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Case Report

Secondary malignant transformation of giant cell tumor of the first metatarsal presenting as a fungating cauliflower like mass- A rare case report

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ABSTRACT

Introduction: Giant cell tumor (GCT) is the most commonly occurring benign bone tumor. It occurs more commonly in the third decade of life and is slightly more common in females. The knee joint i.e. the distal femur as well as proximal tibia account for most number cases followed by the distal end of radius. The occurrence in foot is rare and usually occurs in the younger age group. The progression in foot is usually accelerated and is masked by vague symptoms and boring type of foot pain. Malignant transformation is rare.

Case Report: In our case the 38 years female patient had GCT of the first metatarsal which later progressed to a secondary malignancy involving the ipsilateral inguinal and femoral lymph nodes. This was later managed by performing a Syme's amputation along with the involved lymph node dissection.

Conclusion: In our single case we noted these salient features of GCT which has a high rate of recurrence, is locally aggressive and has potential for malignant transformation.

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1. Introduction

Giant cell tumor (GCT) also known as osteoclastoma or myeloid sarcoma is the most commonly encountered benign bone tumor. GCT has been classified as a locally aggressive tumor having a potential for malignant transformation.¹ It accounts for approximately 4-10% of all bone tumors and 20% of all benign bone tumors.² It is found mainly in the long bones occurring in the epiphysemetaphyseal region and rarely in the hands incidence being 2% and even rarer in the foot incidence being 1.5%.³ GCT of the hand and foot presents differently than the other long bones as it is more commonly multicentric, tends to affect younger age group and has a short duration of symptoms of approximately 6 months.⁴ More than 80% of the patients belong to the age group of 20-55 years most commonly presenting during the third decade.⁵ It is marginally more commonly occurring

in females with the ratio ranging from 1.1:1 to 1.5:1 as compared to males.⁶ The diagnosis initially on presentation may not be clear as it may present with a vague foot pain spanning a few months and the initial x-ray findings may be ignored. The various treatment options range from simple curettage or curettage with bone grafting, resection with reconstruction, amputation and radiation. The preferred treatment is aggressive curettage or en bloc resection as GCT has a high local recurrence rate.

2. Case Report

4 months. She had a history of twisting injury about 4 months back post which her pain started. For that she visited a nearby hospital and got her x-ray done and then she was discharged on medications.

She presented to us with a history of dull boring continuous pain over the medial border of foot due to which she had difficulty in weight bearing. There was swelling

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Fig. 1: First x-ray done after twisting injury

present over the medial aspect along with minimally raised local temperature. An x-ray was done which showed lysis and soap bubble appearance along with near complete resorption of the proximal third of the 1st metatarsal as seen in Figure 2.



Fig. 2: X-ray at the time of presentation

Patient was advised to undergo magnetic resonance imaging (MRI) which reported it to be an enchondroma involving the tarsometatarsal joint as well along with the surrounding soft tissue involvement. Patient was posted for curettage with resection of 1 metatarsal along with reconstruction with an autologous fibular strut graft with k wire as seen in Figure 3.

The graft was obtained from the ipsilateral side. Sample was sent for histopathology which showed it to be of a giant cell tumor. The k wire was removed after 6 weeks and a check x-ray was advised which showed lytic changes in the strut graft as seen in Figure 4.

Partial weight bearing was started after 2 months.

After about 5 months post the procedure the patient came with a localized swelling and redness since 4 weeks. A x-ray showed near complete lysis of the fibular graft as seen

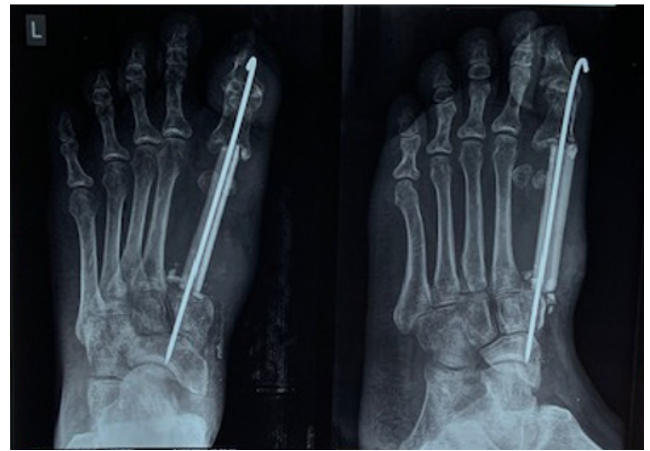


Fig. 3: X-ray immediate post op



Fig. 4: 4- 6 weeks post op x-ray

in Figure 5.



Fig. 5: 5 months post op x-ray

The patient was counselled and admitted and taken up for the removal of the lytic bone graft with local curettage

along with a ray's amputation. Post operative x-ray as seen in Figure 6.



Fig. 6: X-ray post ray's amputation

Post this the patient was advised immediate physiotherapy. Partial weight bearing was started after 1 month. Post this the patient was relatively comfortable during subsequent follow ups and was ambulatory without any support.



Fig. 7: Clinical picture of fungating mass over medial aspect of foot clinical picture of fungating mass over medial aspect of foot

Next presented to us after about from when the ray's amputation was performed with a fungating cauliflower like mass over the medial aspect of dorsum of the foot measuring about 10 x 11 cm in size as seen in Figure 7. X-ray of the same can be seen in Figure 8.

She had reportedly noticed the swelling about 2 to 3 months back which gradually increased in size and later turned into a fungating mass. MRI was done and it showed a malignant lesion along with moth eaten appearance of the 2nd metatarsal, intermediate and medial cuneiforms involving the first two web spaces. For further evaluation a chest x-ray as seen in Figure 9 well as a PET scan was advised which showed reactive ipsilateral inguinal and



Fig. 8: X-ray at time of presenting as fungating mass



Fig. 9: Chest x-ray of patient at time of presentation with mass

femoral lymph nodes as seen in Figures 10, 11 and 12.

She was then counselled accordingly and then posted for syme's amputation with inguinal lymph node dissection. X-ray can be seen in Figure 13 and clinical image in Figure 14.

Post this immediately physiotherapy was initiated and after 2 months partial weight bearing followed by full weight bearing was done. As per our oncologist and oncosurgeon she was not advised adjuvant chemotherapy or radiotherapy.



Fig. 10: PET scan images showing increased uptake over mass of foot and ipsilateral inguinal and deep femoral lymph nodes



Fig. 13: X-ray post Syme's amputation

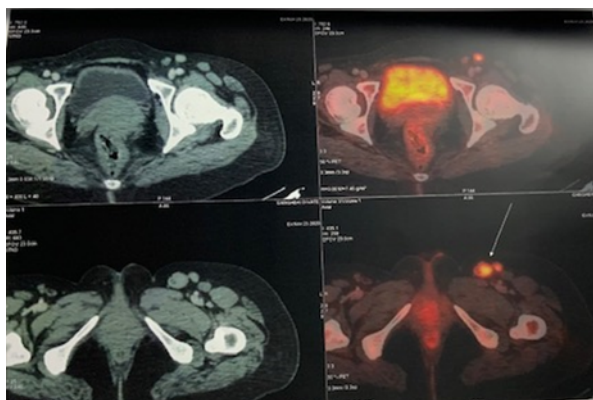


Fig. 11: PET scan images showing increased uptake over mass of foot and ipsilateral inguinal and deep femoral lymph nodes.



Fig. 12: PET scan images showing increased uptake over mass of foot and ipsilateral inguinal and deep femoral lymph nodes.



Fig. 14: Clinical image of Syme's amputation stump

3. Discussion

The patient suffering from GCT in the foot initially presents with a vague pain in the foot since a few months. On getting an x-ray done, a lytic shadow is found. Many a times the patient presents with a pathological fracture. Lytic lesions in the foot can be easily confused with tuberculosis of the metatarsals, enchondromas, aneurysmal bone cyst, brown tumor, metastasis in the foot and giant cell granulomas. GCT though rarely found in metatarsals, is usually more aggressive as compared to other sites.⁴

There are no known dependable predictors for recurrence and malignant transformation.⁶

Curettage alone has a high rate of recurrence ranging from 12–65%, but with lower morbidity and a better functional outcome.⁷ Hence forms the mainstay of treatment. Recurrence post curettage is usually diagnosed within two years of primary curettage.⁸ Wide resection is usually reserved for the more aggressive type of tumors though it has a higher morbidity and lower functional outcome, the rate of recurrence is 0-16%.⁹

4. Summary

The 38 years old female with left 1st metatarsal GCT was taken up for local curettage and resection of 1st metatarsal with reconstruction using fibula strut graft and k wire. She had symptomatic improvement but her follow up x-ray showed lytic shadows and partial resorption of the graft for which a ray's amputation was performed 6 months after the previous surgery. After this the patient next presented with a fungating cauliflower like mass 1 year after the ray's amputation for which a PET scan was done which showed involvement of ipsilateral femoral and inguinal lymph nodes for which a syme's amputation was performed along with inguinal and femoral lymph node dissection.

5. Conclusion

Giant cell tumor has a wide spectrum of presentation from benign which may or may not show local aggressiveness to a malignant tumor. Thorough regular follow up is required even in cases of benign local disease regardless of whether it is treated by curettage or enbloc resection with or without

radiation or adjuvant therapies.

6. Source of Funding

None.

7. Conflict of Interest

None.

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