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Role of multimodality treatment approach in the management of solitary plasmacytoma : A Retrospective analysis

Abstract

Purpose: Solitary plasmacytoma (SP) is a rare presentation of plasma cell neoplasms. In contrast to multiple myeloma, long-term disease-free survival and cure is possible following local radiotherapy (RT), surgery and chemotherapy, particularly for soft tissue presentations. In this study, we attempt to identify factors that predict for local failure, progression to multiple myeloma, and overall survival (OS) in patients managed with local surgery, radiotherapy and/or chemotherapy, and effect of the radiation dose and chemotherapy on the outcome of plasmacytoma.

Methods and Materials: This study identified 30 patients treated at Northern Centre for Cancer Treatment and Sunderland Royal Hospital between 1982 and 2002. The median age was 55 years (range 33 to 81), with a male to female ratio of 1.73:1. All patients had biopsy-proven solitary plasmacytoma (bone: 23, soft tissue: 7). M-protein was abnormal in 10 patients (33%). All patients, except 2 who were treated with surgery alone, were treated with local radiotherapy (median dose 40Gy) and/or surgery, with 12 patients (40%) also receiving chemotherapy. Maximum tumour sizes were obtained in 8 patients, and pre-radiation ranged from 2.2cm to 13 cm.

Results: The 12-year overall survival, local recurrence free survival, and myeloma-free rates were 58%, 68%, and 31%, respectively. The local control rate was 83%.. The addition of chemotherapy did not show any difference in the local recurrence free survival or the myeloma free survival of the bone/soft tissue plasmacytoma. There was an advantage in favour of using dose of radiotherapy above 35Gy in achieving good local control though this was not statistically significant.

Conclusion: Solitary plasmacytomas are effectively treated with moderate-dose radiotherapy, although bone plasmacytoma have a high rate of recurrence as systemic myeloma. Combined chemotherapy and radiotherapy should be investigated in these high-risk patients to increase the local control rate and the cure rate, especially in bone plasmacytomas. As plasmacytomas are rare, it would be better to have a systemic review of all the patients audited in various institutions, at various time, to have increased statistical significance of studies. In addition, there is a urgent need to identify the role of chemotherapy in combination of radiotherapy in increasing the local recurrence free survival and myeloma free survival. Ideally, this should be done in multi-centre international randomized clinical trial due to the rarity of the tumour.

Author Keywords: Plasmacytoma; Multiple myeloma; Radiation therapy; Chemotherapy; Combined Treatment