

# RIEDEL'S THYROIDITIS

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## INTRODUCTION

Enlargement of thyroid gland can be due to many causes including such innocuous entities as puberty goiter and potentially fatal malignant tumors. The enlargement may be mild or huge, depending upon the underlying pathology and duration of the disease process. We present a case of thyroid enlargement, which turned out to be due to the rare entity of Riedel's thyroiditis.

## CASE REPORT

A 44 years old female presented to the surgical outpatients department with a large swelling in the front of the neck. The swelling had appeared about six years before and had gradually increased in size. She developed difficulty in breathing especially when she needed to walk briskly. This problem increased markedly over the previous six months and at the time of presentation she could not even sleep, due to difficulty in breathing. She also developed difficulty in swallowing three months prior to reporting to surgeon. She also complained of lethargy, fatigue, constipation and intolerance to cold.

Her investigations showed a hemoglobin of 10 gm / dl, free T4 of 6.6 mmol / L (normal range: 11.5 to 23 mmol / L) and TSH level was more than 50 IU / ml (normal range: 0.2 to 4.0 IU / ml). Radioisotope thyroid scan showed multiple areas of increased and reduced tracer concentration in both the lobes of enlarged thyroid gland. Background activity appeared reduced. The findings gave the impression of multinodular goiter. Her chest x-ray showed a large soft tissue mass in the neck overshadowing the apices of both lungs but they were normal

otherwise and cardiac size was within normal limits. X-ray of neck showed a large soft tissue mass in anterior part of neck extending downwards behind the sternum and causing tracheal narrowing. Mild spondylotic changes were also seen in cervical spine. Her ECG was normal.

After pre-anesthesia assessment she was declared ASA II. Risk of anesthesia and surgery were explained to the patient and her husband in detail. After their consent patient was operated upon.

Sharp dissection had to be done, to separate the skin from the underlying musculo-glandular tissues in contrast to the usual blunt dissection required in other cases of thyroidectomy. Thyroid gland was adherent to the strap muscles and appeared fibrosed. The adhesions extended retrosternally also. No plane of cleavage was discernible between the muscles and thyroid. The fibrous transformation of the thyroid gland was extending to the underlying superior and inferior thyroid arteries. The common carotid arteries looked like pulsating poorly yielding white thick cords.

There was no distinction between the thyroid tissue & parathyroid glands. Retrosternal extension of the gland was retrieved by finger dissection, and then, after ligating & dividing the blood supply, the gland was removed. Trachea was very soft and friable. The wound was closed in layers after putting suction drains bilaterally. Both vocal cords were mobile post-operatively. The mobility was confirmed after removing the endotracheal tube. After about fifteen minutes the patient developed respiratory distress due to collapse of trachea which was relieved by tracheostomy. Patient was then shifted to main ITC.

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On third post-operative day the patient developed an episode of carpopedal spasm which was relieved by injection of 20 ml 10% solution of Calcium Gluconate given slowly intravenously. She developed another episode of accoucheur's hand after nine days which was treated similarly. Her Serum calcium and parathormone levels were well within normal limits. Patient was advised to take two tablets of Levothyroxine daily.

Histopathology of thyroid gland revealed atrophic follicles surrounded by marked chronic inflammation and dense fibrosis. Fibrosis was extending into the periglandular tissue. Opinion of Riedel's thyroiditis was given. Repeat TSH levels after six months were normal (3.4 uIU/ml) and the patient is asymptomatic after six months of follow-up.

## DISCUSSION

Riedel's thyroiditis is an exceptionally rare condition of unknown etiology in which there is extensive infiltration of thyroid and surrounding structures with fibrous tissue [1]. Patient usually presents with a hard woody mass in the thyroid region with marked fibrosis and chronic inflammation in and around the gland [2]. Women are 4 times more likely to be affected than men, and it most commonly occurs between 30-50 years of age [3]. Tracheal compression may be present leading to difficulty in breathing [4], as was the case in our patient. This is not a form of thyroid cancer but the presentation is similar and the differentiation can usually only be made by thyroid biopsy and histology [1]. Thyroid function tests usually show a hypothyroid picture. High serum thyroid antibody concentrations are present in up to 67% of patients, but it is unclear whether the antibodies are a cause or effect of fibrotic thyroid destruction [5]. (Serological tests for antibodies were not carried out in our patient). Radioisotope imaging may show a multinodular goiter or a hypothyroid picture, depending upon the extent of fibrotic destruction of the gland [6]. In fibrotic forms of lymphocytic thyroiditis and Riedel's

thyroiditis, the predominance of lymphocytes and fibrosis is helpful in establishing the diagnosis. In addition, identification of other fibrotic sites, such as a retroperitoneal site, helps in diagnosing Riedel's thyroiditis [7]. Special care has to be taken in operating upon these patients as the fibrosis is very marked and it is difficult to separate the thyroid gland from the surrounding muscles and other structures [4]. The trachea is quite friable and tracheomalacia is usually present in these cases, leading to tracheal collapse, which may necessitate tracheostomy. Planes of cleavage are usually not definable between different tissues and the surgeon has to resort to sharp dissection most of the times [4].

Post-operatively, one has to be very vigilant in care of the patients having undergone thyroid surgery for Riedel's thyroiditis. Tracheostomy set must be present by the bed-side of the patient because tracheostomy may have to be done at any time in the post-operative period.

If Riedel's thyroiditis is diagnosed on FNA biopsy medical treatment can be quite helpful. Tamoxifen has proved to be the most effective drug therapy available for managing Riedel's thyroiditis [8]. Tamoxifen's effectiveness may be caused by a mechanism by which it stimulates the release of transforming growth factor-beta, which may inhibit the fibroblastic proliferation characteristic of Riedel's thyroiditis [8].

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