

OSTEOSARCOMA OF THE PELVIS: CHANGE IN OUTCOMES OVER 40 YEARS

Background: Pelvic Osteosarcoma has a low survival rate explained by multiples factors (advanced patient age, inconsistent use of chemotherapy, delay in diagnosis, lack of major anatomical barriers to tumor growth, large tumor volume and local extension that make wide resection difficult). We reviewed our more recent experience treating pelvic osteosarcoma and evaluated whether modern imaging, chemotherapy, and surgical technique have had an impact on patient survival by comparing patients treated before and after 1990.

Materials and Methods: We performed a retrospective review of 44 patients: the previous study from our institution reported on twenty-five patients treated prior to 1990 (Group A). After 1990, an additional nineteen pelvic osteosarcoma patients have been treated primarily at our institution (Group B). Therefore, we reviewed and compared the clinical experience and oncologic outcome of forty-four patients with pelvic osteosarcoma between those clinical cohorts. The mean follow-up for group A was 29 months (range, 1-142 months) and 70 months (range, 6-248 months) for group B. One-way ANOVAs and Chi-square analyses were used for parametric and non-parametric data, respectively. Kaplan-Meier (log-rank) was used to compare overall survival between the groups at three and five years.

Results: A significant difference in mean tumor diameter at the time of resection was noted (Group A=17.0 cm, Group B=12.5 cm). While not significantly different, Group A patients were more likely to present as Stage IIB (96%) compared to Group B (68%); whereas, patients presenting in Stage IV comprised 4% and 16% of patients for Groups A and B, respectively. A significantly different overall survival at three years was 20% and 63% between Groups A and B, respectively. A significant difference was also noted for five year overall survival between Groups A (20%) and Group B (47%). Disease free survival at five years between Group A and Group B was 4% and 37%, respectively.

Conclusions: This study demonstrated an improved five-year disease free survival for pelvic osteosarcoma treated after 1990's where systemic therapy and advanced images were available. CT chest availability has contribute for the so-called "stage migration" given the fact more patients in stage 4 disease are identified nowadays, than were unrecognized before. As chemotherapeutic regimens, and imaging modalities continue to improve, the survival rates should continue to approach those of osteosarcoma in the extremities. These results suggest that a combination of wide surgical margins and chemotherapy are necessary for decreasing local recurrence and improving survival.