

Ewing's sarcoma of the calcaneus bone

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Introduction

Ewing's sarcoma is a common primary malignant bone tumour in 1st and 2nd decade of life, usually occurring in long bones, pelvis and ribs, with only 3-5% of cases in the bones of the hands and feet [1]. The prognosis is poor and this cancer is known to metastasize to the lungs and to other bones. Treatment recommendations include multidrug chemotherapy, radiotherapy and surgical resection for local control of the disease.

Case report

A 12 year old boy admitted to MBS Hospital, KOTA (RAJ.) with painful swelling of his left ankle for 6 months and fever for 3 months. Local examination revealed a firm tender swelling affecting the left ankle with raised temperature of the joint and normal surrounding skin.

Blood investigations revealed elevated erythrocyte sedimentation rate (85 mm/hr). An X-ray of the ankle (Figure 1) showed disuse osteopenia involving all the tarsal bones and moth eaten type of bone destruction involving calcaneus with sunray type of periosteal reaction. Non-contrast computerised tomography (Figure 2) of left foot and ankle revealed moth eaten type of destruction in calcaneus. Furthermore, the classical sun-ray appearance of periosteal reaction along with soft tissue component is seen. Radiological examination of chest and pelvis was normal. Biopsy of the swelling showed Ewing's sarcoma which was immunohistochemistry positive for CD99. A below knee amputation was performed.

Discussion

Ewing's sarcoma is a primary malignant bone lesion

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Figure 1. Radiograph showing a "moth-eaten" calcaneus and osteopenia



Figure 2. The "sun-ray" appearance

usually seen in the diaphysis of long bones and the flat bones of young patients, in the age group of 5 to 20 years.

Clinical and laboratory features include local pain, soft-

tissue swelling and erythema, occasionally accompanied with fever, anaemia, leukocytosis, and accelerated erythrocyte sedimentation rate [2].

In long bones, the tumour is seen as areas of lytic destruction in the diaphysis. The periosteal reaction can be lamellated, parallel, spiculated, perpendicular or mixed. Characteristic is the “onion peel” appearance. In the early stages of the disease, it needs to be differentiated from osteomyelitis, since both may produce periosteal reaction with bone destruction. Ewing's sarcoma may involve the small bones of hands, feet and even os calcis. Since 1921, Cook has reported 29 cases of Ewing's sarcoma of the calcaneum in the literature [3].

Dahlin et al reported 165 cases of Ewing's sarcoma, of these, only four cases occurred in the feet [4]. Reinus et al reported 12 cases of Ewing's sarcoma involving bones of hands and feet out of a total of 377 patients [5].

Conclusion

Ewing's sarcoma in an atypical location may be misdiagnosed as osteomyelitis or cellulitis.

Early recognition of an atypical appearance and the

location of Ewing's sarcoma are necessary for its adequate treatment.

References

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Key points:

- Atypical location of Ewing's sarcoma may mimic osteomyelitis or cellulitis and may be missed.
- Early diagnosis is necessary for its adequate treatment.