SARCOIDOSIS OF THE THYROID GLAND

Granulomatous Lesions and Thyroid Function

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Sarcoidosis of the thyroid gland usually causes hypothyroidism although it may also cause euthyroid thyroiditis, and it may occur in patients with hyperthyroidism.

What is Sarcoidosis of the Thyroid Gland?

Sarcoidosis of the thyroid gland is a rare disorder first reported in 1938 that primarily affects young and middle-aged females although both males and females of all ages may be affected. Sarcoidosis of the thyroid gland usually results in hypothyroidism because of fibrosis interfering with thyroid function. However, sarcoidosis of the thyroid may cause a euthyroid (normal thyroid function) form of thyroiditis and goiter. And occasionally sarcoidosis of the thyroid gland occurs in association with Graves’ disease and less commonly in patients with toxic multinodular goiter. In addition sarcoid lesions may occur as cold thyroid nodules and be mistaken for thyroid cancer.

Development of Sarcoidosis

Sarcoidosis has been found to be associated with T-cell activation. Consequently, sarcoidosis is suspected of developing as an inflammatory response to a single provocation, which can be another disease. For instance, 5 percent of all patients with Hodgkin’s disease are found to have evidence of liver sarcoidosis, which is suspected of arising as a response to the Hodgkin’s neoplasm.

Similarly, sarcoidosis of the thyroid gland may develop in response to an established thyroid disorder including Graves’ disease, nodular goiter, and thyroid cancer. Patients with Graves’ disease may also have concomitant conditions of sarcoidosis affecting the lungs. Patients with systemic sarcoidosis may also develop sarcoid lesions in various organs including the thyroid gland.

Symptoms and Signs

Sarcoidosis of the thyroid gland usually results in hypothyroidism due to fibrosis of thyroid tissue or interference with the function of normal thyroid cells. However, when sarcoidosis occurs in patients with hyperthyroidism caused by Graves’ disease or toxic multinodular goiter, the hyperthyroidism is often resistant to treatment with I131 ablation or anti-thyroid drugs. In cases of chronic sarcoidosis, skin lesions, enlarged lymph nodes (especially in the chest cavity), enlarged spleen, enlarged liver, uveitis, cardiac symptoms, and arthritis may occur. Although thyroid sarcoidosis is generally painless, there are isolated reports of painful lesions occurring.
Sarcoidosis frequently causes an elevation of calcium levels in both the blood and urine. Sarcoid lesions are also known to cause elevated levels of circulating vitamin D, which may be seasonal. Consequently, conditions of both hypoparathyroidism and hyperparathyroidism may occur due to imbalances in calcium metabolism.

In sarcoidosis, the white blood cell count may be low and on occasion the uric acid level and the blood and urine calcium levels may be elevated. Sarcoid granulomas present in the thyroid gland seen on imaging tests may be mistakenly identified as thyroid neoplasms especially when they’re identified as cold nodules.

Proptosis, orbital swelling and other symptoms resembling thyroid eye disease may occur as a result of systemic sarcoidosis affecting the eye rather than as a complication of sarcoidosis of the thyroid gland.

**Treatment**

In patients with sarcoidosis of the thyroid gland occurring in patients with hyperthyroidism, resistance to anti-thyroid drugs and irradiation is common. Patients with hyperthyroidism who show a poor response to these treatments should be evaluated for thyroid sarcoidosis. In cases where thyroidectomy surgery was used to treat hyperthyroidism resistant to other treatments, sarcoidosis of the thyroid gland has been reported as an incidental finding.

Corticosteroids are used to reduce symptoms in sarcoidosis of the thyroid gland although symptoms generally resume when corticosteroid treatment is stopped, making surgical removal a better option.

**Resources:**


Rodriguez MC, Rani D and Faas H, Unusual clinical course of Graves’ thyrotoxicosis and concomitant sarcoidosis: case report and review of literature, Endocrine Practice, Mar-Apr 2007; 13(2); 159-163.
