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Thyroiditis Mimicking Thyroid Neoplasm: A Case Report

Reeta Dhar[1], Omar Bali[2], Urshlla Kaul[3], Clerin John[4], Anshika Rai[5], Priyanka Gaikwad[6], Jyotsna Sahai[7], Talat Noor Sheikh[8]

[1]Professor, Department of Pathology, MGM's Medical College, Navi Mumbai;
[2]Senior Resident, Department of Pathology, MGM's Medical College, Navi Mumbai;
[3]Pathologist, MGM Hospital, Vashi;
[4]MBBS, MGM Medical College, Navi Mumbai;
[5,6,7]3rd year Residents, Department of Pathology, MGM's Medical College, Navi Mumbai;
[8]Pathologist, Department of Pathology and IHBT, H.N Reliance Hospital, Mumbai.

Corresponding Author: Omar Bali

ABSTRACT

***Background*:** Hashimoto's thyroiditis is an autoimmune thyroiditis that results in the destruction of the thyroid gland architecture. It can be so extensive that it could mimic a thyroid neoplasm. Being presented here is a case report of Hashimoto's thyroiditis that manifested with clinical features similar to that of a thyroid neoplasm.

Case Report: The case being reported here is of a 65-year-old female who presented with midline swelling in the neck for 4 months. There was also change in voice along with mild pain. The thyroid profile revealed exceedingly high levels of TSH. Histopathological examination was conclusive of lymphocytic thyroiditis with possibility of autoimmunity.

Conclusion: Histopathological examination is useful for initial evaluation of painless thyroiditis, particularly in patients with palpable thyroid nodule and clinical presentation of a neoplasm. Therefore, attention should be paid to the differential diagnosis of thyroiditis and further assessment of thyroid profile and antibody levels in such thyroid mimics of carcinoma is strongly recommended.

Keywords: Hashimoto's thyroiditis, autoimmune thyroiditis, thyroid neoplasm, anti-thyroid antibodies, Anti-Thyroglobulin antibody, Hurthle cells, goitre

INTRODUCTION

Hashimoto's thyroiditis (HT) is also known as chronic lymphocytic thyroiditis. It is an autoimmune disease that causes massive destruction of the thyroid gland and fibrosis which gradually progresses to thyroid failure. It is the second most common thyroid lesion, the first being endemic goitre, and it is more predominant in women [(1)]. It commonly presents as diffuse goitre and rarely bearing one or two nodules. In the pre-operative stage, determining whether these nodules are caused by HT or by an HT-related malignancy could be challenging [(2)].

CASE REPORT

A 65-year-old female came to the surgery department with midline swelling in the neck of about 12x10x15cms. The swelling was small to start with and increased to this size in 4 months. It was firm in consistency and moved with deglutition. The patient experienced occasional pain over the swelling and mild change in voice but had no difficulty in swallowing. The thyroid profile revealed: TSH >100 micro IU/ml (0.5-6 micro IU/ml), T3 = 0.685 ng/dl (80-180 ng/dl) and T4 = 1.720 ug/dl (4.6-12 ug/dl).

Gross examination

The tissue mass was grey white to grey brown in colour, measuring 12 cm in diameter. The Right lobe measured 5x7x0.5

cm, the Isthmus measured 2.5 cm and the Left lobe measured 6 x 5.2 x 2 cm.

It was globular and reddish brown in colour. The cut section was greyish brown.

Microscopic examination

Hematoxylin & Eosin stained sections from right lobe, left lobe and isthmus showed the same histomorphology. The sections showed total effacement of the thyroid parenchymal architecture, replaced by extensive fibrosis, encircling very few atrophied follicles and lymphoid tissue. There was intense infiltration with plasma cells, lymphocytes, scattered multinucleate giant cells and histiocytes. Plenty of lymphoid follicles bearing prominent germinal centres were also noted. Also seen were plenty of Oncocytic epithelial cells (Hurthle cells) in sheets, singly scattered, and lining the atretic follicles. Hurthle cells at some areas showed nuclear enlargement and hyperchromasia. From these histomorphology findings, diagnosis of lymphocytic/autoimmune thyroiditis was made. Hence further investigations were done to confirm Hashimoto's Thyroiditis.

1. Anti-Microsomal Antibody (AMA): 145.0 IU/ml (Normal range: 0-40 IU/ml)
2. Anti-Thyroglobulin antibody (ATG): 3786.2 IU/ml (0-125 IU/ml)

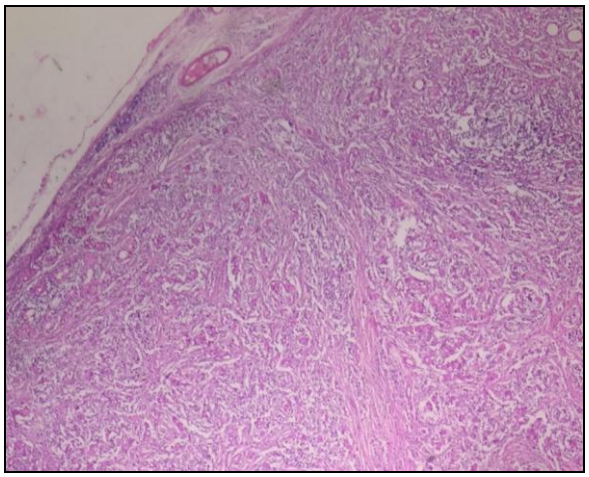

Figure 1: (Low power view-4x)

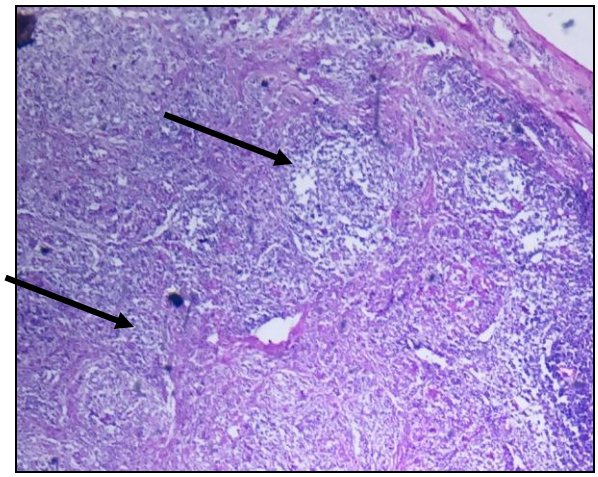

Figure 2: Prominent Lymphoid Follicles (Low power view-10x)

The figure shows effacement of normal thyroid architecture, extensive fibrosis, loss of follicles and diffuse lymphocytic infiltration

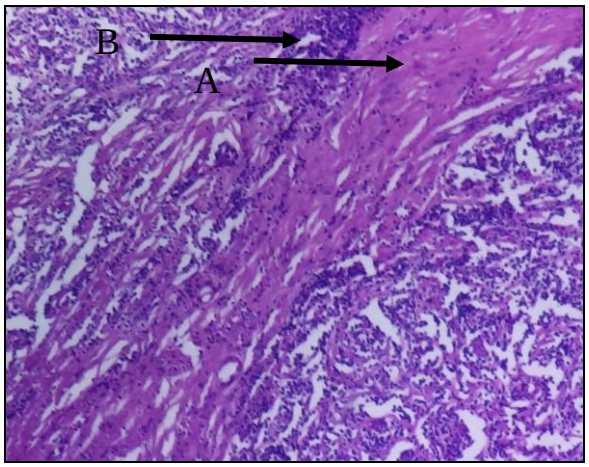

Figure 3: Extensive fibrosis (A) and lymphoid proliferation (B) (High power view-40x)

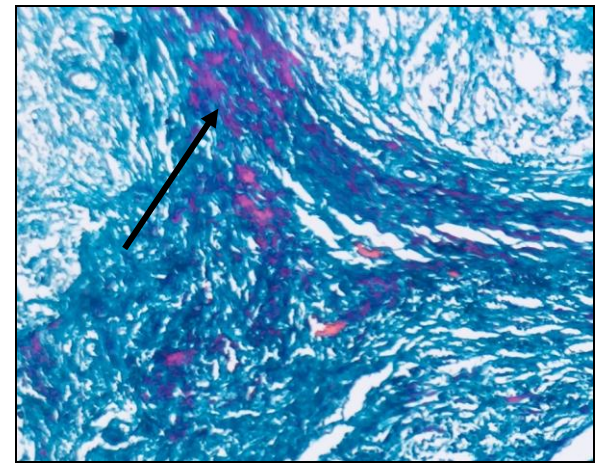

Figure 4: Masson Trichome stain showing extensive fibrosis

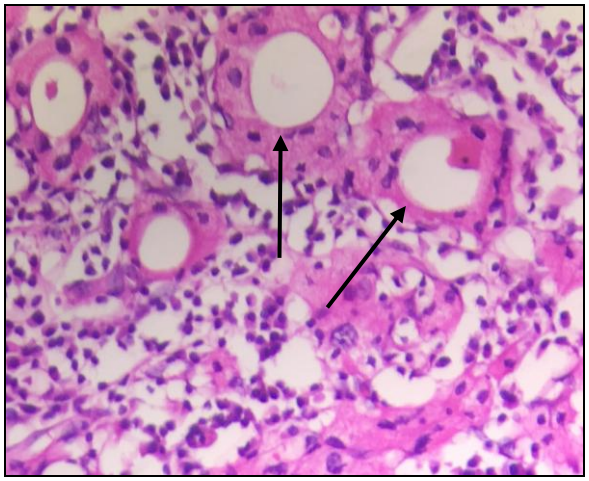

Figure 5: Few atrophic follicles lined by Hurthle cells (High power view-40x)

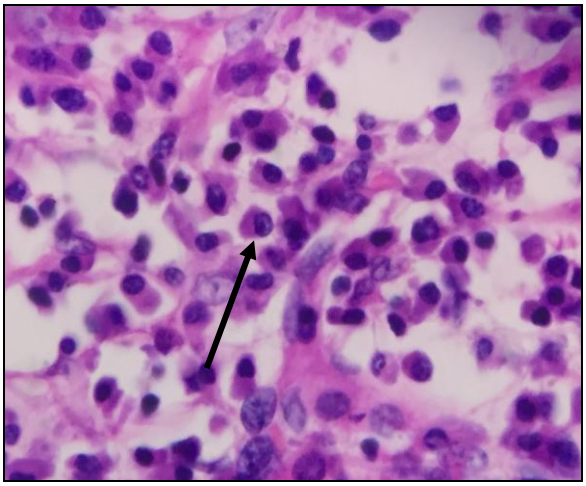

Figure 6: Lymphoplasmacytic infiltrate (High power view-40x)

CASE DISCUSSION

Hashimoto's thyroiditis is usually seen in women in their 40s [(3)]. The patients might require life-long thyroid hormone replacement therapy for the hypothyroidism resulting from the later stages of the thyroiditis [(4)]. The pathology of the disease mainly involves the formation of antithyroid antibodies against the thyroid tissue, resulting in advancing fibrosis[(5)]. This destructive thyroiditis is characterized by thyroid inflammation, with consequent destruction of the thyroid follicles, and proteolysis of the stored thyroglobulin leading to moderate release of thyroid hormones[(6)].

In a malignant thyroid neoplasm, the highly malignant tumor rapidly infiltrates the thyroid, destroying and replacing the tissue, causing the follicles to rupture and release colloid that contains the thyroid hormone. Because the process is so rapid, there could be significant elevation of thyroid hormone and a toxic state ensues simulating thyroid storm[(7-11)]. In the affected patients, the gland is often completely destroyed, eventually leading to hypothyroidism.

In Hashimoto's thyroiditis, the lymphocytes infiltrate, destroy the follicles and the follicular cells get enlarged and can show cytoplasmic eosinophilia (Hurthle cells). The nuclei of these cells may also be enlarged, and in severe cases, may resemble the nuclei of papillary thyroid carcinoma[(12-14)].

Clear, ground glass, empty, or Orphan Annie eyed – are all terms that describe the characteristic appearance of the nuclei in papillary carcinoma[(15,16)]. Although cleared nuclei are a peculiar feature of papillary carcinoma, autoimmune thyroiditis, particularly Hashimoto's disease, often shows nuclear changes that are very similar[(17, 18)]. Intracytoplasmic inclusions may be seen. Nuclear groves (also characteristic of the Papillary Carcinoma nucleus) may be seen in thyroid lesions like Hashimoto's disease[(19)].

CONCLUSION

Although the histomorphology of the thyroid tissue were strikingly similar to that of a thyroid neoplasm, the final diagnosis pointed towards a fibrous variant of Hashimoto's thyroiditis. It is therefore important to take into account that this type of thyroiditis could manifest as a thyroid neoplasm, hence histopathological findings in conjunction with biochemical findings prove to be an essential diagnostic tool.

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