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Riedel's thyroiditis — difficulties in differentiating from thyroid cancer

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A hard, palpable mass localized in the perithyroidal soft tissue is often thought to have a cancerous process. Along with dysphagia or neck pain, it causes the patient and physician concern [1]. A correct diagnosis is important, to differentiate this disease from another with an identical clinical manifestation: Riedel's thyroiditis. In Riedel's thyroiditis fibrosclerotic organ manifestations can either be a part of IgG4-related disease or solely be located in the thyroid and adjacent tissues, and elevation of serum IgG4 can be found [2].

A 67-year-old woman with nodular goitre was referred to the clinic as part of Rapid Oncological Diagnostics because of suspected thyroid cancer. The patient reported swelling in the lower neck with a rapid increase in size in the past 6 months. It was associated with pain, dysphagia, or hoarseness. There were no other symptoms of inflammation, such as fever, malaise, or myalgias. She underwent a strumectomy 12 years prior, for a nodular goitre. Due to pain and elevated inflammatory markers, the patient has been treated on an outpatient basis with clavulanic acid with amoxicillin, cefuroxime, and clindamycin.

Physical examination revealed an enlarged thyroid left lobe (Fig. 1). It was hard in consistency, probably arising from the thyroid gland and involved left lobe and isthmus. There were no palpable lymph nodes in the neck or any other part of the body. Laboratory tests showed elevation of CRP and OB levels. TSH, fT3, and fT4 levels were in standard range on actually supplementation (L-tyroxine 100 ug per day), also elevated anti-thyreoglobulin antibodies (aTG) and anti-peroxidase antibodies (aTPO) were observed (Tab. 1).

Upon ultrasound of the thyroid, the right lobe of the gland was found to measure 13.1 × 14.2 × 45 mm, and the left lobe 39.8 × 36.5 × 57.4 mm. The volume of the gland was 45.8 mL, with heterogeneous, reduced echogenicity, reduced vascularization, and irregular boundaries. The infiltrate covered large vessels of the neck. The trachea was compressed by a goitre and had narrowed lumen with lateral dimension of 10 mm (Fig. 2A). CT revealed a goitre reaching the upper mediastinum and infiltrating left common carotid

Figure 1. *Enlarged thyroid left lobe*

Table 1. ***Laboratory tests results***

Parameters	Results	Normal range
TSH [mIU/L]	1.67	0.27–4.2
fT3 [pmol/L]	4.1	3.1–6.8
fT4 [pmol/L]	14.3	11.2–22
anti-TPO [U/mL]	450	< 150
anti-TG [U/mL]	64	< 15
TRAb [IU/L]	0.98	00–1.75
IgG4 [mg/dL]	186	> 135
CRP [mg/L]	18.9	< 10
OB [mm/1h]	80	< 10

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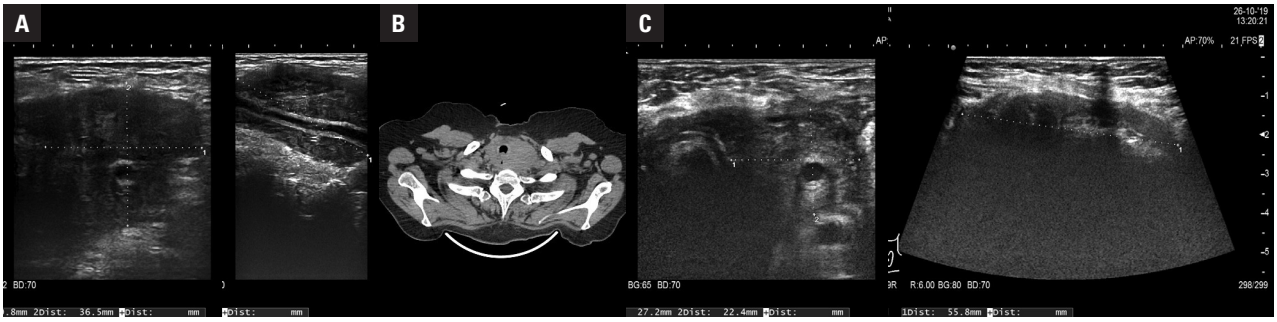

Figure 2A. *The trachea compressed by a goitre — narrowed lumen with lateral dimension of 10 mm.* ***B.*** *Numerous cervical lymph nodes with short axes up to 8 mm present in the thyroid area.* ***C.*** *Thyroid gland volume after 6 weeks — 20.2 mL*

artery. The oesophagus was attached to the infiltrate from behind. Numerous cervical lymph nodes with short axes up to 8 mm were present in the thyroid area (Fig. 2B). Given the significant suspicion of malignancy, thyroid fine needle aspiration (FNA) was performed and showed the presence of neutrophils and histiocytes, and small lymphocytes with some plasma cells without suspected malignant cells. This finding was suggestive of an exacerbated chronic inflammatory process. No bacterial growth was found on the thyroid FNA material and blood culture. Based on the clinical picture and results, Riedel's thyroiditis was suspected. The IgG4 level was found to be elevated. No fibrosis in other localisation was observed. The final diagnosis of Riedel's thyroiditis was made. The patient refused to undergo surgery. Treatment with prednisolone 60 mg per day (1 mg/kg) was started. In control ultrasound of the thyroid after 6 weeks, the right lobe of the gland was found to measure 12 × 12.3 × 43.8 mm, and the left lobe 27.2 × 22.5 × 55.8 mm. The volume of the gland was 20.2 mL (Fig. 2C). The patient reported reduced pain and dysphagia.

Diagnosis of Riedel's goitre is very difficult because of the uncharacteristic clinical symptoms and its rare occurrence. Thyroid cancer and bacterial thyroiditis were suspected in this patient. Not only fine needle aspiration results, clinical picture, or imaging tests, but also the IgG4 concentration in serum are helpful in differentiating Riedel's thyroiditis from the proliferative or infectious process. Fibrosis of the retroperitoneal space, liver, kidneys, and pancreas should be excluded, taking into account possible manifestations of the IgG4-related disease, which also include thyroiditis. There is no agreed standard treatment for Riedel's thyroiditis. Surgical intervention is indicated for patients with compressive symptoms, suspicious malignancy, and failure of medical management [3]. Treatment, although not supported by controlled trials is considered the treatment of choice to reverse and arrest the fibrotic process. High-dose glucocorticoids are usually the first step in the medical management of the patient with an established diagnosis of Riedel's thyroiditis, and they cause a dramatic improvement in symptoms [4]. The second-line agent, which has been used successfully in patients who relapse on glucocorticoids, is tamoxifen. Case reports have also suggested that the combination of mycophenolate mofetil with prednisolone can be used in glucocorticoid- and tamoxifen- resistant patients In other instances of IgG4-related disease and resistance to glucocorticoids and tamoxifen, rituximab has been used, with reduction of inflammation symptoms [2]

Informed consent

Informed consent was obtained from the patient for the publication of this article.

Conflict of interest

None declared.

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