Pleomorphic Liposarcoma in the Ankle: A Case Report

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Introduction

Liposarcoma is the most common type of soft tissue sarcoma in adults, accounting for approximately 20% of all adult soft tissue sarcomas. Its incidence peaks between ages 40 and 60 years with a slight predominance toward men.[1] The most recent World Health Organization classification of soft tissue tumors recognizes five categories of liposarcomas: well differentiated, dedifferentiated, myxoid, round cell and pleomorphic. Pleomorphic liposarcoma (PLS) is characterized by lipoblasts and nuclear pleomorphism. It is defined as a rare, high grade subtype with risk of local recurrence and metastasis. It typically presents as a slowly enlarging, painless mass in lower and upper limbs and to our knowledge, only four cases of PLS have been reported in the foot and ankle.[2-5] We present a rare case of a pleomorphic liposarcoma in the ankle.

Case Report

A 32 year old female presented with pain and increasing edema in her left lower leg. She also had a burning pain into her medial pedal arch for two months prior to her visit. Patient also complained about increased swelling to her ankle. Upon examination, a firm, nonmobile mass superior to the medial malleolus was palpated. Mild edema surrounded the area, otherwise the skin was normal in appearance. Palpation of the mass elicited mild pain to the area and paresthesias into the medial arch of her foot. Patient is overweight and has hypertension but is otherwise overall healthy. Family history noncontributory.

Radiographs were obtained at this visit and a soft tissue mass could be appreciated. An MRI was performed and a solid intensely enhancing mass in the deep subcutaneous space of the lower leg was revealed (Figure 1). Surgical excision was recommended and performed. A firm, yellowish white, dome shaped nodule with a flat surface was excised (Figure 2). The mass abutted the deep fascia, however it did not penetrate through it. Histological analysis showed spindle cell proliferation consistent with grade 2 or 3 pleomorphic liposarcoma (Figure 3).

Following the diagnosis of PLS, the patient was referred to an orthopedic oncologist and subsequently to a radiation oncologist.

The patient had a CT scan of her chest, abdomen and pelvis performed which revealed masses in her lungs, biopsy of lung nodules to be scheduled. She is currently undergoing radiation treatments and chemotherapy. No further excision of the ankle mass was performed.

Findings

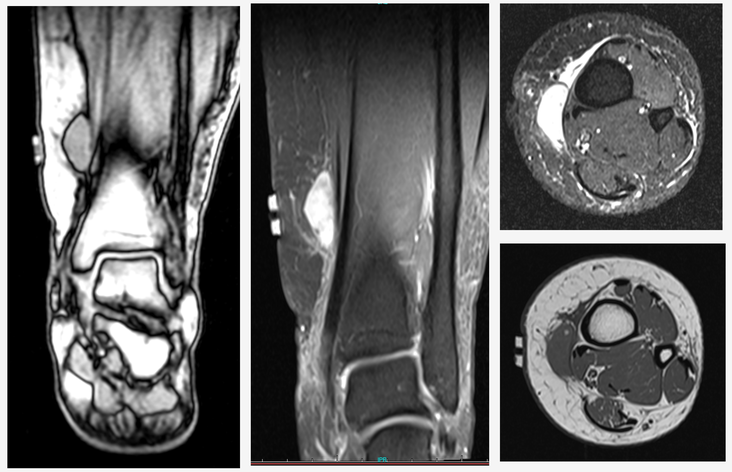

Figure 1. Solid intensely enhancing mass approximately 4.5. cm proximal to the tip of the medial malleolus

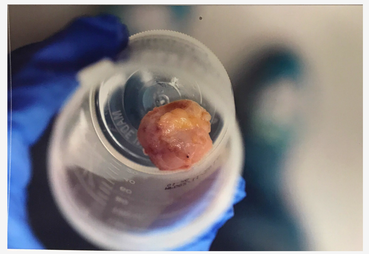

Figure 2. Gross specimen Yellow/ white dome shaped, firm mass measuring approximately 2.5 x 1.0 x 2.5 cm. Specimen sent to pathology for review.

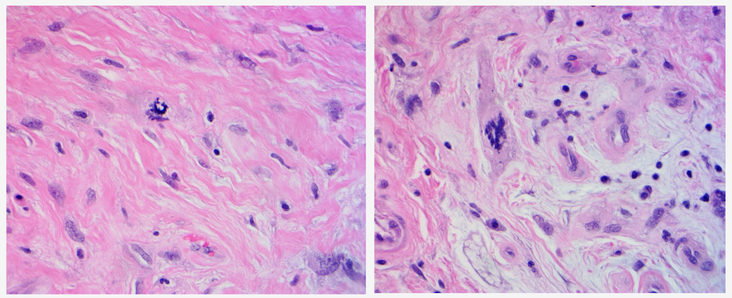

Figure 3. Pathologic slides showing spindle cell proliferation consistent with Grade 2 or 3 Pleomorphic liposarcoma

Discussion

In relation to other types of cancer, soft tissue sarcomas are relatively rare. Approximately 5,000 new cases of soft tissue sarcomas are diagnosed each year.[6] Liposarcoma constitutes about 9.8%-18% of soft tissue sarcomas.[1,7] Pleomorphic liposarcoma, the rarest subtype, is high grade and aggressive. Gebhard et al examined the prevalence of pleomorphic tumors in different areas of the body and found that 36.5% present in the lower extremity, 20.5% in the internal trunk, 17.5% in limb girdles, 16% in the upper extremity, and 9.5% in the thoracoabdominal wall.[8] To our knowledge, only four cases of PLS have been reported in the foot and ankle.[9]

Histologically, the diagnosis of PLS is differentiated from a lipoma by the presence of lipoblasts, nuclear pleomorphism and hyperchromicity. Treatment should be prompt and include some combination of surgery and radiation, with or without chemotherapy. A CT scan of the chest should also be performed following diagnosis of PLS since the lungs are the most common site of metastasis. Following treatment, continued surveillance is required for the remainder of the patient's life.

Since PLS typically presents as slow growing, painless masses, diagnosis can be prolonged. In this case, the patient experienced burning symptoms in her foot, likely from the impingement of the tumor in the tarsal tunnel which lead to her diagnosis. Though the mass was slow growing and relatively painless, a high grade tumor was diagnosed. Although soft tissue sarcomas are rare, a high index of suspicion is required by clinicians when presented with a soft tissue mass. Our case demonstrates the importance of pathohistological analysis of all soft tissue masses in the foot and ankle, regardless of their appearance.

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