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## Thyroid

### ODP452

#### *A Case of Thymic Hyperplasia in Graves' Disease*

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**Introduction:** We report a case of a patient with Graves' Disease (GD) associated with thymic hyperplasia (TH) which regressed with treatment of GD. The association between these two conditions is under recognized. The causative mechanisms between TH associated with GD are still under investigation. **Case**

**Description:** A 39-year-old male patient presented with hemoptysis, dyspnea, palpitations, tremors and unintentional weight loss. His TSH was suppressed to  $< 0.005$  and free T4 was elevated to 5.51. As part of his work up a CT scan was performed which revealed a prominent anterior mediastinal mass. He was started on Methimazole and Atenolol. Lab work confirming positive TSI and TRAB antibodies consistent with Graves' disease. At follow up, he opted for radioactive iodine ablation therapy with 20mCi. He had failure of therapy and was resumed on Methimazole. He ultimately underwent total thyroidectomy with subsequent thyroid hormone replacement with Levothyroxine 150mcg daily. His thyroid function tests normalized, and his symptoms resolved. A repeat CT thorax was performed which showed complete resolution of his mediastinal mass, consistent with GD associated TH.

**Conclusions:** GD associated TH was first described in 1914. Data supports TSH receptor antibody mediated thymic enlargement<sup>1</sup>. TH can be classified in two morphological types, lymphoid hyperplasia unassociated with thymic enlargement and true TH in which an increase in thymic volume is evident<sup>2</sup>. Thymic cortical tissue expansion seems to be due to a hyperthyroid state involving increased levels of thymulin, a protein involved in lymphocyte differentiation whereas lymphoid hyperplasia correlates with the immune process in GD<sup>2</sup>. Antithyroid drug therapy reduces circulating thyroid hormone levels causing a generalized immunosuppressive effect. This reduces hyperplasia of lymphatic organs including the thymus<sup>3</sup>. There are no current guidelines for the management and surveillance of thymic hyperplasia in GD as the course and timeline of regression of TH can vary widely. Thymic biopsies are performed frequently to rule out malignancy, however, it is important to raise awareness that GD associated TH has a benign course and generally resolves with management of the underlying GD<sup>3</sup>. It is imperative to avoid unnecessary invasive procedures and their subsequent complications in such GD patients. References: 1] Dalla Costa M (2014) Thymic hyperplasia in patients with Graves' disease. *J Endocrinol invest* 37: 1175-1179. 2] Nakamura S (2012) Thymic enlargement in two cases of Graves' disease. *Internal Med* 51: 673-674. 3] Nakamura T et al (2004) A case of thymic enlargement in hyperthyroidism in a young woman. *Thyroid* 14: 307-310.

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