

Leiomyosarcoma of the Ankle: A Case Report

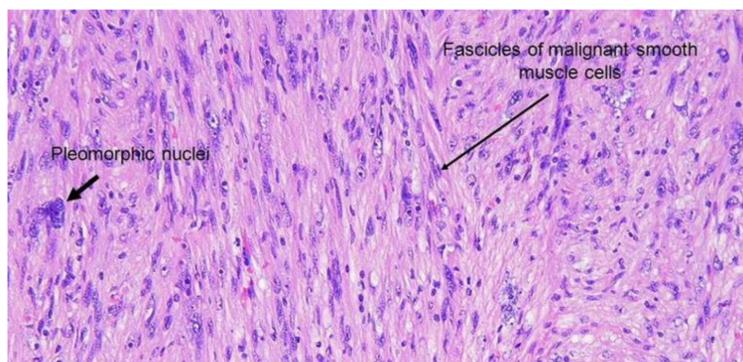
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INTRODUCTION

Soft-tissue sarcomas are a rare form of cancer which account for <1% of malignant tumors in adults. Of the less than one percent, soft tissue sarcomas arising in the foot and ankle only account for 2-5% of these cases. It is said that up to 40% of soft tissue sarcomas are misdiagnosed with likely higher rates in the foot and ankle due to their rare nature.

Leiomyosarcoma tumors most commonly affect the abdomen and uterus as they originate in smooth or involuntary muscle tissue, although they can happen anywhere in the body. They can present as a non-painful mass with varying growth rates and non-specific radiologic findings which leads to delays in diagnosis and treatment. Five-year survival rates range from 62-84%, even with early diagnosis and appropriate treatment. Early diagnosis, pre-operative planning, and proper initial treatment are imperative for successful outcomes.

We report a case of a Leiomyosarcoma of the ankle in a 65-year-old male veteran, which presented as a slow growing mass initially attributed to an ankle injury. Imaging suggested a chronic expanding hematoma with non-aggressive features. The patient underwent surgical biopsy with frozen section exam in addition to appropriate ongoing treatment with Oncology and Orthopedic Surgery



CASE REPORT

A 65-year-old male veteran of Pacific Islander descent, presented with a chief complaint of swelling to the medial right ankle for approximately three years. The patient's past medical history was significant for diabetes mellitus type II, hyperlipidemia, hypertension, and sleep apnea. Significant family history included a daughter with stage IV uterine cancer.

On examination, there was a nontender, mobile soft tissue mass at the right medial ankle. The mass measured approximately 4 cm x 4cm and protruded from the ankle with no overlying skin discoloration or lesions (figure 1). The mass was non-pulsatile. The MRI report revealed a 4.8cm x 4.9cm x 3.0cm subcutaneous mass to the medial ankle with foci of increased T1 signal. The mass was noted to be abutting, but not invading the medial malleolus, navicular, and posterior tibial tendon sheath. The mass was reported to possibly represent a chronic expanding hematoma without aggressive features. (figures 2-4)

Surgical planning included a soft tissue mass excision with biopsy which was discussed in depth with the patient. The patient was amenable to surgical intervention as the mass caused discomfort with shoe gear. During the surgical procedure, a linear incision was made directly overlying the mass. Sharp and blunt dissection was completed to adequately expose the mass. A multilobulated, firm mass with vasculature involvement was visualized (figure 5). A fresh frozen specimen was obtained prior to resection. Two 1 cm wedges were excised and sent for evaluation. The pathologist reported that the biopsy findings were consistent with spindle cell proliferation with cellular atypia, nuclear hyperchromasia, and mitotic activity and could not exclude a spindle cell malignant neoplasm. Due to the potential of malignancy, no further dissection was performed and the incision was primarily closed. Permanent biopsy tissue samples were then sent to the University of Washington pathology department for definitive evaluation. The pathology report was consistent with Leiomyosarcoma, intermediate grade (FNCLCC grade 2 of 3, cT1N0M0 (stage II)). The appropriate consults to oncology and orthopedic were made

CASE REPORT

Oncological treatment options, which were discussed with the patient, included neo-adjuvant chemotherapy, radiotherapy, or a combination of both to help decrease the size of the mass and maximize the probability of limb salvage in the future. The patient opted to proceed with radiation therapy alone. The patient is currently undergoing daily radiation therapy with a follow up with orthopedic surgery after completion of radiation for limb sparing surgical reevaluation.

CLINICAL PRESENTATION

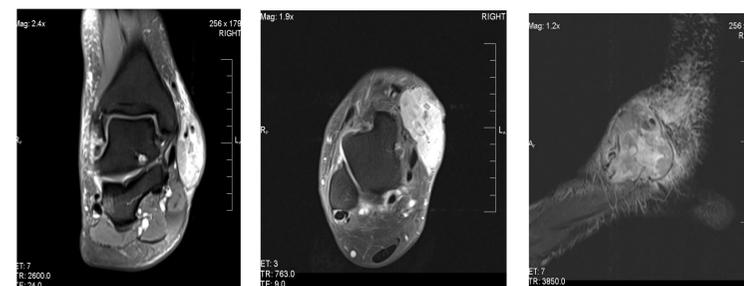


Figure 2 T1 Cor. Figure 3 T1 Axial Figure 4 STIR Sag.



Figure 1 (Pre-op)



Figure 5 (Intra-op)

DISCUSSION

Soft tissue sarcomas represent only 1% of all cancer diagnoses. Fewer than 5% of soft tissue sarcomas are represented in the foot and ankle with soft tissue leiomyosarcoma accounting for only 5-10% of these diagnoses.

Leiomyosarcoma of the ankle is very rare. They often present without classic signs of malignant soft tissue tumors and can be painless, varying size and depth, and be present for months to years without change in size. Up to 40% of all soft tissue sarcomas are misdiagnosed, with an even greater number of misdiagnoses in the foot and ankle. Between 34% to 67% of misdiagnosed Leiomyosarcomas are treated with unplanned excisions which can increase recurrence rates and complicate future surgical planning. Recurrence rate can be as high as 60% with local excision alone. This is reduced to 6.6% to 23% with wide excision and appropriate adjuvant therapy. Therefore, adequate preoperative workup is crucial for the long term survival of the limb and patient.

MRI with gadolinium contrast is the gold standard for imaging soft tissue sarcomas as long as there are no medical contraindications for the patient. If the MRI is diagnostic for a benign lesion or the mass is symptomatic and benign, the mass should be excised. Whenever an MRI reading is inconclusive or suggestive for malignancy, a biopsy should be obtained or referred to the appropriate specialists. An open biopsy was performed in this case. The diagnostic accuracy of open biopsy compared to core needle biopsy is 96% vs 84%, respectfully. Fine needle aspirate biopsy is also another option. However, this only presents cellular components for evaluation and no structural components. Specificity of benign vs malignant diagnosis for fine needle aspirate biopsy in distal extremities was shown to be 71.6%.

Surgical treatment of soft tissue sarcomas in the foot and ankle are complex due to the anatomy of the region and difficulty in obtaining traditional appropriate margins. Close proximity of bones, tendons, and neurovascular structures must always be considered in surgical planning.

In conclusion, Leiomyosarcoma of the ankle is a rare occurrence that can present with atypical symptoms and unclear radiologic findings. Misdiagnosis is common and can lead to unplanned resections and complicate future surgical and oncologic management. Providers should be wary of the possibility of soft tissue sarcoma at initial presentation of a soft tissue mass to prevent any delay in proper treatment.

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