

Submission of abstract for Scientific Program of 2015 Meeting of the International Society of Limb Salvage (ISOLS)

Title: High Grade Surface Osteosarcoma_ JST Hospital experience

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Level of Evidence: IV

Abstract:

Background:

Surface osteosarcomas are a group of rare primary bone tumors, which include parosteal osteosarcoma, periosteal osteosarcoma and high grade surface osteosarcoma. These tumors account for about 3-6% of all osteosarcomas. High grade surface osteosarcoma is the rarest of the three subtypes. The oncological aggressiveness of this tumor, including the local recurrence and distal metastasis, is not well reported because its rarity.

Questions/Purposes:

The purposes of this study were: (1) to evaluate the characteristics of high grade surface osteosarcoma; (2) to evaluate treatment and the oncological result of this tumor.

Patients and Methods:

A retrospective study was obtained to evaluate the clinical outcomes of the treatment of high grade surface osteosarcoma. Data was collected from the JST orthopaedic oncology database. Twenty cases were enrolled from 1992 May to 2013 Nov. The median age was 24 years old (range 14-57). There was 13 male and 7 female. The tumor located at femur in 14 cases and at tibia in 6 cases. The patients were proved high grade surface osteosarcoma through biopsy and went into the standard osteosarcoma treatment protocol. The staging studies were done and all the cases were IIB when referred to our hospital.

Results:

Eighteen cases were treated with standard protocol, neoadjuvant chemotherapy, surgery and post-op chemotherapy. Two cases were treated with surgery and post-op chemotherapy because of the age. The surgery included 17 cases of resection and reconstruction with prosthesis or allograft, 3 cases of amputation. A wide surgical margin was achieved in 12 cases, a marginal margin in 7 cases an intralesional margin in 1 case. The median duration of follow-up was 36 months (range 14-144 months). There were 3 local recurrences. Two patients that had a local recurrence underwent amputation and one patient had no local treatment because she died of this disease. The local recurrence rate was 15% (3/20). Seven cases developed the lung metastasis and one case

developed cervical spine metastasis. The metastasis rate was 40% (8/20). At the end of follow-up, five patients died of the disease. The 2 years and 5 years survival were 87.1%, 66.3% respectively in the Kaplan Meier survival analysis. Three primary amputation case had worse survival results ($P=0.20$), when compared with the limb salvage cases

Conclusions:

This series is a large single institution series of this rare tumor. High grade surface osteosarcoma is an extremely rare subtype of osteosarcoma. The current series demonstrates the patients with this disease have the similar overall survival compared to conventional osteosarcoma. Limb-sacrificing surgery cases are associated with a worse prognosis, which is consistent with the previous literature.