

*Review*

## Brief review of sarcoidosis of the thyroid gland

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**Sarcoidosis of the thyroid gland is rare. It is rarely reported in the medical literature. In this review article we go over various presentation of sarcoidosis of the thyroid gland, ways to diagnose it, and treatment options.**

**Key words:** Sarcoidosis, thyroid gland, hypothyroidism, Graves' disease.

### SARCOIDOSIS OF THE THYROID GLAND

Sarcoidosis is a multisystem, chronic disease of unknown etiology, which is characterized by non-caseating granulomas (Sharma and Izumi, 1990; Hunninghake et al., 1980; Hunninghake and Crystal, 1981). Sarcoidosis involving the thyroid gland is rare (Sharma and Izumi, 1990; Winnacker et al., 1968; Harach and Williams, 1990), with first case described in 1938 (Spencer and Warren, 1938). Incidences could be up to 4% in some autopsy series (Bacci et al., 1991; Maycock et al., 1963). Women are more affected than men.

Patient with sarcoidosis of the thyroid gland can pre-sent hyperthyroidism (Papi et al., 2006), hypothyroidism (Winnacker et al., 1968; Antonelli et al., 2006), subclinical hyperthyroidism (Antonelli et al., 2006), and subclinical hypothyroidism (Antonelli et al., 2006). Hypothyroidism is caused by infiltration by epithelioid granulomas (Brun et al., 1959). Patient also might present goiter (Papi et al., 2006; Antonelli et al., 2006; Porter et al., 2003). Thyroid sarcoidosis mimicking malignancy has also been reported (Mizukami et al., 1994; Weiss et al., 1989).

An autoimmune phenomenon was mentioned before in patients with sarcoidosis (Hunninghake et al., 1980; Hunninghake and Crystal, 1981). Anti-thyroid antibodies percentage ranged from 1.3 to 54.5% in patients with thyroid sarcoidosis in different studies (Nakamura et al., 1997; Hugues et al., 1997). Some studies showed that antithyroglobulin antibodies were more common than TPO antibodies (Rubinstein et al., 1985; Ilias et al., 1998), while other studies showed the prevalence of TPO antibodies to be higher (Nakamura et al., 1997; Papadopoulos et al., 1996).

Graves' disease and sarcoidosis have been associated with HLA gene (Papi et al., 2006). HLA-B8 associated with acute sarcoidosis was reported by Brewerton et al. (1977). Patients with thyroid sarcoidosis may have normal thyroid function test, hypothyroid picture (Winnacker et al., 1968), or hyperthyroid picture. Patients with sarcoidosis developing hypothyroidism, the U/S of the thyroid gland shows thyroid hypoechoic pattern and small thyroid volume (Antonelli et al., 2006).

Histology can help in making the diagnosis (Gentilucci et al., 2004), which shows non-caseating granuloma (Gentilucci et al., 2004; Karlisch et al., 1970). Angiotensin converting enzyme level, though its sensitivity and specificity for sarcoidosis is not perfect, can help to follow up the disease (Baudin, 2005).

Treatment option depends on clinical presentation. Patient with thyroid sarcoidosis presenting hyperthyroidism could be treated with anti-thyroid medication or radioactive iodine treatment, but it is not necessarily successful and patient might require surgery (Rodriguez et al., 2007). Thyroid replacement is a necessary therapy for patients with hypothyroidism. A steroid has been used as a treatment option (Gentilucci et al., 2004).

### Conclusion

Sarcoidosis of the thyroid gland is very rare, and might have various clinical presentations. There is an auto-immune element, with thyroid U/S showing hypoechoic pattern and small thyroid volume. Histological examinations help in making the diagnosis. Treatment depends on clinical presentation.

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