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Background: Benign soft tissue tumors are common while soft tissue sarcomas are relatively uncommon in the foot and ankle. When soft tissue sarcomas arise in the foot, these tumors are often misdiagnosed, resulting in an excision without adequate preoperative staging or surgical margins. Due to the close proximity of these tumors to bones and neurovascular structures, wide resection is often difficult, resulting in potentially high local recurrence rates.

Questions/Purposes: The goal of this study is to review our case series of soft tissue sarcomas of the foot and ankle with attention directed at unplanned excisions of sarcomas.

Patients and Methods: There were 91 patients who presented to us with soft tissue tumors of the foot and ankle between 2008 and 2015 (72 benign, 19 malignant). Of the 19 sarcomas, 10 patients were cared for at our current institution that made their charts available for review. We retrospectively analyzed charts of these 10 patients with sarcomas of the foot and ankle. All soft tissue sarcomas were excised with the widest margin possible without any major bone or neurovascular resections to allow preservation of the foot. All patients were followed up for a minimum of 3 months to assess pain, function, and complications.

Results: Patients were followed for an average of 15.3 months (range: 3-34 mos). Synovial sarcoma (n=5) was the most common malignancy, followed by clear cell sarcoma (n=2). There were 4 male and 6 female patients with an average age of 33 years (range: 2-66 years). Seven sarcomas had an unplanned excision by a prior surgeon. Six out of seven patients with unplanned excisions had preoperative MRIs without contrast and were read as benign or cystic masses. Despite having previous unplanned surgeries, none of these sarcomas recurred after re-resection with a wider margin at a mean follow up of 16 months (range: 3-34 mos). Five out of ten patients with sarcomas underwent either preoperative and/or postoperative radiotherapy. Eight patients with sarcomas are alive without evidence of disease. One patient with a synovial sarcoma presented with bilateral pulmonary metastases and died six years postoperatively. Another patient with a rhabdomyosarcoma presented with multiple bony metastases and is currently undergoing treatment. There were no local recurrences in either the benign or malignant groups of patients. Nobody required an amputation. All patients resumed walking ability and were pain free. There were no major complications, however minor complications included lymph edema (n=1), stress fracture (n=1) and wound infection (n=1) that resolved.

Conclusions: This is a retrospective analysis of a single surgeon's experience. Most of the sarcomas had been treated with unplanned excisions prior to definitive surgery. In nearly all instances, preoperative MRIs of the sarcomas were read as benign masses or ganglion cysts. Despite having unplanned excisions and potentially contaminated tissues, no sarcoma patient developed a local recurrence after wide re-resection with or without adjuvant radiation. We recommend preoperative MRI with contrast when feasible before resecting any soft tissue masses of the foot and ankle. In the event of an unplanned excision of a soft tissue sarcoma, the patient should be referred to an orthopedic oncologist for definitive surgery in order to optimize oncological and functional results. When possible, soft tissue sarcomas of the foot should be excised with the widest margins possible. Radiation and/or adjuvant chemotherapy may be considered in selected cases for local and systemic control.