

Osteosarcoma of Left Metatarsal Bone. A Case Report

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Abstract

Osteosarcoma is the most common primary malignant bone tumor characterized by the formation of osteoid. The tumor affects mainly adolescents and young patients it occurs mainly in long bones and involvement of metatarsal bones is rare. Amongst the metatarsal bone the calcaneus is the most common bone involved. Males are more affected by osteosarcoma than females. We report a rare case of a 55 year-old male with chief complain of on and off pain and swelling of the left foot. After surgical excision, histopathological evaluation of the lesion revealed the lesion as malignant bone tumor osteosarcoma. We herein describe the unusual presentation of the osteosarcoma of left foot in a 55 year old male which was diagnosed by histopathological findings along with the radiological findings.

Keywords: Osteosarcoma; Metatarsal; Bone Tumor; Osteoid; Sarcoma

Introduction

Osteosarcoma or osteogenic sarcoma is the most common primary malignant bone tumor which commonly affects the metaphyseal regions of long bones, most commonly around the knee [1]. Wide range of histologic appearances has been described for this mesenchymal tumor. A few histologic variants are osteoblastic, fibrohistiocytic, telangiectatic, small cell, anaplastic, and low-grade central [2,3]. Based upon the pathogenesis osteosarcoma is divided into primary which occurs in the absence of any disease its etiology is mainly hereditary and secondary osteosarcoma which have several predisposing condition like Paget disease, radiation exposure, chemotherapy, foreign bodies or trauma [4,5]. Primary osteosarcomas occurs between the age of 10 and 20 years the long bones of leg the femur and tibia are most commonly involved while the small metatarsal bones are rarely affected [2,5]. Hereby we present a case of low-grade intramedullary osteosarcoma involving the second metatarsal in the left foot of a 55 year-old male who presented with the chief complaint of progressive left foot pain of approximately one-year duration. The patient was an elderly patient presenting with bone pain and swelling and showed no evidence of recurrence or metastasis.

Case Report

A 55-year-old male presented to the orthopedics department of surgery with the chief complaint of progressive left foot pain and swelling of approximately one-year duration. According to patient he was apparently asymptomatic when he developed pain in his leg which increased on walking he also complaint of past history of trauma 30 years back. The swelling was insidious, progressive and mak-

ing a globular appearance. The blood investigations were within normal limits. The serum calcium was 9.4mg/dl, serum phosphorus was 3.8 mg/dl and alkaline phosphatase was 441 IU/L [Normal: 108 - 300 IU]. Blood cell count, liver and renal function tests, serum alkaline phosphatase and chest x-ray, were within normal limits. On X ray examination both AP and lateral view revealed an ill-defined lytic lesion in the shaft of first metatarsal of left foot with contour bulge, cortical erosion, periosteal reaction and adjacent soft tissue thickening suggestive of primary malignant bone tumor (Figure 1 and 2).



Figure 1 and 2: X ray showing AP and Lateral view.

On Histopathological examination the submitted gross was received as fragmented specimen total weighing 100 gram. Largest bony piece measuring 8 x 4.5 x 4 cm, smallest bony piece measuring 3 x 1.4 x 1 cm. The cut surface of the lesion consists of a homogenous grey white mass (Figure 3 and 4).

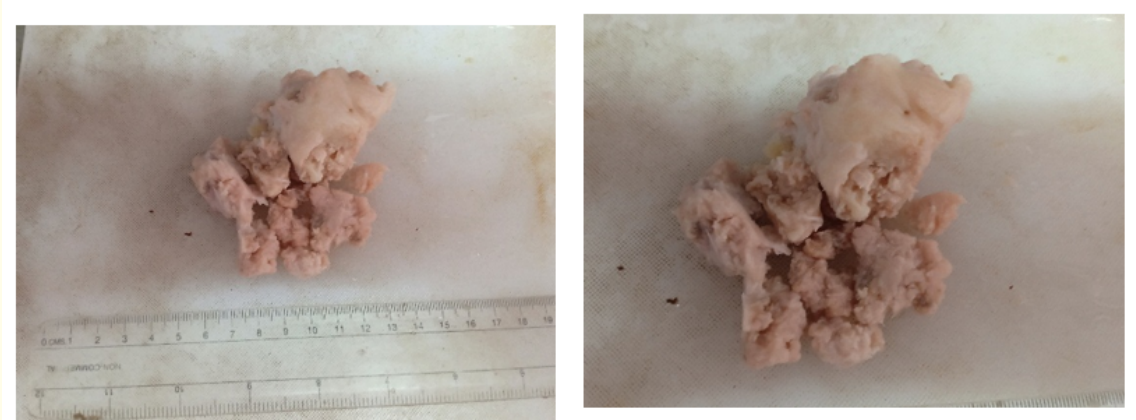


Figure 3 and 4: Showing gross photomicrograph of excised metatarsal bone with osseous and soft tissue mass.

Microscopically Sections shows a malignant tumor composed of sarcomatoid stromal cells embedded in background of osteoid (Figure 7 and 8). The tumour cells are pleomorphic having round to oval nuclei with numerous giant cells and scanty cytoplasm (Figure 5 and 6).

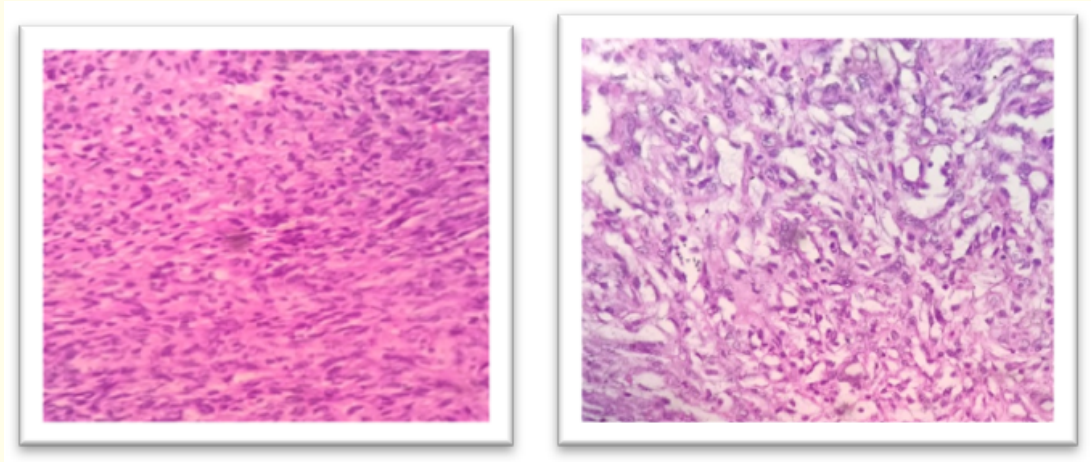


Figure 5 and 6: Showing H&E stained section low and high power view [100X, 400X].

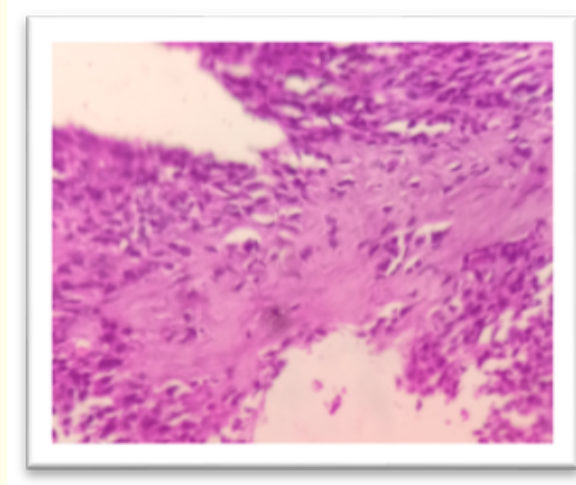


Figure 7: Showing high power view showing homogenous hyaline pink osteoid and bland stromal cells [400X].

Discussion

Benign tumours and tumour-like lesion of the foot and ankle are very common but malignant bone tumours of the foot are rare and reported case reports and very few [6-8]. The osteosarcoma of foot are approximately 1% [9]. The primary conventional osteosarcoma

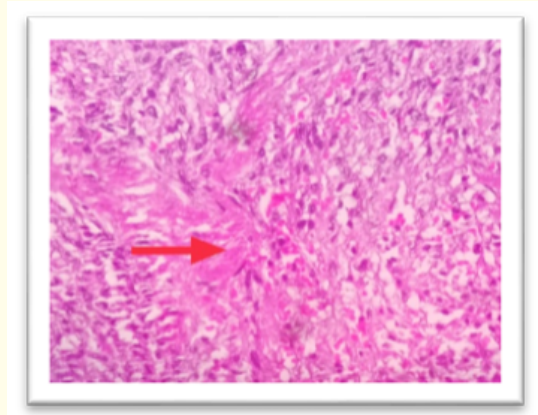


Figure 8: Showing low power view showing homogenous hyaline pink osteoid and bland stromal cells [100X].

occurs more often in young patient with a bimodal age presentation [10,11]. Osteosarcoma of the metatarsal affect older patients and the calcaneus is a common bone involved [12]. In many cases, amputation is required for local control Often there is a delay in diagnosis because of patient delay and mildness of symptoms, or because of misdiagnosis at presentation. Osteosarcoma affects adults rather than adolescents. The soft-tissue sarcomas of foot and ankle are less than 25% of all foot tumours [13,14]. In our case report the patient was 55 years of age with pain and mass were the two common symptom and the x ray finding showed periosteal reaction cortical destruction suggesting towards a malignant lesion. After the histopathological examination the diagnosis of osteosarcoma was confirmed. As opposed to the conventional osteosarcoma where the diagnosis is quick but here there was delay in diagnosis because of the slow onset of symptoms the swelling and pain was mild it took one years to diagnose which was only confirmed by biopsy. The microscopic examination showed sarcomatoid stromal cells embedded in an osteoid matrix. As the osteosarcoma of metatarsal bone was rare but the osteoid produced by the tumor cells confirmed the diagnosis. The osteosarcoma of metatarsal bone has good prognosis if diagnosed and treated early without any residual metastasis. Metastases are most commonly found in the lungs [15]. In short the diagnosis of osteosarcoma at an unusual site such as short tubular metatarsal bone by biopsy is a confirmatory easy and cost effective technique when correlated clinically and radiographically.

Conclusion

Thus I conclude that the conventional osteosarcoma present at an early age but the metatarsal osteosarcoma is rare and present at a late age with the only symptom of swelling and mild pain because of mildness of symptom the diagnosis is generally missed but biopsy is quick and cost effective technique to confirm the diagnosis of metatarsal bone.

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