

**Osteosarcoma of the Pelvis**

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**Abstract**

**Introduction:** Osteosarcoma of the pelvis, whilst rare, presents a particular challenge as tumours often present late, are often chondroid in origin and resistant to chemotherapy, can achieve a large size prior to presentation, and metastases are often present at diagnosis. The surgical management of some tumours is also a challenge as the proximity of vital structures often precludes wide margins at resection.

**Purpose:** The aim of this study was to review our own experience in the management of osteosarcoma of the pelvis and identify features predictive of poor outcome.

**Methods:** 125 patients, comprising 76 females and 49 males, were treated at a single institution between 1983 and 2014. The mean age was 41.9 years, the mean

follow up period was 2.3 years. 76 tumours were primary, predominantly chondroid and high grade, with the remainder secondary (radiation induced or Pagetic). 41 patients had metastatic disease at presentation. 55 patients (44%) underwent surgical treatment of which 34 (27.2%) were limb salvage. Survival analysis was by means of the Kaplan-Meier method with prognostic factors calculated by cox regression analysis.

**Results:** The overall survival at 5-years for all patients was 27.2%. For patients without metastases at diagnosis, the 5-year survival was 32.7%. For patients with tumours secondary to Paget's disease, the 5-year survival was 0%. Factors associated with a worse outcome were cell type, poor response to chemotherapy, secondary tumours and intralesional resection margins. 15 patients had progressive disease whilst receiving chemotherapy.

**Conclusion:** In this large single centre series, we have identified factors associated with a poor prognosis in osteosarcoma of the pelvis. In particular, the importance of surgical margins and the risk of disease progression during neo-adjuvant chemotherapy, perhaps the debate should return to the timing and nature of surgical intervention for patients at high risk of disease progression.