

Clinicopathological Study in Patients With Hashimoto's Thyroiditis in Babylon

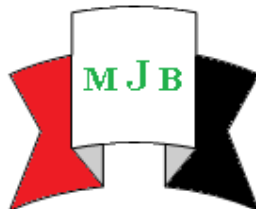
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Abstract

Objective : This study was performed to assess Hashimoto's thyroiditis from clinicopathological aspect and thyroid function.

Patients and methods: A prospective study of 175 patients underwent thyroid surgery at the Hilla teaching general Hospitals were undertaken between Jan 2006 till Oct 2009 in order to study the percentages of Hashimoto's thyroiditis to the total cases which were taken and also to know the correlation between thyroid function and histopathological status in those patients whom diagnosed as hashimotos thyroiditis.

Results: Of 175 patients underwent thyroid surgery, 18 cases diagnosed as hashimotos thyroiditis, 10 of them were in a hypothyroidism status and 4 cases in those patients more than 90% of thyroid follicles were destructed suffering from severe hypothyroidism, 3 cases presented with moderate hypothyroidism 70-90% of thyroid follicles were destructed, 3 cases with mild hypothyroidism , the thyroid follicles lost about 50-70% of total thyroid follicles, 4 cases subclinical hypothyroidism <50% of follicles were damaged , 2 cases were euthyroid and the last one the histopathological finding was hashotoxicosis and functionally the patient was thyrotoxic.

Conclusions In recent years, the incidence of Hashimoto's thyroiditis is on the rise. Most cases diagnosed as hashimotos thyroiditis were in a hypothyroidism status There are strong correlation between histopathological assessment of the destruction of the thyroid follicles and thyroid status.

Key word: H.T hashimotos thyroiditis, TFT thyroid function test, FNA Fin needle Aspiration

دراسة العلاقة السريرية - المرضية للمرضى المصابين بالتهاب الغدة الدرقية نوع هاشموتو في بابل

الخلاصة

هدف الدراسة : هذه الدراسة انجزت لكي تقيم التهاب الغدة الدرقية نوع هاشموتو من الناحية السريرية والباثولوجية وعلاقتها بمستوى افراز الغدة الدرقية

طريقة العمل :انجزت هذه الدراسة في مستشفى الحلة التعليمي والمستشفيات الخاصة تضمنت مائة وخمسة وسبعون مريض تعرضوا الى جراحة الغدة الدرقية والمختبرات الخاصة خلال فترة ٢٠٠٦-٢٠٠٩ وتم سحب مصل الدم من المرضى قبل العملية وإجراء فحص (T3,T4,TSH) باستخدام جهاز (minividas)

وارسلت الى الفحص النسيجي باستخدام صبغة الايوسين والهيماتوكسيلين وتشخيص حالت التهاب الغدة الدرقية نوع هاشموتو النتائج: من مائة وخمسة وسبعون مريض اجريت لهم عملية رفع الغدة الدرقية ثمانية عشر حالة شخصت من خلال الفحص النسيجي بالتهاب الغدة الدرقية نوع هاشموتو ، عشر حالات مصابة بخمول إفراز الغدة الدرقية ، اربع حالات مصابة بالخمول الحاد

، ثلاث حالات مصابة بخمول متوسط ، وثلاث حالات مصابة بخمول بسيط ، ثلاث حالات بإفراز طبيعي اربع حالات مصابة
بالخمول الغير سريري وحالة واحدة مصابة بزيادة افراز الغدة
مفاتيح الكلمات : التهاب الغدة الدرقية نوع حشما تو

Introduction

Hashimoto's thyroiditis was first described in 1912 by Dr. Hakuru Hashimoto. Based on the histological findings, Hashimoto originally used the term "Struma Lymphomatosa." Over the years, this disease has been called by several names including lymphocytic thyroiditis,

autoimmune thyroiditis, chronic thyroiditis, and lymph adenoid goiter.

Hashimoto thyroiditis is an autoimmune disease in which the immune system reacts against a variety of thyroid antigens⁽¹⁾

The incidence of hashimoto thyroiditis is roughly equal to that of graves' disease (0.3-1.5 cases per 1000 population per year)⁽²⁾

The disease is 15-20 times as frequent in women as in men . it occurs especially during the decades from 30-50 years , but may be seen in any age group⁽³⁾

Hashimoto thbyroiditis is often associated with types I diabetes and other autoimmune disorders such as celiac disease , type 2 and type 3 polyglandular autoimmune disorders (2,4)

The name of hashimoto thyroiditis is derived from 1912 report by Hashimoto describing patients with goiter and intensely lymphocytic infiltration of the thyroid⁽⁵⁾

Clinically the patients with hashimoto s thyroiditis are usually asymptomatic and some patients develop goiters with or without hypothyroid^(5,6)

Grossly the thyroid is often diffusely enlarged although more localized enlargement may be seen in some cases the capsule is intact and the

glands is well demarcated from adjacent structure.⁽⁷⁾

The cut surface is pale , yellow –tan , firm and somewhat nodular⁽⁸⁾

Microscopic examination reveals extensive infiltration of parenchyma by mononeuclear inflammatory infiltrate containing small lymphocytes ,plasma cells, and well-developed germinal centers. The thyroid follicles are atrophic and are lined in many areas by epithelial cells distinguished by the presence of abundant eosinophilic , granular cytoplasm , termed Hurthle cells^(9,10)

In the usual clinical course hypothyroidism develops gradually in some cases ,however it may be preceded by transit thyrotoxicosis caused by disruption of hormones (hashiotoxicosis) during this phase , free thyroxine and free triiodthyronine levels are elevated , TSH is diminished⁽¹¹⁾

There is increased risk for the development of B-cell Non Hodgkin lymphoma and recently for papillary carcinoma of thyroid⁽¹²⁾

In the pathogenesis of Hashimoto thyroiditis multiple immunologic mechanism cause death of thyrocytes CD8+ cytotoxic T-cell mediated cell death.

Cytokines –mediated cell death CD4+ T cell produce inflammatory cytokines such as IFN- γ ⁽¹³⁾

the etiology of Hashimoto thyroiditis is considered to be multifactorial involving the interplay of various environmental and genetic factors the major histocompatibility complex (MCH),cytotoxic T-lymphocyte association (CTLA-4) and the human leukocytes antigen (HLA) are the genetic factors which are

purported to play a major role in the pathogenesis of Hashimoto thyroiditis, the common environmental factors which act as triggers to initiate the insult on thyroid tissue include infections, cytokine therapy, selenium and iodine intake.⁽¹⁴⁾

Hashimoto thyroiditis have (serum) antibodies reacting with thyroglobulin and thyroid peroxidase these antibodies particularly antibodies against thyroid peroxidase are complement –fixing immunoglobulin and may be cytotoxic⁽¹⁴⁾

Fine needle aspiration(FNA) can be a useful diagnostic procedure but is in frequently required FNA typically reveals lymphocytes ,macrophages ,scant colloid and a few epithelial cells⁽¹⁵⁾

The clinical course of the disease has highly variable clinical presentation. Patients may either be hypothyroid, euthyroid or hyperthyroid , about 20% of patient exhibit signs and symptoms of mild hypothyroidism at the initial presentation , the severity of the symptoms increases with the progression of the disease this increase in the severity of symptoms is attributed to gradual destruction of thyroid follicles along with elevated thyroid antibody levels ,⁽¹⁶⁾

Patients and methods:

A cross section study of 175 patients underwent thyroid surgery at the Hilla teaching general Hospitals and private laboratories were undertaken between Jan 2006 till Oct 2009, the thyroid biopsy putted in 10% formalin , paraffin block was done and H&E stains slide examined in order to study the percentages of Hashimoto's thyroiditis to the total cases, serum collected from the patients to study the level of thyroid function tests by minividas technique which were taken and also to know the correlation between thyroid function and

histopathological status in those patients whom diagnosed as hashimotos thyroiditis.

Statistical analysis

The study design is descriptive case series and the data been controlled and analyzed using computer soft ware statistical package of social science (spss) version 18 means of continuous variable and proportions of categorical variables have been analyzed using student test and chi-square test respectively and valueless than 0.5 as significant .

Result

One hundred seventy five(175) patients underwent thyroidectomy included in this study

Table (1) illustrated the sex distribution of patients with hashimoto thyroiditis where more commonly in female 14 (77.78%) cases , only 4 (22.22%) cases males, with a significant female preponderance compared with controls (P=0.002)

Eighteen (10.2%) cases was diagnosed as Hashimoto thyroiditis by histopathological examination as explained in table (2)

Table (3) shows the thyroid function test assessments in Hashimoto thyroiditis patients , according to the results of TFT the patients divided into clinically obvious hypothyroidism , subclinical hypothyroidism, Euthyroid and hashimoto-toxicosis patients where hypothyroidism 10(55.5%)cases, subclinical hypothyroidism 4(22.2%)cases, euthyroid patients were 3(16.6%) and Hashimatotoxicosis was 1(5.5%)

In table(4) return divided the clinically hypothyroidism into severe hypothyroidism 4(30%) cases, moderate hypothyroidism 3(30%)

cases and mild hypothyroidism 3(40%) cases in correlation with histopathological assessment of thyroid follicles destructions where in severe hypothyroidism there are >90% loss of thyroid follicles, in moderate hypothyroidism There are 70-90 % damage of thyroid follicles, while in mild hypothyroidism

only 50-70% of thyroid follicles destructed and finally in subclinical hypothyroidism less than 50% of thyroid follicles damaged.

Concurrent thyroid carcinoma is present only in one case of Hashimoto thyroiditis as papillary carcinoma.

Table (1) :sex distribution inpatients with Hashimoto thyroiditis

SEX	No. & %
MALE	4 (22.22 %)
FEMALE	14 (77.78 %)
TOTAL	18 (100%)

Table(2): shows the number and percent of Hashimoto thyroiditis in thyroidectomy patients

Histopathgical diagnosis	No. and %
Non Hashimoto's thyroiditis	157 (89.7%)
Hashimoto's thyroiditis	18 (10.2%)
Total	175 (100%)

Table (3) appear the TFT of patients diagnosed as hashimoto thyroiditis

TFT	No.
Hypothyroidism	10
Sub clinical hypothyroidism	4
Euthyroid	3

Toxic	1
Total	18

Table (4): the correlation between TFT level and Histopathological assessments

Level of hypothyroidism	No.	Percent of thyroid follicles destruction
Severe hypothyroidism(TSH=>60 IU/ml)	4	>90% of thyroid follicles damaged
Moderate hypothyroidism(TSH=40-60IU/ml)	3	70-90 % of thyroid follicles damaged
Mild hypothyroidism(TSH=40-15 IU/ml)	3	50-70 % of thyroid follicles Damaged
Subclinical hypothyroidism(TSH= 5-15 IU/ml)	2	<50% of thyroid follicles damaged

Discussion

The incidence of Hashimoto thyroiditis seen is equal to that of graves' disease (0.3-1.5 cases per 1000 population per year).

Hashimoto's thyroiditis appears to be increasing in prevalence and now more easily detected by sensitive laboratory tests and more invasive procedures such as fine needle aspiration. Hashimoto's thyroiditis is the second most common thyroid lesion next to goiter diagnosed on fine needle aspiration cytology (FNAC), It can accurately diagnose Hashimoto's thyroiditis in most patients. However, a small percentage of cases may be missed due to the inherent limitations of this procedure and the varied cytomorphology of this lesion. Therefore thorough cytological evaluation and an integrated approach are necessary to pick up correct diagnosis and to avoid unnecessary surgery.(16)

The disease is 15-20 times as frequent in women as in men (Bigos etal)⁽⁴⁾ but in our study the frequency is 3.5 times , In the present study the Hashimoto thyroiditis represent (10.2%) of all

patients with goiter and this dissimilar to (ottj etal)⁽⁹⁾ which is found (6.6%)(28/1426).but in series of (shimmel etal)⁽¹³⁾ there is difference where the cases of Hashimoto thyroiditis (5.2%)(25/474)

There is similarity of our study with (stai etal)⁽¹⁵⁾ the incidence of Hashimoto thyroiditis (13.4%).

In our study the euthyroid or subclinical hypothyroid is 16.6% and this result is different from stai etal⁽¹⁵⁾ where the euthyroid cases only 7.4%

The presence of most of our patients during research with hypothyroidism manifestations in compare with other patients in other studies the patients diagnosed by using immunological criteria like Antithyroglobulin Ab(TG) and thyroid peroxidase antibodies

In our work the hypothyroidism state in Hashimoto thyroiditis patients were 72.72% this result similar to, Piraino P etal⁽⁸⁾ 81% the explanation of this difference in results with other studies we depend in diagnosis of Hashimoto thyroiditis on clinical pictures of hypothyroidism while other studies

depend on serological tests before the appearance of hypothyroidism (Chehade JM etal)⁽¹⁴⁾

The number of hashimoto throiditis patients in euthyroid state are 3(16.6%) which is different from (RUSSELL FRASER etal)¹⁷ in which the cases of euthyroid Hashimoto thyroiditis patients (31%)

Hyperthyroidism is well recognized as an early phase. Typical symptoms and signs, including eye signs, have been described⁽¹⁷⁾

Conclusion and Recommendations

In recent years the incidence of hashimoto thyroiditis is increasing . Most cases diagnosed as hashimoto thyroiditis were in hypothyroidism status.

There are strong correlation between histopathological assessment of the destruction of thyroid follicles and thyroid status.

Antithyroglobulin Ab level and antiperoxidase Ab measurement are recommended for early diagnosis of Hashimoto thyroiditis.

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