

POSTER 89

Long Term Outcomes of Ewing Sarcoma of the Foot and Ankle

Alexandra Arguello, Mikaela Sullivan, Steven I. Robinson, Brittany Siontis MD, Peter S. Rose, Matthew T. Houdek

Background/Aim: Ewing sarcoma (ES) is one of the most common malignancies of the foot and ankle despite this being a rare location for the primary bone tumor. Standard of care involves chemotherapy and local control with surgery or radiotherapy. Surgical treatment of ES of the foot and ankle has historically involved amputation, though limb salvage options are available if a functional foot can be preserved. The aim of this study is to review our institution's management of Ewing sarcoma of the foot and ankle.

Patients/Methods: We reviewed 21 (16 male:5 female; mean age 20 ± 14 years) patients with ES of the foot or ankle. The most common location of the tumor was the metatarsals (n=5) and distal fibula (n=4). All patients were treated with chemotherapy, most commonly VDC/IE in a neoadjuvant and adjuvant fashion following local control. Local control consisted of surgical resection (n=17) or definitive radiotherapy (n=4). Of the patients who underwent surgical resection, 12 were treated with an amputation (below knee, n=10; Syme, n=2). Limb salvage surgery included wide local excision (n=3) and ray resections (n=2). The mean follow-up was 10-years. The mean tumor necrosis on the resected specimens was 63% (range 0-100%). Five patients presented with metastatic disease which was treated with radiotherapy following consolidation chemotherapy. These patients were not included in the metastatic disease-free survival.

Results: Following treatment, the 10-year disease specific survival was 57%. Patients undergoing surgery for local control had improved 10-year survival compared to those treated with definitive radiotherapy (65% vs 25%, $p=0.04$). There was no difference in 10-year survival between patients treated with limb salvage and those with an amputation (48% vs. 64%, $p=0.86$)

Disease recurrence occurred in 6 patients and included metastatic disease (n=5) and local progression and metastatic disease (n=1). The mean time to development of metastatic disease was 2.5 years. The 5-year metastatic free survival was 59%. The case of local tumor progression occurred in the setting of previous definitive radiotherapy.

Surgical complications occurred in 3 patients. Of the limb salvage patients, one underwent secondary transtibial amputation due to valgus deformity, ankle pain and limb length discrepancy.

Conclusion: Combined chemotherapy and definitive surgical management resulted in 100% local control and improved disease specific survival in the setting of Ewing sarcoma of the foot and ankle. Tumor location will largely dictate the ability to perform a limb salvage surgery, however if limb salvage is able to be done, it does not impact survival.