

Do We Need to Remove the Biopsy Tract in Patients Undergoing Surgery Following Neo- Adjuvant Chemotherapy for Primary Bone Tumors?

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Place of Study:

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Aims & Objectives:

During limb salvage surgery for malignant bone tumors, it is not infrequent to encounter a poorly placed biopsy scar. Whether this biopsy scar needs to be removed in patients receiving neo adjuvant chemotherapy is yet to be established. Our aim was to study the excised specimens of patients who underwent surgery (limb salvage or amputation) for osteosarcoma and Ewings sarcoma of the bone to see for tumor seeding along/in the biopsy tract.

Methods:

Retrospective analysis of excised tumor specimens was done for patients operated between 2006 and 2014 at our tertiary care centre. Patients who did not receive neoadjuvant chemotherapy and those in whom biopsy was performed outside our institute were excluded from the study. Demographic data was collected from hospital records. Available histopathological slides/blocks of the excised tumor specimens were carefully examined by a senior Histopathologist (specialist in bone tumors) for tumor seeding along/in the biopsy tract.

Results:

Out of 133 patients who underwent wide or radical excision following neo-adjuvant chemotherapy, 16 were excluded as the biopsy was performed outside our hospital. Of the remaining 117 patients, 97 patients (82.9%) were diagnosed with Osteosarcoma and 20 (17%) with Ewing's sarcoma. Limb salvage was done in 86 patients while 31 went for amputation as the primary procedure. The average age of patients at the time of performing biopsy was 16.4 years and the male: female ratio was 1.3:1. The most frequent site to be biopsied was distal end femur (50%), followed by proximal end tibia (16.7%) and humerus (10%). The mean delay between biopsy and definitive surgery was 5.2 months. On examination of the histopathology blocks/slides, it was seen that tumor seeding was present in only one specimen. On retrospective analysis it was seen that this patient was a diagnosed case of Osteosarcoma of the distal femur and had undergone upfront amputation following failure of response to neoadjuvant chemotherapy. Eleven patients (18.3%) did not have any viable tumor tissue in the whole of the biopsy specimen. Nine patients (15%) who underwent limb salvage surgery had local recurrence but none of them had tumor seeding in the biopsy tract of the specimen received after the index procedure.

Conclusions:

Response to neo- adjuvant chemotherapy is the most important predictive factor for skin involvement by Osteosarcoma and Ewings sarcoma of the bone. The main drawback of the study is its retrospective nature and the presence of a small number of cases. We strongly feel that in patients who respond to neo-adjuvant chemotherapy, need to remove the biopsy tract in the primary procedure is questionable.