



Riedel's Thyroiditis, A Rare Thyroid Inflammatory Disease



Addis Yeshitila Kidane^{1*} and Manel Hassen²

¹Assistance professor general surgery, of Department of General Surgery, Hakim Gizaw Hospital, Asrat Woldeyes Health science, Debre Berhan University, Debre Berhan, Ethiopia

²Assistance prof. of pathology, Department of pathology, Addis Abeba University, Addis Abeba, Ethiopia

Received: August 23, 2024; Published: September 11, 2024

*Corresponding author: Addis Yeshitila Kidane, Assistance professor general surgery, of Department of General Surgery, Hakim Gizaw Hospital, Asrat Woldeyes Health science, Debre Berhan University, Debre Berhan, Ethiopia.

Abstract

Riedel's thyroiditis is a rare form of fibrotic disease of the thyroid gland which is benign but with local infiltration characters. So, this fibrosis will replace or distract the normal tissue giving its physical character of hardness or woody consistency in physical examination. The disease will manifest hypothyroidism, local or neck pain, dysphagia or hoarseness due to local infiltration or mass effect on the oesophagus or trachea.

The clinical diagnosis and management are both challenging. The treatment is both medical and surgical, depends on the symptoms. My main recommendations in the management of this disease are that it should be symptom based and should involve multidisciplinary care with the active involvement of the patient and the family as well.

Case report

A 40- years- old female patient presented with neck swelling of 3-years with pain localized to neck and compression symptoms of the respiratory or air way. The patient does not complain hot intolerance or palpitation. She has no weight loss. The swelling is diffuse involving both lobes with no skin changes. On palpation it is hard but mobile with swallowing. The patient had workup of thyroid function test; neck ultrasound suggestive of Riedel's thyroiditis r/o Hashimoto thyroiditis. The FNAC result concludes with Riedel's thyroiditis. The patient had two years of follow-up, but symptom worsened and undergone surgery after informed consent was taken for possible high risk of complication. Then after total thyroidectomy, all tissue sends for biopsy. The result come with Riedels thyroiditis. And patient had slight voice hoarsening and initiated on oral steroid and thyroxine treatment as supplementary.

Conclusion

Riedel's thyroiditis is rare fibrotic disease of the thyroid gland with local infiltration and hypothyroidism. The main treatment is medical which is steroidal treatment surgery reserved with symptoms management like mass effects on surrounding structures.

Keywords: Riedels thyroiditis; Fibrosis; Hypothyroidism; Hashimoto

Abbreviations: RT: Riedel Thyroiditis

Introduction

Riedels thyroiditis is one of the rare forms of thyroid pathology (0.6 to 1.06 per 100.000 population) which causes chronic fibrosis to change of the tissue [1]. This firotic change will not be limited to the glad tissue rather will involve the adjacent tissues of other structures like trachea esophagus ad retro orbital site to cause proptosis like a clinical feature of grave disease [2]. studies vary on sex distribution or preference but most report female predominance like other thyroid conditions with 3.5 to 1 ratio. The age distribution is between 30th to 50th decades. The manifestations are neck pain, neck swelling, symptoms of hypothyroidism like cold intolerance. clinical suspicion is very important due to its rarity and suspicious should be high if the

consistency is hard as woody on physical examination [3]. The confirmed diagnosis is done after tissue biopsy [4].

Case report

A-40-years old lady came with neck swelling of 2-years duration. she complained tightening of neck area with cold intolerance but no neck pain, difficulty of swallowing or dysnea. she had no weight loss menstrual irregularity. up on physical examination her pulse rate was 56. she had pink conjunctiva, 10 by 6cm sized neck mass which is hard fixed with skin but slightly move side to side and upward during swallowing. no cervical lyphadenopathy. The patient laboratory (complete blood

count, hematocrit, thyroid function is summarized table. the post-surgical thyroid tissue histopathological both the image is included (Figure 1A, B and C). the pathology report is also putted under the figure.

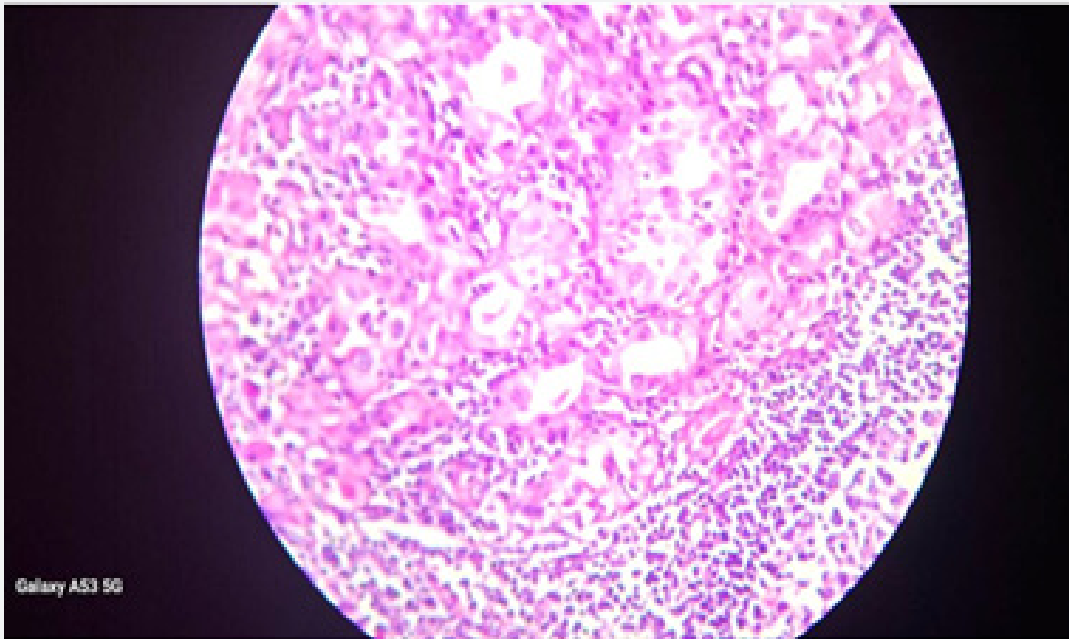


Figure 1A: High power view of the surgical pathology specimen showing extensive bands of fibrosis with plasma cells and lymphocytic infiltration consistent with Riedel's Thyroiditis (Hematoxylin-Eosin stain) Lymphoplasmacytic infiltrate.

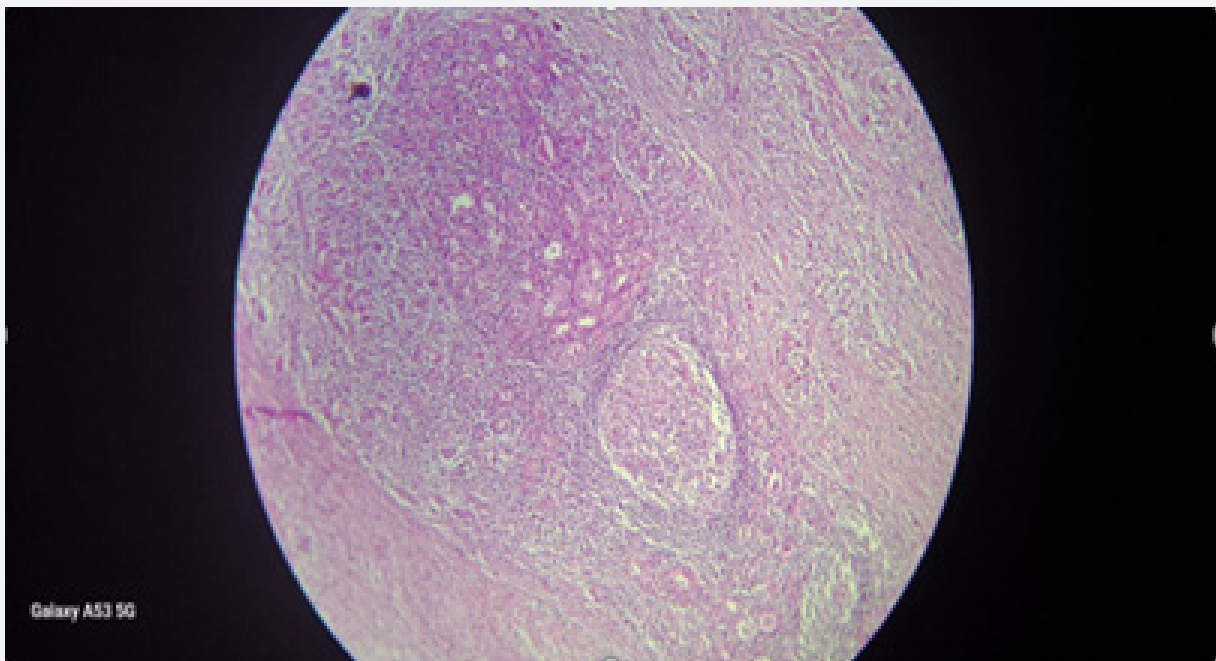


Figure 1B: Fibrosis and inflammation.

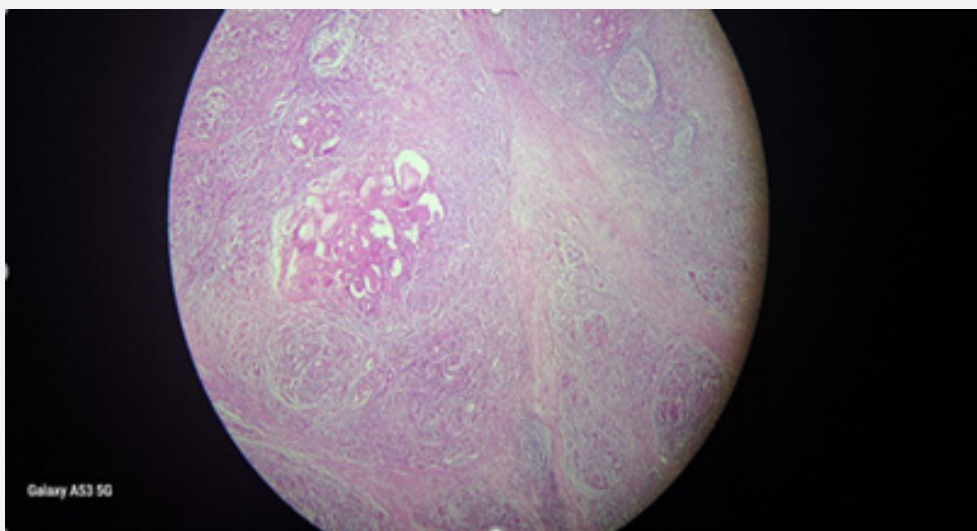


Figure 1C: Fibrosis and inflammation.

Pathology Report

GROSSLY: Two thyroidectomy specimens, 9*5 and 8*4*4 cm

C/S: Gray white solid lobular, 2 times.

Microscopy: Sections show extensive keloid like fibrosis of thyroid parenchyma, fibrous septa dividing the parychima in to lobules, mono nuclear cell infiltration, lymphoid follicles, thyroid follicle atrophy, and onchocyteic cells. Negative for malignant cells. (Dr. Menal H. Pathologist).

Discussion

Riedel thyroiditis (RT) is a rare inflammatory autoimmune disease that is often a clinically diagnostic dilemma because of its insidious presentation and nonspecific symptoms [5]. Riedel's thyroiditis (RT) is an uncommon form of chronic thyroiditis in which the thyroid gland is replaced by fibrous tissue. The etiologic mechanisms underlying RT are unclear: the prevailing view is that it is part of a generalized fibro-inflammatory process also involving other organs [5]. epidemiology Riedel's thyroiditis (fibrous thyroiditis, RT) is an extremely rare form of thyroiditis, leading to a gradual parenchymal transformation to connective tissue. Clinically this is a hard, palpable goiter, which could cause pain, compression symptoms, and affect adjacent structures as the parathyroid glands, musculature in the neck and cause vocal cord paralysis. The etiology is not completely understood, but inflammation mediated by mono-nuclear blood cells appears to be of importance. RT has been claimed to be an IgG4-related disease, also termed IgG4-related thyroid disease [2,6,7].

Manifestations- The complaints and findings that could be relevant with RT and IgG4-RD, such as malaise, weight loss, dyspnea, chest pain, neck tightness, arthralgias, proptosis, enlargement of the submandibular glands, xerophthalmia, abdominal pain, diarrhea, or jaundice were evaluated [8]. Diagnostic workup- Cytology is not always diagnostic in RT, as we also showed, and can fail to demonstrate the invasive nature of

the fibrosis, which can cause uncertainties whether the condition is a fibrosing variant of Hashimoto's disease. Core needle biopsies would provide more information but are generally not advocated due to the discomfort and potential side-effects. associated with such a procedure [9]. More often, the diagnosis of RT is suggested after histological assessment of resected thyroid tissue. Findings such as storiform fibrosis and occlusive phlebitis argues in Favor of RT, and in cases of IgG4 involvement elevation of IgG4-positive plasma cells with an IgG-4 ratio >40% [10,11].

The initial diagnosis of RT is based on clinical history and imaging, but confirmation by histopathological examination is mandatory. The aetiology of RT has been a topic of controversy, with genetic factors, viruses (e.g., Epstein-Barr), and smoking being raised and discussed as potential aetiological factors, but all lacking convincing evidence. More plausible is the notion that, RT likely represents an autoimmune process and a form of primary fbrogenic disease. Currently, RT is regarded as a form of IgG4-related disease (IgG4-RSD) and, in this context, may be referred to as IgG4-related sclerosing thyroiditis [12].

Well-defined diagnostic criteria of RT are follows: (i) fibroinflammatory process involving all or a portion of the thyroid, (ii) evidence of extension beyond the gland, (iii) absence of giant cells, lymphoid follicles, oncocytes, or granulomas, (iv) evidence of occlusive phlebitis, and (v) absence of a neoplasm [13,14], (Table 1).

Table 1: The summary of the haematology, thyroid function and neck ultrasound of the case.

Hematology	Report	Thyroid Function Test	Report	Neck Ultrasound
WBC	7.3*10 ³	TSH	5.2 mIU/L (↑)	Conclusion: Riedel's thyroiditis to r/o hashimoto thyroiditis
Neutrophil	68%	Free T3	2.9 pmol/L (↓)	
lymphocyte	29%	Free T4	11.2 pmol/L (↓)	
platelet	215*10 ³			
HCT	39%			

Management

In contrast to the historical surgical approach, glucocorticosteroid therapy is currently considered first line therapy, in line with the RT currently being viewed as a manifestation of, or analogous to, IgG4-RSD. For disease relapse, immunomodulatory agents (azathioprine, methotrexate, rituximab) can be used [15].

Conclusion

Favourable symptomatic outcome and alleviation of steroids in the majority render surgery for RT valuable when conservative treatment fails. However, more radical procedures show no advantages and recurrences are not prevented. The demanding technique in RT requires special surgical expertise and highly recommends Intraoperative neuromonitoring [16,17].

Recommendations

To diagnose Riedel's thyroiditis, need high suspension from treating physician. It also best to manage as team of surgeon, pathologist, and internist. When surgery indicated should be less aggressive surgery to minimize or avoid risk of post-surgery complications.

Ethical Issue

This study was approved by the Kitasato University Medical Ethics Committee (approval number: B20-338). Informed consent was obtained from the patient for publication of this case report, including the publication of all images, clinical data, and other data included in the manuscript.

References

- Lu L, Gu F, Dai W, xin, Li W, yi, Chen J, et al. (2010) Clinical and pathological features of Riedel's thyroiditis. *Chinese Medical Sciences Journal* 25(3): 129-134.
- Lorenz K, Gimm O, Holzhausen HJ, Kittel S, Ukkat J, et al. (2007) Riedel's thyroiditis: impact and strategy of a challenging surgery. *Langenbeck's Archives of surgery* 392(4): 405-412.
- Julie C, Vieillefond A, Desligneres S, Schaison G, Grunfeld JP, et al. (1997) Hashimoto's thyroiditis associated with Riedel's thyroiditis and retroperitoneal fibrosis. *Pathology-Research and Practice* 193(8): 573-577.

- Zimmermann-Belsing T, Feldt-Rasmussen U (1994) Riedel's thyroiditis: an autoimmune or primary fibrotic disease? *Journal of internal medicine* 235(3): 271-274.
- Fatourechi MM, Hay ID, McIver B, Sebo TJ, Fatourechi V (2011) Invasive fibrous thyroiditis (Riedel thyroiditis): The Mayo Clinic experience, 1976-2008. *Thyroid* 21(7): 765-772.
- Schwaegerle SM, Bauer TW, Esselstyn Jr CB (1988) Riedel's thyroiditis. *American journal of clinical pathology* 90(6): 715-722.
- Hennessey Jv (2011) Riedel's thyroiditis: a clinical review. *The Journal of Clinical Endocrinology & Metabolism* 96(10): 3031-3041.
- Khidirovna LZ (2024) Specific Thyroiditis. *Cytological Diagnosis. European Journal of Modern Medicine and Practice* 4(2): 116-120.
- Takahashi H, Kajita S, Katoh H, Matsumoto T, Inoue A, et al. (2024) Immunoglobulin G4-related thyroiditis associated with Graves' disease: A case report. *Heliyon* 10(4). sss
- Kocaman BB, Şahin S, Uysal S, Muradov I, Soltanova L, et al. (2024) P-66 Primary Thyroid Lymphoma mimicking Riedel Thyroiditis. *JCEM Case Reports* 2(Supplement_1): luad146-063.
- Canpolat AG, Cinel M, Sak SD, Taşkaldıran I, Korkmaz H, et al. (2021) Long-term outcomes of tamoxifen citrate therapy and histo-and immunopathological properties in Riedel thyroiditis. *European Thyroid Journal* 10(3): 248-256.
- Czarnywojtek A, Pietrończyk K, Thompson LDR, Triantafyllou A, Florek E, et al. (2023) IgG4-related sclerosing thyroiditis (Riedel-Struma): a review of clinicopathological features and management. *Virchows Archiv* 483(2): 133-144.
- Navarro-Sánchez V, Marín-Castañeda LA, Gallegos CA, Quiroz O, Ahumada-Ayala M (2020) IgG4-Related Fibrous Thyroiditis (Riedel's Thyroiditis): A Case Report. *The American Journal of Case Reports* 21: e928046-1.
- Yu Y, Liu J, Yu N, Zhang Y, Zhang S, et al. (2021) IgG4 immunohistochemistry in Riedel's thyroiditis and the recommended criteria for diagnosis: A case series and literature review. *Clinical Endocrinology* 94(5): 851-857.
- Zala A, Berhane T, Juhlin CC, Calissendorff J, Falhammar H (2020) Riedel thyroiditis. *The Journal of Clinical Endocrinology & Metabolism* 105(9): e3469-81.
- Pandev R, Khan M, Ratheesh V (2023) Riedel's Thyroiditis: Pitfalls in Diagnosis and Subsequent Complications. *Case Reports in Endocrinology*.
- Shafi AA, Saad N bin, AlHarthi B (2020) Riedel's thyroiditis as a diagnostic dilemma-A case report and review of the literature. *Annals of Medicine and Surgery* 52: 5-9.



This work is licensed under Creative Commons Attribution 4.0 License
DOI: [10.19080/OAJS.2024.15.555924](https://doi.org/10.19080/OAJS.2024.15.555924)

**Your next submission with Juniper Publishers
will reach you the below assets**

- Quality Editorial service
- Swift Peer Review
- Reprints availability
- E-prints Service
- Manuscript Podcast for convenient understanding
- Global attainment for your research
- Manuscript accessibility in different formats
(Pdf, E-pub, Full Text, Audio)
- Unceasing customer service

Track the below URL for one-step submission
<https://juniperpublishers.com/online-submission.php>