



ISSN NO. 2320-5407

Journal homepage: <http://www.journalijar.com>

INTERNATIONAL JOURNAL
OF ADVANCED RESEARCH

RESEARCH ARTICLE

Cytological and clinical correlation of Hashimoto's thyroiditis : a four year experience in a tertiary hospital

Jangbahadur Singh¹, Shazia Bashir², Ather Hafiz Khan³, Shaveta Sharma², Mohsin ul Rasool² and Abdul Rasheed⁴

1. MD, Assistant Prof., Department of Pathology, SKIMS Medical College, Bemina, J & K.

2. MD, Senior resident, Department of Pathology, SKIMS Medical College, Bemina, J & K.

3. DNB, Senior resident, Department of Pathology, SKIMS Medical College, Bemina, J & K.

4. MD, Head of the Department, Department of Pathology, SKIMS Medical College, Bemina, J & K.

Manuscript Info**Manuscript History:**

Received: 10 November 2013

Final Accepted: 24 December 2013

Published Online: January 2014

Abstract

Objective: This study was undertaken to find out the frequency of Hashimoto's thyroiditis, determine the age and sex incidence, mode of presentation and to know the status of thyroid hormones in the patients of Hashimoto's thyroiditis.

Material and methods: This is a retrospective study and was carried out between January 2009 and December 2012. In this 4 year period, FNAC of 235 cases of thyroid lesions was performed and out of these, diagnosis of Hashimoto's thyroiditis was made in 33 cases.

Results: Out of total 235 cases, cytologic diagnosis of Hashimoto's thyroiditis was made in 33 cases. Most cases presented as diffuse goitre, a female predominance was noted, and maximum patients were from 21 to 30 years age group. Out of total 33 cases of Hashimoto's thyroiditis, 20 were euthyroid, 12 cases were hypothyroid and only 1 case showed raised thyroxine levels.

Conclusion: Based on our results this study suggests a high prevalence of Hashimoto's thyroiditis especially among females and the affected patients are from a younger age group (21 to 30) and are mostly euthyroid.

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Introduction

Hashimoto in 1912 described four women in whom thyroid gland was enlarged and appeared to have been transformed into lymphoid tissue¹. The presence of antithyroid antibodies was reported 40 years later in patients with this disorder². Hashimoto's thyroiditis is the most common cause of goitre and hypothyroidism³. It is an autoimmune disease and the most common inflammatory condition of the thyroid gland⁴. Diffuse goitre and hypothyroidism are the principal manifestations of Hashimoto's thyroiditis. Clinically detected gross nodule may rarely dominate⁵. Hashimoto's thyroiditis affects 2% of the general population⁶. It is ten times more frequent in women than in men and is more common in older women⁷. Diagnostic features of Hashimoto's thyroiditis on cytology as well as on histology includes dense thyroidal accumulation of lymphocytes, plasma cells and occasional multinucleate giant cells. The epithelial cells are enlarged and have a distinctive eosinophilic cytoplasm due to increased number of mitochondria⁸.

Suspicion of Hashimoto's thyroiditis can be made by clinical examination of thyroid gland together with ultrasonographic findings and laboratory tests⁹. Autoimmune thyroiditis is considered by some investigators a histologic diagnosis that can be subdivided into lymphocytic thyroiditis, if only lymphocytic infiltration is present, and Hashimoto's thyroiditis if eosinophilic changes and atrophy in thyroidal cells and fibrosis are also seen¹⁰.

Material and methods

This study was carried out on a total of 236 cases presenting with thyroid disease diagnosed on FNA cytology in the department of pathology of our hospital between January 2009 and December 2012. Case details were obtained from the record section of the hospital. Age, sex and clinical presentation (diffuse or nodular enlargement of thyroid) were tabulated along with T4 and TSH values. FNA cytological smears were stained by Giemsa and cytomorphologic

features were reviewed according to the standard cytological features described in the literature^{11, 12}. A written consent was taken from patients and the study was duly approved by the Hospital Ethical Committee. Cytological diagnosis was suggested when FNA smears showed moderate to abundant lymphoid infiltrate with a variable degree of hurthle cell metaplasia and follicular destruction.

Results

A total of 235 FNAs of thyroid were performed over a period of 4 years. Out of these 235 cases, cytologic diagnosis of Hashimoto's thyroiditis was made in 33 cases. Clinically most of the cases (22) presented as diffuse goitre followed by solitary thyroid nodule (9) and multinodular goitre (1). Female predominance was noted with 31 females presenting with Hashimoto's thyroiditis in comparison to males who constituted only 2 cases. Maximum patients diagnosed with Hashimoto's thyroiditis were from the age group of 21 to 30 years (15 cases), followed by less than 20 years age group (8) and 31 to 40 years age group (7) (table 1). Least number of patients was seen in the age group of more than 40 years (3). Out of total 33 cases, 20 were euthyroid, 12 cases were hypothyroid and only 1 case showed raised thyroxine levels (table 2).

Table 1: Age distribution in Hashimotos thyroiditis

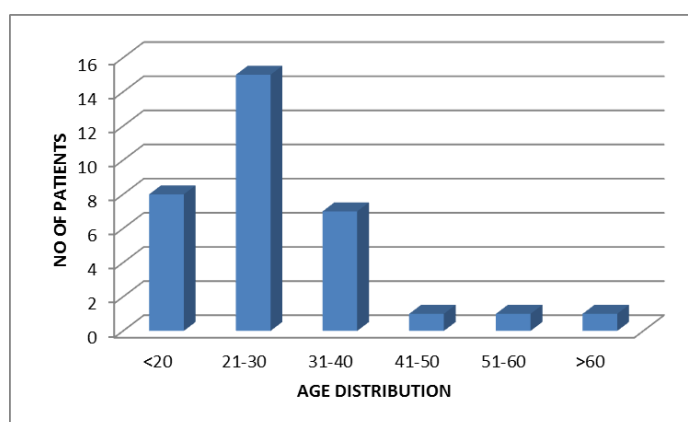


Table 2: Thyroid status of patients

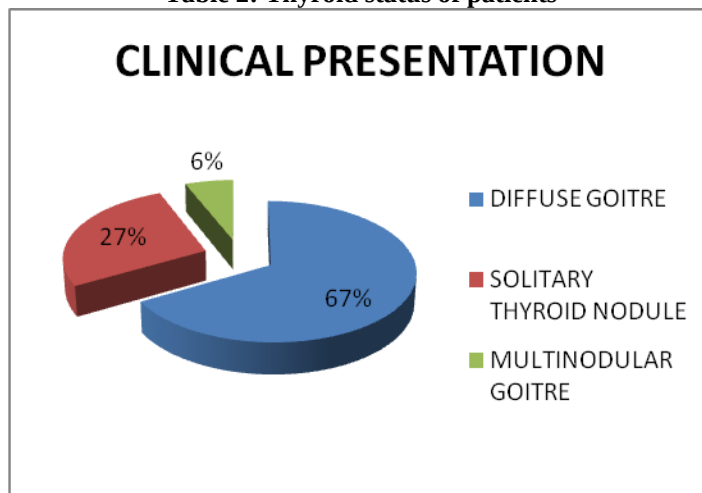


Figure 1: Cellular smears showing mixed population of lymphoid cells, lymphohistiocytic aggregates and cohesive groups of follicular cells(100X)

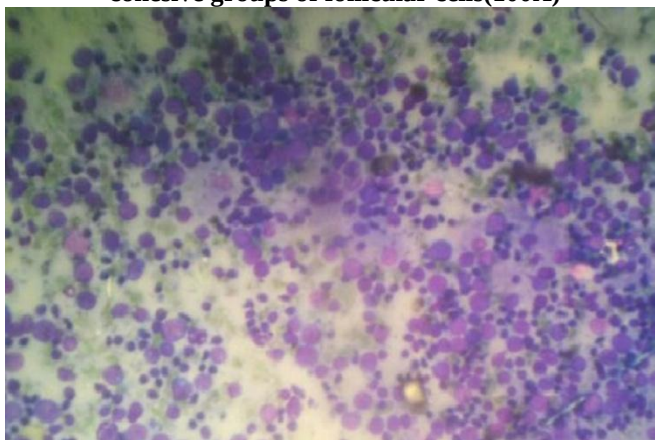
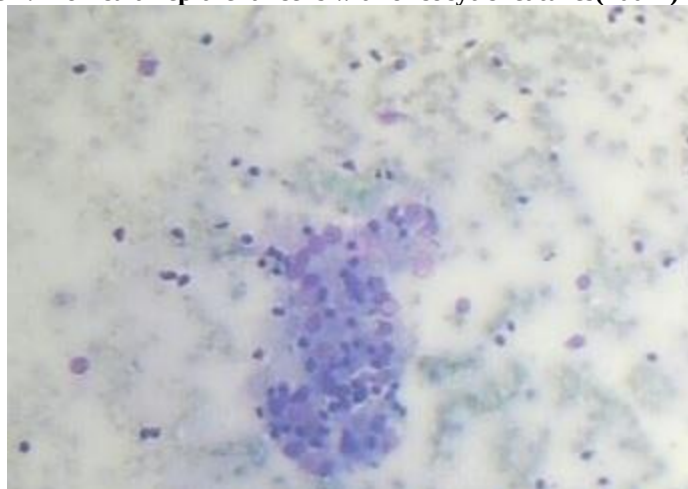


Figure 2: Follicular epithelial cells with oncocytic features(100 X)



Discussion

Next to endemic goiter in iodine deficient areas, hashimoto's thyroiditis also known as chronic lymphocytic thyroiditis is the second most common lesion diagnosed by FNAC. Diagnostic pitfalls and subsequent improper management are the result of its varied clinical presentation, hormonal profile and cytological findings¹³.

In our study, most of the cases who presented with Hashimoto's thyroiditis were young and belonged to the age group between 21 and 30 years and were predominantly females (31) and very few cases were seen in >40 years age group. Similar findings were observed by Kapila K et al (1995) in Kuwait where maximum number of patients with hashimoto's thyroiditis presented in the age group between 16 and 35 years. Staii et al. (2010) in his study reported that most of the patients who presented with hashimoto's thyroiditis were predominantly pre menopausal females¹⁴. In our study the most common mode of presentation was diffuse goitre (22) followed by solitary thyroid nodule (9) and multinodular goitre (2). Diffuse goitre is the most common presentation in young patients and with increasing age patients present with solitary thyroid nodule and multinodular goitre. The reason for this trend may be that fibrosis and nodule formation in autoimmune thyroiditis may take several years¹⁵. Kapila K et al (1995) also reported the diffuse goitre to be dominant clinical presentation in younger patients (6 to 25 age group) while multinodular goitre and solitary thyroid nodule were found more often in older age group (36 to 60 years)¹⁶.

Most of the patients in our study were euthyroid (20) at presentation. Functional disturbances were observed in rest of the patients where 12 patients were hypothyroid and only 1 patient showed features of hyperthyroidism. Kapila K et al (1993) showed that majority of patients in their study were euthyroid at presentation¹⁶. Similarly, euthyroid state was also the commonest presentation in Hashimoto's thyroiditis patients in a study of southern Jordan reported by Esbeih A. T et al¹⁷.

Prevalence rate in our study was 14%, which was similar to the results obtained by Satii et al where the prevalence

rate obtained was 13.4%¹². In contrast to our study a relatively low prevalence rate of 0.55% was reported by Weetman¹⁸ in US and in UK, Tunbridge et al¹⁹ reported a prevalence of 0.8%.

References

1. Hashimoto H. Zur Kenntniss der lymphomatösen Veränderung der Schilddrüse (Struma lymphomatosa). Arch Klin Chir 1912; 97:219-48.
2. Roitt IM, Doniach D, Campbell PN, Hudson RV. Auto-antibodies in Hashimoto's disease (lymphadenoid goitre). Lancet 1956;2:820-1.
3. Slatosky J, Shipton B, Wahba H. Thyroiditis: differential diagnosis and management. Am Fam Physician 2000; 61: 1047-54.
4. Hamburger JI. The various presentations of thyroiditis. Diagnostic considerations. Ann Intern Med 1986; 104: 219-24.
5. Bialas P, Marks S, Dekker A, Field JB. Hashimoto's thyroiditis presenting as a solitary functioning nodule. J Clin Endocrinol 1976; 43: 1365-9.
6. Wang C, Crapo LM: The epidemiology of thyroid disease and implications for screening. Endocrinol Metab Clin North Am 2000; 29:239-253.
7. Tunbridge WM, Vanderpump MP: Population screening for autoimmune thyroid disease. Endocrinol Metab Clin North Am 2000; 29: 239-253.
8. Divendra D, Eisenbarth GS: 17. Immunologicalendocrine disorders. J Allergy Clin Immunol 2003; 111:624-636.
9. Smutek D, Sara R, Sucharda P. Relation between quantitative description of ultrasonographic image and clinical and laboratory findings in lymphocytic thyroiditis. Endocrine Regulations 2003; 37: 181-7.
10. Costa A, Torchio B, Zoppetti G, Feyless E. What is meant today by Hashimoto's thyroiditis? J Endocrinol Invest 1989;12:355-6.
11. Goellner JR, Gharib H, Grant CS, et al. Fine needle aspiration cytology of the thyroid, 1980 to 1986. Acta Cytol 1987; 31:587-90.
12. Oertel YC: Fine-needle aspiration and the diagnosis of thyroid cancer. Endocrinol Metab Clin North Am 1996; 25:69-91.
13. Gharib H: Fine-needle aspiration biopsy of thyroid nodules: advantages, limitations, and effect. Mayo Clin Proc 1994; 69:44 - 9.
14. Satii A, Mirocha S, Todorva-Koteva K, Glinberg S, Jaume JC. Hashimoto thyroiditis is more frequent than expected when diagnosed by cytology which uncovers a pre-clinical state; Thyroid Reserch 2010,3:11.
15. Lamberton P, Jackson IMD. Thyroiditis. Becker KL, Ed. Principles and Practice of Endocrinology and Metabolism, 1st ed. JB Lippincott and Co, Philadelphia, PA, USA 1990;1:370-6.
16. Kapila K, Sathar AS, Al-Rabah AN, Prahash A, Seshadri SM. Chronic Lymphocytic (Hashimoto's) Thyroiditis in Kuwait Diagnosed by Fine Needle Aspirates; Annals of Saudi Medicine, Vol 15, No 4, 1995.
17. Esbeith TA; Hashimoto's Thyroiditis: A retrospective study in southern Jordan; JRMS June 2004; 11(1): 67-70.
18. Weetman AP: Thyroid disease. In The Autoimmune Disease. Edited by: Rose NR, Mackay IR. Elsevier; 2006:467-482.
19. Tunbridge WM, Evered DC, Hall R, Appleton D, Brewis M, Clark F, Evans JG, Young E, Bird T, Smith PA: The spectrum of thyroid disease in a community: the Wickham survey. Clin Endocrinol (Oxf) 1977, 7:481-493.