

Massive thyroid Hurthle cell carcinoma invading laryngeal and tracheal cartilage

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Introduction

Hurthle cell carcinoma (HCC) is an uncommon subtype of differentiated thyroid cancer. The rate of extrathyroidal extension is reported at 15-20%. Airway involvement is rare.

Case Presentation

A 58-year-old woman presented to the ENT clinic with 6 months history of an enlarging anterior neck mass, worsening dyspnoea and biphasic inspiratory stridor at rest. Examination revealed a large mass with skin involvement and an associated right vocal cord palsy.

A CT scan revealed a 12 x 10 x 9 cm anterior neck mass with macroscopic invasion of the laryngeal and tracheal cartilages with deviation and compression of the proximal trachea and subglottic region. An ultrasound guided fine needle aspiration confirmed the mass to be recurrent Hurthle cell carcinoma. This was on the background of a prior subtotal thyroidectomy for stage III HCC 12 years prior at a different healthcare institution. She was morbidly obese with dyslipidaemia and a heavy smoker (30 pack year history). Her regular medications included thyroxine and she had no allergies.



Figure 1: Sagittal CT Neck demonstrating large anterior Hurthle cell tumour invading laryngeal and tracheal structures with airway narrowing

She underwent a total laryngectomy, wide local excision of the tumour mass and free flap reconstruction of the surgical defect.

Surgical histopathology revealed poorly differentiated carcinoma but with clear surgical margins. She was offered adjuvant radiotherapy and commencement on a tyrosine kinase inhibitor, however declined. She remains in remission living independently in the community.



Figure 2: Axial CT Neck demonstrating anterior Hurthle cell tumour invading airway structures causing marked subglottic stenosis

Discussion

Laryngeal and tracheal cartilaginous invasion by HCC is exceedingly rare; there are only 5 reported cases in the international literature and this is the first reported case outside of the United States^{1,2}. Radical surgical resection is first line treatment of HCC of the thyroid; laryngeal or tracheal involvement has important implications for the extent of surgical resection and the associated morbidity.

References

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2. Sloan DA, Vasconez HC, Weeks JA. Mediastinal dissection and reconstruction for recurrent Hurthle cell carcinoma of the thyroid. *Head Neck*. 1994;16(1):64-71.

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