

**Poster Abstract: P5**

**Title:**

**A case of bone pain in a patient with previous thyroid cancer**

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**Background:**

The presentation of a patient with lytic bone lesions raises suspicions of primary bone cancer, multiple myeloma or metastatic disease from underlying breast cancer or thyroid cancer. Other aetiologies such as parathyroid cancer remain an unlikely possibility.

**Case Presentation:**

A 77 year old Caucasian female presented with a history of worsening heartburn and back pain. Six years prior to this she underwent a total thyroidectomy for a thyroid malignancy. She also gave a history of previous “parathyroid adenoma” resection. Clinical examination revealed epigastric tenderness abdominally and tenderness over her thoracic vertebrae. X-rays showed a lytic lesion in the thoracic spine (T10). Computerized tomography confirmed the lytic lesion and noted a 12x14mm mass in the right lower lobe of the lung.

Laboratory investigations revealed a low thyroglobulin. Serum adjusted-calcium 2,98mmol/L (2.20-2.50 mmol/L) and PTH 1589pg/ml (15-65pg/ml). Parathyroid 99Tc-sestaMIBI had no uptake. Venous sampling revealed elevated PTH in the azygous vein. Partial pneumonectomy and T10 vertebral resection were performed and histology confirmed metastatic parathyroid carcinoma, although she was eucalcaemic immediately post-operatively, the PTH remained elevated (555pg/ml). Gallium 68 dotatate PET/CT failed to show any uptake post operatively. Hypercalcaemia is currently managed with a calcium mimetic agent.

**Conclusion:**

The incidence and prevalence of parathyroid carcinoma remains low. It is responsible for less than 5% of all cases of primary hyperparathyroidism. Parathyroid malignancy is difficult to differentiate from a benign adenoma, however, the degree of hypercalcaemia, the presence of brown tumours or the degree of elevation of parathyroid levels is suggestive. Definitive diagnosis is made histologically. Parathyroid carcinoma usually occurs in primary hyperparathyroidism, but may occur in secondary or tertiary hyperparathyroidism. Similarly, parathyroid adenomas are associated with the development of thyroid cancers.

Cure is dependent on an “en bloc” resection of the entire tumour and restoration of eucalcaemia. Metastatic disease with resultant hypercalcaemia is difficult to manage. Chemotherapeutic agents lack efficacy. Bisphosphonates remain a treatment for hypercalcaemia. Calcium sensing receptor agonists, whilst efficacious remain costly.

Despite medical treatment post-surgery long term survival remains 40-86% at 5 years and in the event of a recurrence, survival is 0% at 5 years