

# CASE REPORT

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## CHONDROBLASTOMA IN DISTAL TIBIA - A CASE REPORT

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**INTRODUCTION:** Chondroblastoma was first described as calcified giant cell tumour by Ewing. Codman described it as epiphyseal chondromatous giant cell tumour. Jaffe and Lichtenstein named it as chondroblastoma, a rare benign cartilaginous tumour. It represents less than 1% of all primary bone tumours and most commonly originate from the epiphyses of long bones, particularly from the epiphyses of the proximal and distal parts of the femur, the proximal part of the humerus, and the proximal part of the tibia. Other reported sites are talus, scapula, patella, pelvis, distal radius, distal tibia, ribs, proximal fibula, calcaneum.

Its occurrence in distal tibia is very rare with 2 documented cases in UK from 1974 to 2000, 3 documented cases in FRANCE from 1950 to 2005, no documented case from 1977 to 2000 in Harvard, USA.

The purpose is to present a rare tumour occurring at an unusual site.

**KEYWORDS:** Codman's Tumour, Epiphyseal Tumour, Curettage.

**CASE REPORT:** A 17 yr male presented in our hospital in November 2011 with pain and swelling in right medial malleolus since 3 months. Tenderness was present on medial malleolus with no restriction of movements of right ankle. Patient was able to walk normally without limp.

Radiologically, A well defined lytic lesion, spherical in shape ( 2 cm in diameter ) was seen in the right distal tibia involving the medial and posterior malleolus. The lesion was non-expansile, eccentric and was epiphysis-metaphyseal in location. Periosteal reaction of the adjoining metaphysis was also seen extending several centimeters above the lesion. Chest X-ray was normal.

Core biopsy by Jamshidi needle was performed which showed numerous polygonal cells arranged in sheets with rounded nuclei and acidophilic cytoplasm. Large number of osteoclastic giant cell were scattered throughout the lesion. Chondroid tissue was seen in many areas with areas of haemorrhage.

A diagnosis of Chondroblastoma was made.

Curettage and bone grafting was performed with biopsy of the curettings confirming the diagnosis. Follow-up was done at 6 weeks, 3 months, 6 months, 9 months and 1 year after the curettage.

The lesion resolved with resolution of pain and swelling. Ankle movements were not affected. No radiological sign of recurrence was found at 1 year follow-up.

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**DISCUSSION:** Chondroblastoma or Codman's Tumour is a benign chondroid neoplasm that nearly always arise in the epiphyseal region of bones before physeal closure. It most commonly occurs during childhood or adolescence (2<sup>nd</sup> decade) almost always in the distal epiphysis of the femur, proximal tibia and proximal humerus. Occurrence of chondroblastoma in a site like the distal tibia is very rare. Males are more frequently affected. Clinical symptoms include persistent long standing pain, local tenderness, swelling, and limited motion of the adjacent joint.

The histopathological description of chondroblastoma according to the World Health Organisation is "a relatively benign tumour, characterised by highly cellular and relatively undifferentiated tissue, made up of rounded or polygonal chondroblast-like cells with distinct outlines and multi-nucleated giant cells of osteoclast type arranged singly or in groups.

The presence of a cartilaginous intercellular matrix with areas of focal calcification is typical – chicken wire calcification. About 10% to 15% of lesions are associated with large, fluid-filled spaces indicative of a secondary aneurysmal bone cyst component.

Radiologically chondroblastoma are lytic, small (average diameter - 4cm), round or oval, well demarcated (sometimes with a thin rim of bony sclerosis) lesion that occur in epiphyseal

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region of young adolescents. Cortical expansion and periosteal reaction are also not infrequent. Periosteal reaction is a frequent and significant finding, since it is not usually seen in benign tumours.

It is always necessary to do a biopsy in order to establish the diagnosis.

Roentgenographically, the tumour may be confused with benign giant-cell tumour, chondrosarcoma, central chondroma and even fibrous dysplasia. The presence of chondroblasts and hyaline matrix with or without focal calcification will differentiate chondroblastoma from benign giant-cell tumours. If evidence of malignancy, such as anaplasia and hyperchromatism of the tumour cells or binuclear cartilage cells, is lacking, chondrosarcoma and osteogenic sarcoma may be ruled out.

The recommended surgical treatment for chondroblastoma varies. Curettage, either alone or in conjunction with bone grafting or packing the cavity with polymethylmethacrylate, or coupled with cryosurgery and radiofrequency thermal ablation are among the techniques which have been described. The rate of recurrence after these procedures has been reported to be between 10% to 35%. Recent researches now recommend that polymethylmethacrylate be chosen over bone graft to fill defects after removal of worrisome or recurrent lesions.

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