

## Case Report

# Riedel's Thyroiditis: Misdiagnosed Case on Fine Needle Aspiration Cytology- a lesson to learn!

Mubashira Hashmi and Sanaullah Gazozai

Department of Pathology, Basic Medical Sciences Institute  
Jinnah Postgraduate Medical College Karachi

**Abstract:** Riedel's thyroiditis is a rare form of chronic thyroiditis, in which fibro inflammatory process destroys the thyroid partially or completely. It involves the surrounding tissue like skeletal muscles, vessels, trachea, esophagus and upper mediastinum. These "infiltrative features" compounded with some inflammatory atypia may lead to mistaken diagnosis of malignancy! Here we describe such a misdiagnosed case. Final diagnosis of Riedel's thyroiditis was made on histopathological examination of the sub-total thyroidectomy specimen. We suggest that if a patient is presenting with the features of thyroid malignancy, Riedel's thyroiditis should be kept in mind as a differential diagnosis.

**Key Words:** Riedel's thyroiditis, Thyroiditis, Fine Needle Aspiration Cytology

## Case report

A 45-year-old woman came to outpatient department with the history of difficulty in breathing especially while lying down since one and half year. On physical examination she had a 5x5 cm stony hard; slightly moveable with deglutition central swelling in the center of the neck. She said that she had some weight loss and felt irritable! On examination she looked pale and anxious with high blood pressure.

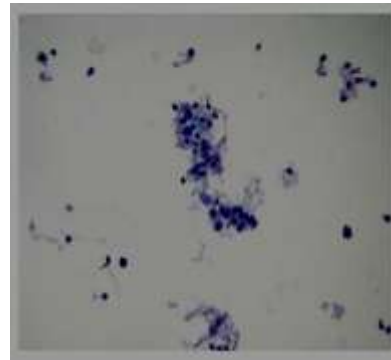
Total thyroxin (T4) was 3.0 microgram/dl (4.8-13 µgm/dl) and TSH level was 9.0mlU/L (0.3-5mlU/L). The complete blood count showed hemoglobin of 9 gm/dl with microcytic and hypochromic erythrocytes!

Thyroid technetium scan showed enlargement of both lobes of thyroid gland with absent activity, with the impression of cold nodular goiter.

Fine Needle Aspiration Cytology (FNAC) was performed. The smears revealed follicular cells as well as atypical spindly cells containing large atypical nuclei. There were a few lymphocytes in bloody background. Combination of history, physical examination, thyroids scan report and then FNAC report was highly suggestive of malignancy. (Fig.1).

Therefore excisional biopsy was advised. Subtotal thyroidectomy specimen was sent for histopathological evaluation. On gross examination it was an irregular, hard and whitish gray thyroid tissue comprised of 5x5

& 4x5cm right & and left lobes



**Fig: 1** FNAC shows pleomorphic cell with increased Nuclear/Cytoplasmic ratio (PAP stain X 100)



**Fig: 2** Gross examination showed a firm hard tissue, cut surface revealing grayish white area of fibrosis (arrow).

Correspondence: Mubashira Hashmi  
writetomubashira@yahoo.com

The sections revealed dense hyalinated fibrosis with multifocal lymphocytic, plasma cells and histiocytic infiltrates. Areas of involved striated muscles were also noticed. (Fig 3) & (Fig 4). A few areas showed remnants of thyroid tissue admixed with lymphocytic infiltrate (Fig: 5).

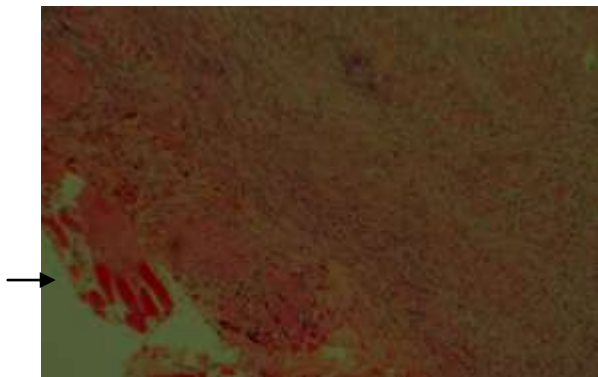


Fig: 3 Section shows striated muscles involvement (H&E x 40)

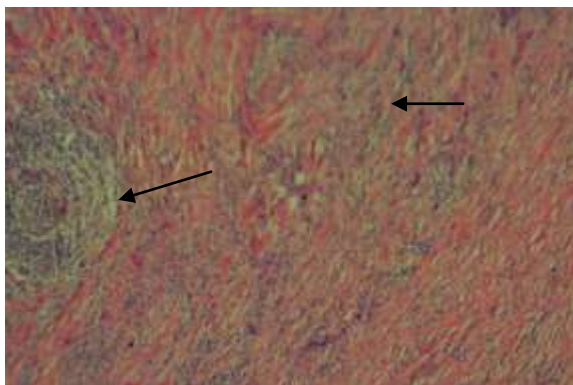


Fig: 4 Section shows dense fibrous tissue with foci of lymphoplasmacytic aggregates (H&E x100).

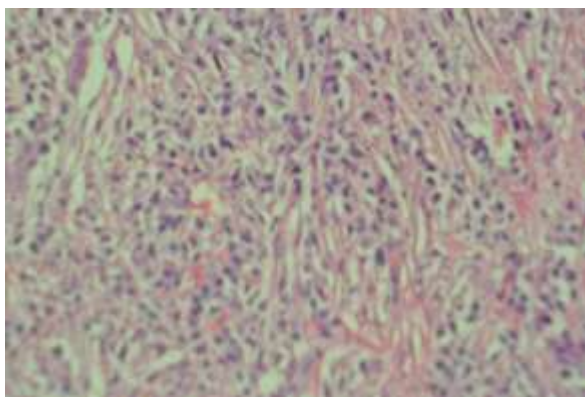


Fig: 5 Remnants of thyroid tissue (H&E x400).

## Discussion

Reidel's thyroiditis is a rare chronic inflammatory disease of unknown etiology has been reported in 0.05% of thyroid surgery<sup>1</sup>. It is also called Wood's thyroiditis. It was first described by Bernhard Reidel in 1896<sup>2</sup> as a fibro inflammatory process of thyroid. Women of 30-50 year of age are more prone to this disease than men.<sup>3</sup> In this case of Reidel's thyroiditis fibro inflammatory process involved the surrounding tissue, which led to misdiagnosis on FNAC.

There are questions about the nature of Reidel's thyroiditis and whether it represents a generalized or a local phenomenon confined to thyroid only. The loss of appetite, weight loss and increased blood pressure could be presenting feature of generalized fibrosis of blood vessels. Woolner et al has collected 20 cases of Reidel's thyroiditis in which two cases had retroperitoneal fibrosis<sup>4</sup>. Riedel's disease should be differentiated from other forms of thyroiditis such as fibrosing variant of Hashimoto's thyroiditis, subacute thyroiditis, or granulomatous thyroiditis and from malignancy with which it can be confused both clinically and cytologically.<sup>5</sup> Pitfalls in cytological interpretation in Reidel's thyroiditis are discussed by several workers.<sup>6,7,8</sup>

The diagnosis of Riedel's thyroiditis is not possible with FNAC and the dense fibrosis prevents adequate aspiration of the gland. Furthermore, the fibrotic reaction can be difficult to distinguish from desmoplasia associated with undifferentiated carcinoma.<sup>9</sup>

In conclusion, we are suggesting that if patient is presenting with firm fixed enlarged goiter, hypothyroidism, thyroid scan showing cold nodule and even FNAC giving an impression of malignancy, Riedel's thyroiditis should be kept in differential diagnosis.

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