



Management of Radiation-induced Sarcomas Following Breast Cancer in a Tertiary Referral Centre: a review of 25 cases

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Introduction. Radiation induced sarcomas are a rare and late complication of radiotherapy for breast carcinoma which often has poor prognosis. The incidence, histology, and management of patients with radiation induced sarcomas following treatment of breast cancer were reviewed in the current study.

Patients and methods. Twenty five patients referred to regional sarcoma unit between 1978 and 2009 were included in the study. They were retrospectively identified from the Royal Orthopaedic Hospital (Birmingham) sarcoma database.

Results. The breast cancer was diagnosed at the mean age of 51 years (range 33 – 79 years). Radiation induced sarcoma following the diagnosis and treatment of breast cancer occurred after a mean period of 156 months (range 48 -360 months). Seven sarcomas were located in the breast, 5 in the chest wall, 1 in the clavicle, 5 in the scapula, 2 in the humerus and 5 in the axilla. Histological examination identified 9 osteosarcomas, 6 angiosarcomas, 3 leiomyosarcomas, 4 spindle cell sarcoma and 3 non-specific sarcomas. Twenty one patients had wide local excision and various reconstructive procedures that included chest wall reconstruction, LD flap cover and, rarely, limb amputation. 73% had clear margins and 27% had marginal or involved margins. Local recurrence was frequent following the treatment of the radiation induced sarcoma and it was seen in 46% of the patients. The estimated five years survival following the diagnosis of the radiation induced sarcoma was 27%. The estimated 10 years survival for this cohort of patients following the diagnosis and treatment of breast cancer was 77% and 20 years survival was 47%.

Conclusion. Radiation induced sarcoma following breast cancer has high local recurrence rate and poor prognosis. Obtaining clear surgical margins with plastic and thoracic surgical reconstruction performed at a tertiary centre is required to treat this aggressive sarcoma. Long-term follow-up of patients treated with radiotherapy for breast cancer is therefore needed for early detection and effective treatment of these malignancies.