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Unplanned Intramedullary Fixation Through Bone Sarcomas is Associated With Late Metastasis.

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Background: The outcome of primary bone sarcomas has improved with multimodality treatment and better chemotherapeutics. Rarely, tertiary centers see impending or pathologic fractures treated with intramedullary fixation rather than resection. The goal of this retrospective study was to determine if such treatment was associated with higher rates of distant metastasis, in addition to high local morbidity.

Methods: A retrospective database review was performed from 1993 to 2013, identifying any patients with primary bone sarcoma that underwent previous surgery at an outside institution prior to receiving definitive therapy. Charts were evaluated for the presence of metastasis at initial evaluation and the development of late metastasis. Additionally we evaluated these patients for local morbidity and survival.

Results: 12 patients with high grade bone sarcomas were identified: 5 chondrosarcomas, 3 osteosarcomas, 2 Ewing sarcomas, and 2 high grade pleomorphic spindle cell sarcomas. Two patients had metastatic disease at presentation. Of the remaining 10 patients, 6 (60%) developed metastasis, all of whom died of disease. Of the 4 patients without metastasis one died of other causes, 3 are alive, 2 with no evidence of disease and one with local recurrence. 10 of the 12 patients underwent additional surgeries for tumor resection; 5 amputations and 4 total bone limb salvage surgeries. The 2 patients who did not have additional surgery both had Ewing sarcoma. They underwent radiation for local treatment and are alive with no evidence of disease despite one having metastasis at initial presentation.

Conclusion: The inappropriate treatment of primary bone sarcomas is associated with a high rate of distant metastasis and local morbidity as well as poor survival. While it is difficult to prove in this preliminary investigation a cause and effect between reaming and metastasis, the general orthopaedist should be aware of the poor outcome after such treatment and transfer patients with suspicious lesions to tertiary referral centers for definitive management.

Level of Evidence: IV