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RESEARCH ARTICLE

A RARE CASE REPORT: MEDULLARY CARCINOMA OF THYROID ARISING IN A PATIENT WITH HASHIMOTO'S THYROIDITIS

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ABSTRACT

Hashimoto Thyroiditis is an autoimmune disease that results in destruction of the thyroid gland and gradual and progressive thyroid failure. The more commonly reported malignancies in patients with Hashimoto's Thyroiditis have been lymphoma and papillary carcinoma. A prevalence of medullary carcinoma of only 0.35% has been reported in Hashimoto's patients. We present a case of 42 year old female who presented with complaint of swelling in the neck associated with difficulty in swallowing and hoarseness of voice. Total thyroidectomy was done. Histopathological examination reveals co-existence of Hashimoto's Thyroiditis with Medullary carcinoma, which is a rare presentation.

INTRODUCTION

Hashimoto Thyroiditis is an autoimmune disease that results in destruction of the thyroid gland and gradual and progressive thyroid failure. It is caused by a breakdown in self tolerance to thyroid antigens. Microscopically, there is extensive infiltration of the parenchyma by a mononuclear inflammatory infiltrate containing small lymphocytes, plasma cells and well developed germinal centers with atrophic thyroid follicles. The rate of occurrence of thyroid malignancies in patients with Hashimoto's thyroiditis ranges from 0.5-13% with an average of 7% (Weiss *et al.*, 1983). The more commonly reported malignancies have been lymphoma (Holm, 1985) and papillary carcinoma (Ott *et al.*, 1985). But very few reports depicts its co-existence with Medullary Carcinoma of thyroid. A prevalence of medullary carcinoma of only 0.35% has been reported in Hashimoto's patients (Schuetz *et al.*, 2006). One such exceptional case is being reported.

Case Report: A 42 year old female presented with the complaint of swelling in neck for six months which was

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associated with difficulty in swallowing and hoarseness of voice for the three months. She had no family history of goiter or irradiation. Serum T3 and T4 levels were within normal limits. Total thyroidectomy was done and was sent for histopathological examination. The specimen was received in three pieces with largest piece measuring 6.5x4x2cm cut section of which was grey white with few dark brown areas. In H&E stained sections, there were two distinct histological appearances of the lesion. In one area, there was lymphocytic infiltration of the stroma. The lymphoid tissue exhibited large follicles with prominent germinal centers (Figure 1). The other area was composed of polygonal to spindle shaped cells along with amyloid. Based on these features the lesion was diagnosed as Medullary Carcinoma of Thyroid along with Hashimoto's Thyroiditis (Figure 2A & 2B). In addition, amyloid was confirmed using Congo red stain (Figure 3).

DISCUSSION

Numerous reports have noted an association of Hashimoto's Thyroiditis with other pathological conditions of the thyroid including carcinoma, adenoma and lymphoma. The rate of occurrence of an associated carcinoma with Hashimoto's Thyroiditis in various studies averages 7% with a range from 0.5-13% (Weiss, 1983).

The co-existence of Medullary Carcinoma and Hashimoto's Thyroiditis is rare. The first well documented case of co-existence of these two entities in the same patient in English literature was published in 1983 (Weiss, 1983). Since then only few sporadic cases have been reported (Gaskin, 1992; De Pasquale *et al.*, 2004; Mousa *et al.*, 2013). Schuetz *et al* reported an overall prevalence of Medullary Carcinoma of 0.35% in Hashimoto's patients (Schuetz *et al.*, 2006). The pathogenesis of co-existence of Hashimoto's Thyroiditis with neoplasms is matter of debate. It is controversial whether Hashimoto's Thyroiditis predisposes to carcinoma or Hashimoto's develop secondarily as an immune response to the malignancy. It has been suggested that prognosis of patient with carcinoma of thyroid gland with co-existing Hashimoto's disease is better than that of patients with carcinoma of thyroid gland alone.

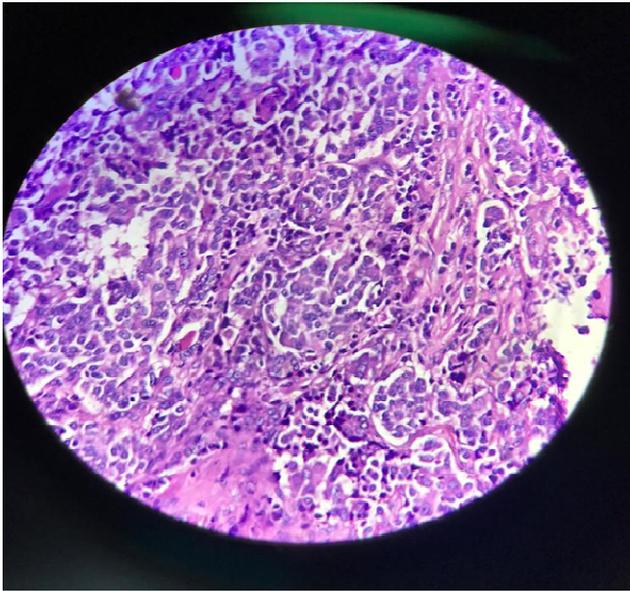


Figure 1. H & E stained sections from thyroid on low power (10X) shows lymphocytic infiltration of the stroma and prominent germinal centres

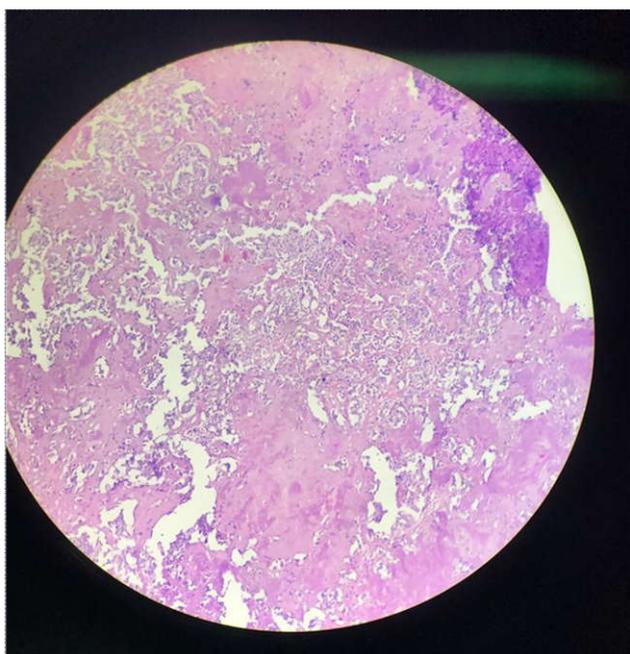


Figure 2A. H&E stained sections from thyroid on low power (10X) shows presence of Medullary Carcinoma with polygonal and spindle shaped cells with amyloid.

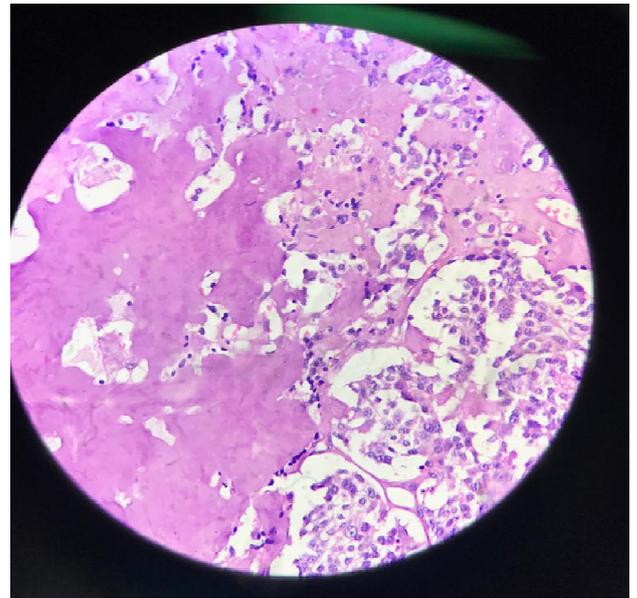


Figure 2B. H&E stained sections from thyroid on high power (40X) shows Medullary carcinoma with polygonal and spindle shaped cells with amyloid

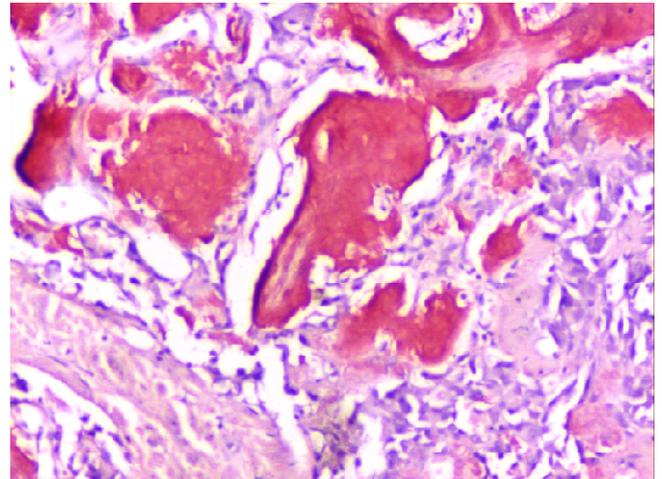


Figure 3. Positive Congo red stain confirmed the presence of amyloid (40X)

Conclusion

Medullary Carcinoma should be included in the differential diagnosis of carcinoma arising in association with Hashimoto's Thyroiditis. Distinction of this entity from other types of thyroid carcinomas is necessary not only for treatment and assessment of prognosis, but also because such patients and their family members need to be screened for multiple-endocrine neoplasia syndrome.

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