CASE REPORT

OSTEOSARCOMA IN A SIXTEEN-MONTH OLD BOY

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Summary

We report a case of a sixteen-month old boy with osteosarcoma of the left humerus. To the best of our knowledge this is the youngest case reported in Malaysia. This case illustrates that osteosarcoma although rare does occur in a very young child. The child died six weeks after presentation due to disseminated disease.

Key Words: Malignant bone tumour

Case Report

A sixteen-month old Indian boy was admitted in March 1996 with a swelling of the left arm for one week following a trivial fall. There was no significant past or family history. Clinical examination showed the child to be afebrile. There was a diffuse swelling over the upper left arm. X-ray showed a diffuse sclerotic lesion involving the epiphysis and metaphysis of the left proximal humerus. There was a marked periosteal reaction with a central lucency at the metaphyseal-diaphyseal junction (Figure 1). The initial diagnosis was chronic osteomyelitis. Osteogenic sarcoma was considered in the differential diagnosis but was not considered as the primary diagnosis as it is rare in this age group. He was treated with intravenous (IV) antibiotics. There was no evidence of a sequestrum or abscess which would have required immediate surgery. After one week of IV antibiotics, he was discharged and given oral antibiotics to be continued for another 5 weeks at home. At follow-up one week later, the mass over the left arm had significantly increased in size. X-ray showed a large soft tissue shadow and a destructive lesion over the proximal humerus suggestive of osteosarcoma. An urgent open biopsy was performed. Intraoperatively, necrotic bone and tumour tissue were obtained. The histopathological section showed

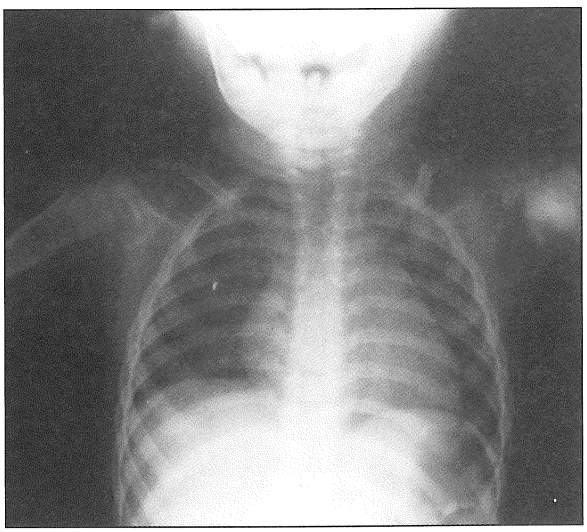

Fig. 1: Plain X-ray showing the lesion in the left proximal humerus.

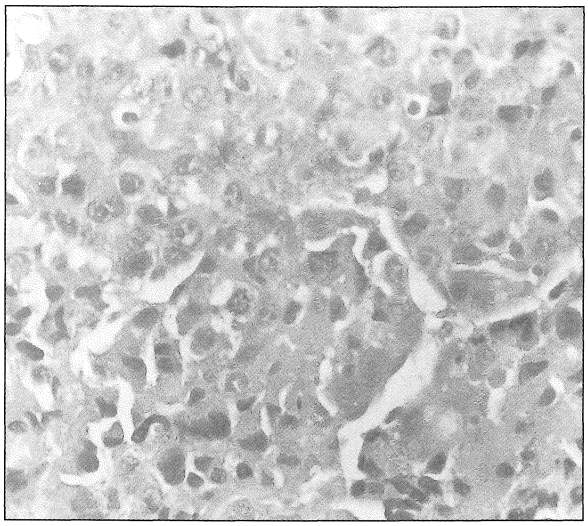

Fig. 2: High power view of osteosarcoma showing tumour cells with large pleomorhphic nuclei, increased mitotic activity and irregular trabeculae of osteoid (H & E x 400).

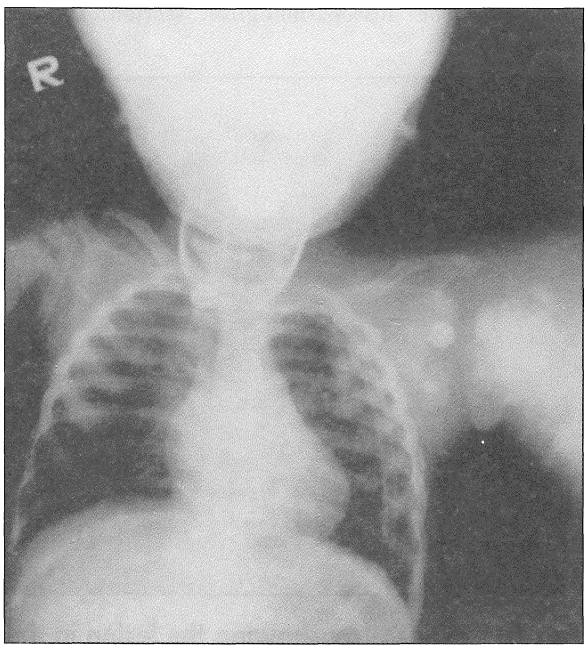

Fig. 3a: Plain X-ray showing secondaries to the lungs and right humerus.

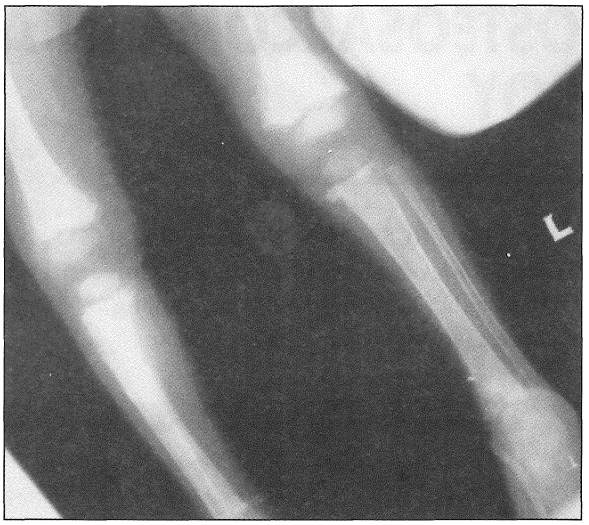

Fig. 3b: Plain X-ray showing multiple secondaries in both femurs and tibiae.

pleomorphic large malignant cells directly producing osteoid (Figure 2). The skeletal muscle was infiltrated by malignant cells. He was referred to the paediatric oncologist but the parents declined further treatment and instead sought traditional treatment. The child was admitted one month later, severely ill with disseminated disease and died a few hours after admission. Plain Xrays showed multiple pulmonary secondaries and lesions similar to the primary tumour in both femurs, tibiae and the right humerus (Figures 3a and 3b). The parents did not consent to a post-mortem examination.

Discussion

The incidence of osteosarcoma in Malaysia between 1969 - 72 was reported to be between 0.11 (Malays) to 0.23 (Chinese and Indians) per 100 000 population per year[1]. Osteosarcoma usually occurs between the ages of 10 to 20 years. It is rare in children aged 5 years or less. We believe that the case of osteosarcoma reported here is the youngest in Malaysia. There were two younger children previously reported. Lim-Tan and Khong[3] from Singapore reported a fourteen-month old girl with osteosarcoma of the femur in 1986. Faure and Gibod in

1983 (cited by Lim-Tan and Khong[3]) reported on another fourteen-month old child with osteosarcoma of the tibia.

The occurrence of osteosarcoma in a very young child raises the possibility of a causative factor. Epidemiological studies and reports of familial occurrence of osteosarcoma have raised speculation as to whether there are genetic and environmental factors in the pathogenesis of this disease[1]. Our case did not have a family history of osteosarcoma and there were no known predisposing factors.

The initial diagnosis in our case was osteomyelitis as the growth plate was generally thought to be resistant to direct tumour spread. Recent magnetic resonance imaging studies have however shown metaphyseal tumours crossing the growth plate to invade the epiphysis. These findings have challenged the concept of the growth plate as resistant to early tumour spread[2].

This patient is among the youngest with osteosarcoma reported in the literature. We are unable to determine whether the other skeletal lesions were secondaries or a multicentric osteosarcoma as the post-mortem was not done. This case illustrates that osteosarcoma, although very rare in the young, does occur. It may simulate an infection initially. A malignant lesion should be considered in this age group with characteristic X-ray changes.

References

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