

INTRODUCTION

Multiple myeloma, although the most common primary bone cancer, occurs infrequently in the foot. Progressive destructive lesions may lead to structural weakening of the bones, especially when occurring in the the lower extremity, potentially leading to pathological fracture, deformity and a threatening preservation of the limb.

A retrospective observational chart analysis was performed. All literature was compiled and reviewed utilizing the PubMed database. In the literature on this topic, prophylactic surgical intervention with internal fixation has been cited with favorable outcomes. However, due to the destructive nature of this incurable disease and its prognosis, the integrity of the limb itself may forever be at stake.

LITERATURE REVIEW

Multiple myeloma is a neoplastic hematologic plasma cells dysplasia characterized by clonal proliferation of malignant plasma cells in the bone marrow and represents ~1% of all neoplastic diseases and 13% of all blood malignancies.



Although the major risk factor for most of these patients is immunosuppression for which infections play a significant role, structural bone loss and subsequent pathological fracture, especially when present in the lower extremities, is an important consideration.

Clinically the most common complaint of multiple myeloma is bone pain, with increased severity during activity. Pathologic fractures can commonly occur and cause acute exacerbations of pain.

CASE REPORT

Presentation: 55 year-old female with worsening right foot and ankle pain for approximately one year recalcitrant to oral anti-inflammatories and corticosteroid injection. Concomitantly she noted a several month history of multiple pigmented subcutaneous nodules.

Imaging: Plain film radiographs and advanced imaging revealed progressive lytic lesions primarily in the distal tibia and calcaneus.



Diagnostics: Core biopsy showed no evidence of malignancy however, repeat biopsy revealed metastatic melanoma and she was referred to the melanoma center for management.

Operative: The patient later underwent palliative prophylactic fixation of the right distal tibia and medial malleolus with plate, screw and cement construct. Prophylactic fixation of the distal tibia and medial malleolus was performed.

Post-Operative: Following a period of non-weight bearing the patient returned to normal activity ambulating independently with much improved pain of the right foot and ankle. There have not been clinical nor radiographic changes indicative of a loss of integrity of the fixation construct in 24 months.



DISCUSSION

This study details the rarely observed pedal and lower leg manifestations of multiple myeloma. Prophylactic fixation for such destructive bony lesions in the lower extremity are undertaken in order to prevent pathological fracture. Goals of this intervention are to provide structural stability, decrease pain of the foot and ankle and limb salvage.

CONCLUSION

Patients with multiple myeloma are not only at increased risk for infection due to impaired lymphocyte function, suppression of normal plasma cell function, hypogammaglobulinemia, and chemotherapy induced neutropenia but are also at an increased risk of pathological fracture due to lytic bone loss. In the face of progressive disease patients can prophylactically be treated with internal fixation in order to decrease the risk of pathological fracture.

This case report is presented to demonstrate our approach towards prophylactic treatment of a rare instance of metastatic multiple myeloma in the lower extremity.

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