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Original Research Paper

Radiology

IMAGING FINDINGS IN OSTEOLYTIC LESION OF TIBIA IN INFANT

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ABSTRACT Presence of lytic bone lesions have a wide differentials in different age groups. Adamantinoma with two distinct variants, classic adamantinoma and osteofibrous dysplasia-like adamantinoma representing ends of pathological spectrum. These lesions arise primarily in long bones with a predilection for the tibia and fibula. Osteofibrous dysplasia is a benign fibro-osseous lesion typically found in children younger than 10 years. Adamantinomas, however, are highly malignant and invasive tumors found predominantly in adult men, with an average age of diagnosis between 20 and 50 years. Given the benign nature of osteofibrous dysplasia and osteofibrous dysplasia-like adamantinoma and the malignant nature of adamantinoma warrants timely correct diagnosis precluding unnecessary surgical intervention.

KEYWORDS : Osteofibrous dysplasia, Admantinoma, bone tumor , lytic-lesions tibia.

DESCRIPTION

A 10 month-old male infant presented with swelling in his left leg for 2 months. It was not associated with overlying skin changes. General examination revealed no abnormalities. There was no history of fever and trauma.

A plain X-ray of the left leg showed a large osteolytic lesion in the shaft of the tibia (figure 1) which was well defined. The margins were sclerosed, butthere was no associated periosteal reaction or soft tissue changes. MRI confirmed the presence of the osteolytic lesion, which was hyperintense on T2-weighted images (figure 2), but there was no breach in the continuity of the cortices and soft tissue extension.

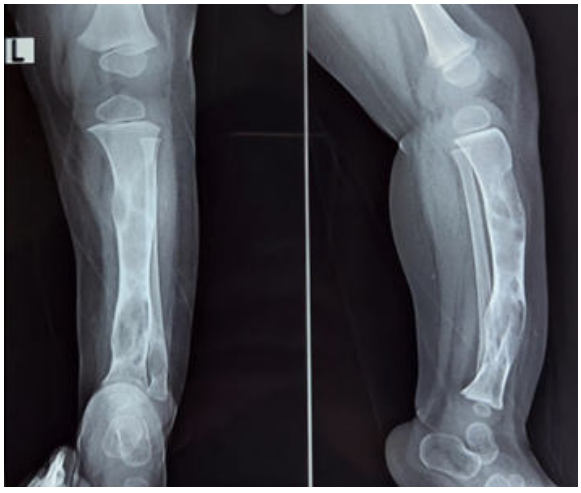

Figure 1 Anteroposterior and lateral view of plain X-ray showing a large osteolytic lesion in tibial shaft with cortical expansion and anterior bowing on lateral radiograph.

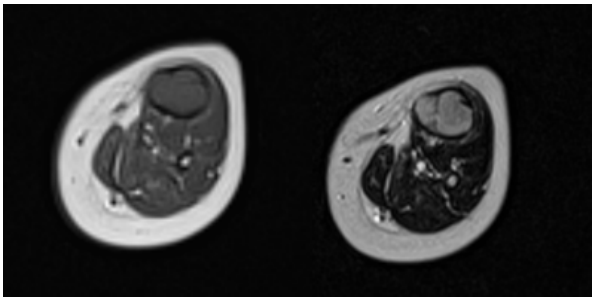

Figure 2 Axial T1- and T2-weighted images show diffuse heterogeneous intermediate signal mass (arrows) replacing entire medullary space

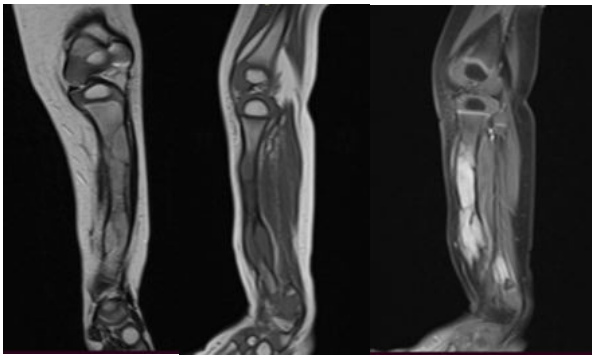

Figure 3 A.Coronal T2-weighted image shows intermediate signal intensity mass
B. Sagittal T1-weighted image shows intermediate signal intensity mass
C. On sagittal contrast-enhanced T1-weighted image, mass exhibits diffuse heterogeneous enhancement

DISCUSSION

Fibrous dysplasia, eosinophilic granuloma, enchondroma, non-ossifying fibroma, osteoblastoma, chondroblastoma and chondromyxoid fibroma are among the various differentials of osteoplytic lesions with sclerosis. The radiographic findings and the patient's age were indicative of the provisional diagnosis of a benign bone tumour.

Typical radiographic findings of osteofibrous dysplasia reveal eccentric, fairly well marginated osteolytic lesions with a sclerotic border in the anterior cortex of the tibial diaphysis. As the lesion progresses, it exhibits a longitudinal spread to metaphysis, cortical expansion,intramedullary extension and anterior bowing deformity.[1,2]

Osteofibrous dysplasia is a non-neoplastic condition, which is rare and commonly affects the long bones especially tibia and fibula.[3] It is mostly asymptomatic. Osteofibrous dysplasia typically appears as an osteolytic lesion with lobular loculations to a bubbly appearance and circumscribed by a sclerotic border. Many authors have hypothesized that osteofibrous dysplasia, osteofibrous dysplasia-like adamantinoma and adamantinoma may be different stages of the same disease that progresses from osteofibrous dysplasia to classic adamantinoma, based on observations of the histologic and immunohistochemical features.[4,5]

Adamantinoma is a rare low-grade malignanttumor that occurs primarily in the tibia. Besides its preferential involvement with the tibia, it shares radiologic and pathologic features with osteofibrous dysplasia.Although the older age

distribution of adamantinoma and its more aggressive clinical behavior distinguish it from osteofibrous dysplasia, the diseases overlap considerably in clinical, radiological and histopathologic aspects[6,7].

CONCLUSION

Diagnosis and treatment are complicated by the fact that osteofibrous dysplasia can resemble monostotic fibrous dysplasia and adamantinoma of long bones grossly and microscopically and that it tends to recur if surgical intervention is performed before skeletal maturity is reached. Within the spectrum of pathology lies a rare benign lesion known as osteofibrous dysplasia-like adamantinoma. This intermediate form has the potential to spontaneously regress or transform into a malignant adamantinoma.

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