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Thyroid Cancer and Acromegaly: A Case Report

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Introduction

Acromegaly is a rare disease presentation in the general population. The relationship between thyroid cancer and acromegaly may seem rare however there is evidence showing a higher incidence of thyroid cancer in acromegalic patients. It would be important to consider the potential for thyroid disease in these patients. We present an interesting case of a man with history of thyroid cancer and a new diagnosis of acromegaly.

Case Presentation

A 31 year old male with history of papillary thyroid cancer (tall cell variant) presents with endorsement of weight gain, increased hand and shoe size, hyperhidrosis, and decreased physical performance. Family history is notable for diabetes on his father's side. Exam was notable for coarse facial features, macroglossia, frontal bossing, hypertrophic thyroideectomy scar, large doughy hands, and enlarged digits. Laboratory results revealed insulin like growth factor-1 11044 ng/mL (88-246), growth hormone 34.2 ng/mL (0.0-10.0), thyrotropin 0.641 mIU/mL (0.27-4.20), and free thyroxine 1.960 ng/dL (0.890-1.760). Pituitary MRI revealed a 1.4 cm × 1.2 cm × 0.8 cm ovoid hypoenhancing sellar mass (Figures 1A and 1B).

Discussion

Clinical features, biochemical testing, and imaging reveal a pituitary macro adenoma confirming a diagnosis of acromegaly. OGTT was not performed. Prolactin, luteinizing hormone, follicle stimulating hormone, cortisol, and thyroid function tests were normal. Patient underwent a transphenoidal hypophysectomy without complications. Pathology

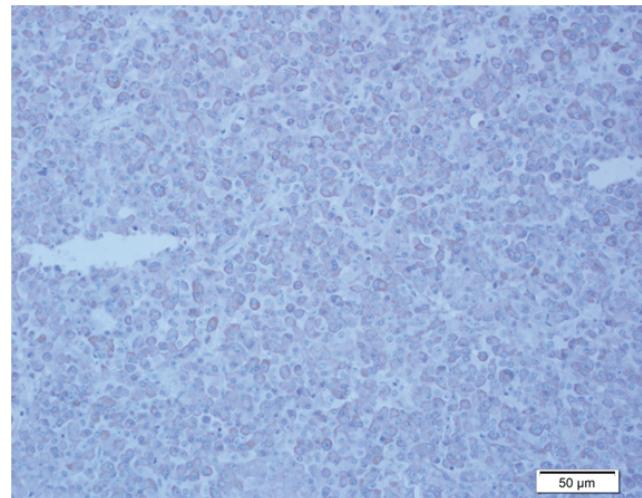


Figure 2: Pathology showed a plurihormonal adenoma with positive immunostaining for growth hormone in a significant number of cells, as well as diffuse staining for chromogranin and synaptophysin.

showed a plurihormonal adenoma with positive immunostaining for growth hormone in a significant number of cells, as well as diffuse staining for chromogranin and synaptophysin (Figure 2).

Acromegaly is a rare disease caused by increased GH secretion and is associated with greater risk of developing both benign and malignant tumors. The clinical diagnosis is often delayed because of the slow progression of the acromegalic signs. Recent studies reveal an increase in cancer in patients with a known diagnosis of acromegaly which leads to the assumption that cancers are typically diagnosed later in these patients. Thyroid cancer is the most common malignancy diagnosed in acromegalic patients [1-3] and malignancies are the cause of death in 15% [2]. Acromegaly is also known to be associated with diffuse and nodular goiters. Thyroid cells express the IGF-1 receptor and a TSH/IGF-1 interaction has been demonstrated to have a synergistic effect in thyroid cell growth. Recent studies have found an increased prevalence of nontoxic nodular goiter and a slightly or moderately increased prevalence of thyroid carcinoma. The assumed pathogenesis in patients with acromegaly is that thyroid carcinoma develops following a sustained exposure to high serum IGF-1 levels [3].

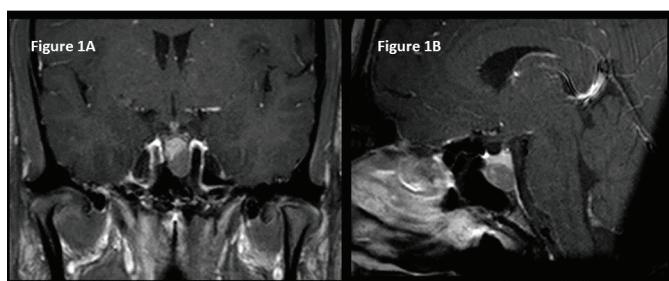


Figure 1: A and B) Pituitary MRI revealed a 1.4 cm × 1.2 cm × 0.8 cm ovoid hypoenhancing sellar mass.

The fact that acromegaly appears to be a risk factor for developing malignancy may have led to improved surveillance for cancer in these patients. This case demonstrates that it is important to be aware of the association of various cancers, especially thyroid cancer, with acromegaly.

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