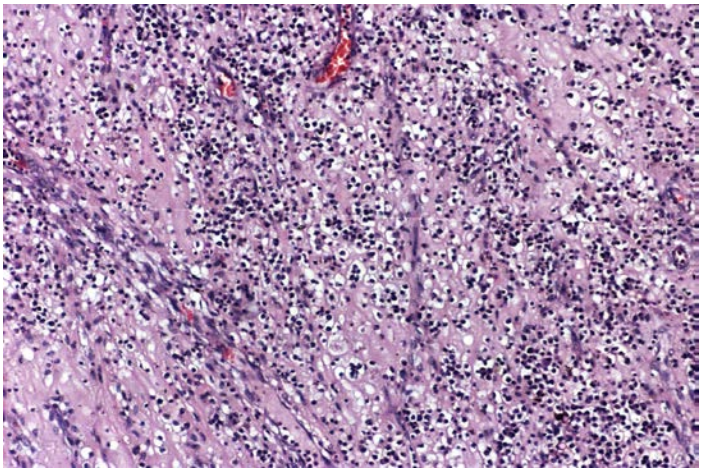

Figure 2 : Microscopy revealed malignant chrondrocytes in hyaline matrix alongwith proliferating blood vessels (H&E)

Discussion

Chondrosarcoma is the third most common primary tumour of the bone, after myeloma and osteosarcoma and the second most common primary malignant bone tumor.[1,2] More than 90% of the chondrosarcoma are idiopathic, which grow slowly, with a relatively good prognosis.[3] Histopathological grading is the best predictor of clinical behaviour.[2] Chondrosarcoma is classified into three variants, according to site of involvement: central, peripheral and juxtacortical. Central chondrosarcoma arises in the medullary cavity of long bones.[1]

Giant chondrosarcoma is a rare type of chondrosarcoma. From the review of literature, we found only twelve cases have been reported so far. Usually the size of chondrosarcoma is more than 5cm.[7] In the present case report, size is 25cm.

Grossly, the neoplastic cartilaginous tissue is compressed inside the bone and exhibits areas of necrosis, cystic change and hemorrhage. The cortex of the bone is infiltrated by the tumor. [1] In this study, excised specimen is totally cystic. Till now, no such case have been reported.

Microscopically, the tumor cells resemble normal chondrocytes and lie in the lacunar spaces embedded within hyaline cartilage matrix. Foci of myxoid change are seen with the lobulated architecture. The tumor cells are more or less uniformly distributed in the cartilaginous matrix or they form small clusters.[8] Chondrosarcoma is classified into three grades on the basis of histological features such as nuclear atypia and cellularity.[8]

Micoscopically, the differentials considered were chondroma, chondromyxoid fibroma and chondroblastic osteosarcoma.[7]

A series from the 1980s reported a 5-9% risk of metastasis with low grade conventional chondrosarcoma, whereas recent series reported 3% or no risk of metastasis.[2] It

usually spreads within the medullary cavity; pelvic tumors may invade the adjacent organs. Distant metastases to lung are followed by skin and soft tissue.[6]

It is generally believed that chondrosarcoma is relatively chemo- and radiotherapy resistant due to the extracellular matrix, poor vascularity and low percentage of dividing cells.[2]

Conclusion

Giant Cystic Chondrosarcoma is very rare. Few cases have been reported till now. Early diagnosis and treatment can improve the outcome of treatment.

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