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Research Article

Screening test for Hashimoto's thyroiditis and hypothyroidism (Screening results)

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Abstract

Disorders of thyroid function are a common problem found in the daily work of family physicians and various specialists. Thyroid function is quite important in a number of organs and systems. Early, prompt recognition and diagnosis of these concerns would contribute to the correct and professional treatment of cases, would prevent the installation of hypothyroidism. The role of the family doctor takes great advantage as the first and most frequent contact is the most. The physician is also often faced with the dilemma of what would be the best cost-effectiveness diagnostic route before these cases? Is the clinic enough? Is imaging alone enough? Is the Laboratory Alone Enough?

Keywords: thyroiditis; echo; laboratory

Introduction

Considering the role and function of the thyroid, the reflection of the consequences of its dysfunction in a large number of systems and organs, interdependence and cooperation with a wide range of specialties, here we present the results of screening work towards Hashimoto's disease and its aftermath. Thanks to hypothyroidism.

Methodology

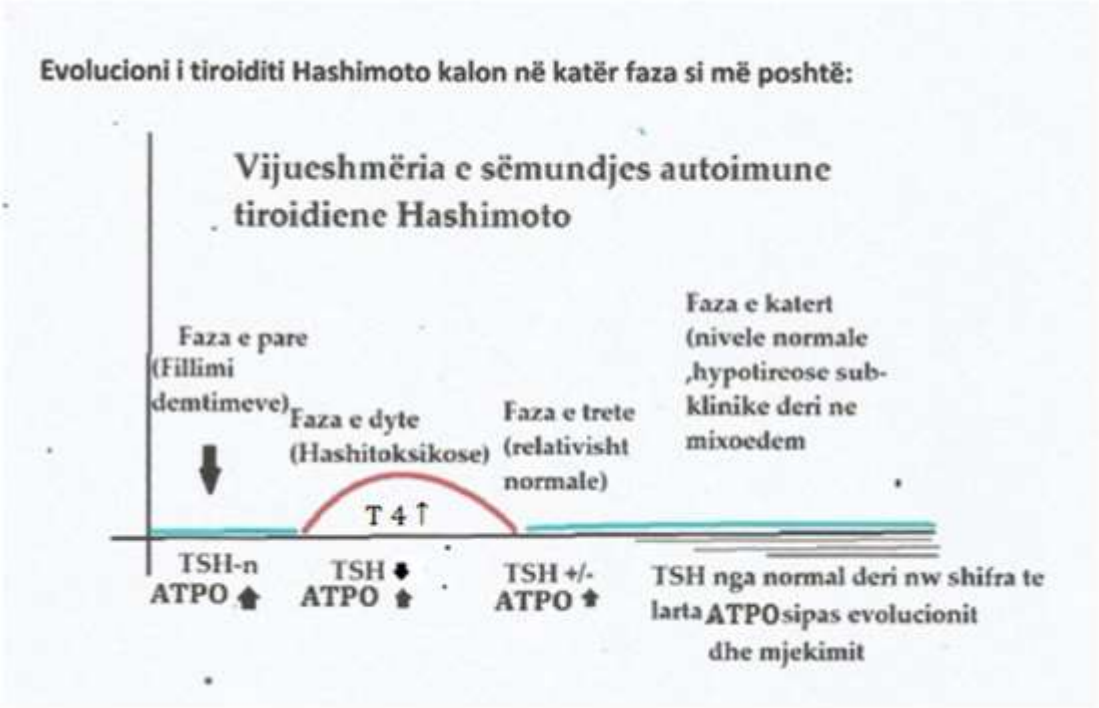
Screening methodology and results and reasons for selecting ultrasound for this screening (in the absence of a rapid test, acceptable cost and maximum accuracy).To make the screening we must consider the clinical stages of Hashimoto's thyroiditis which we are presenting in the table below;

The first stage is the initial stage of lymphocytic infiltration and thyroid cell damage,

Second stage - Hashitoxicosis where we have temporary hyperthyroidism, where after tissue damage an amount of hormone is released into the blood that gives these signs of hyperthyroidism.

The third stage is a "normal" stage where discarded thyroxine continues to be consumed.

The fourth stage part normalizes, part has a "cure" that can be activated, so these cases are kept under observation. Another part passes into sub-clinical and clinical hypothyroidism.



Based on the OMS criteria, from 2008 onwards we practically analyzed the methods which one we should use for spontaneous or continuous screening of Hashimoto's thyroiditis.

For screening in the absence of a rapid and low-cost test, also to enable the detection of most rates with Hashimoto's and hypothyroidism, we have selected ultrasound examination in search of hypoechoic areas — hypoechgenoic pseudonodes and stretch marks. With ultrasound we noticed that through pseudonodes we identify most of the cases affected by autoimmune thyroiditis as those with autoimmune activity (presence of antibodies), those that have returned to normal function, those "cured" and cases that have evolved towards hypothyroidism. By determining TSH we would only detect cases of hypothyroidism, and hyperthyroidism, so the rest would not be detected.

By determining anti-ATPO we would detect only cases with autoimmune activity, as well as by determining anti-Tg, EBV-IgG, EBV-IgM, etc. by defining which we identify a very small part of the cases, i.e. not helping us for mass screening.

With the determination of immunoglobulins not only by cost but the spectrum captured is very narrow and that does not help for mass screening.

Ultrasound not only identifies a large number of patients who have Hashimoto's thyroiditis but well identifies its early stages which is important for any screening.

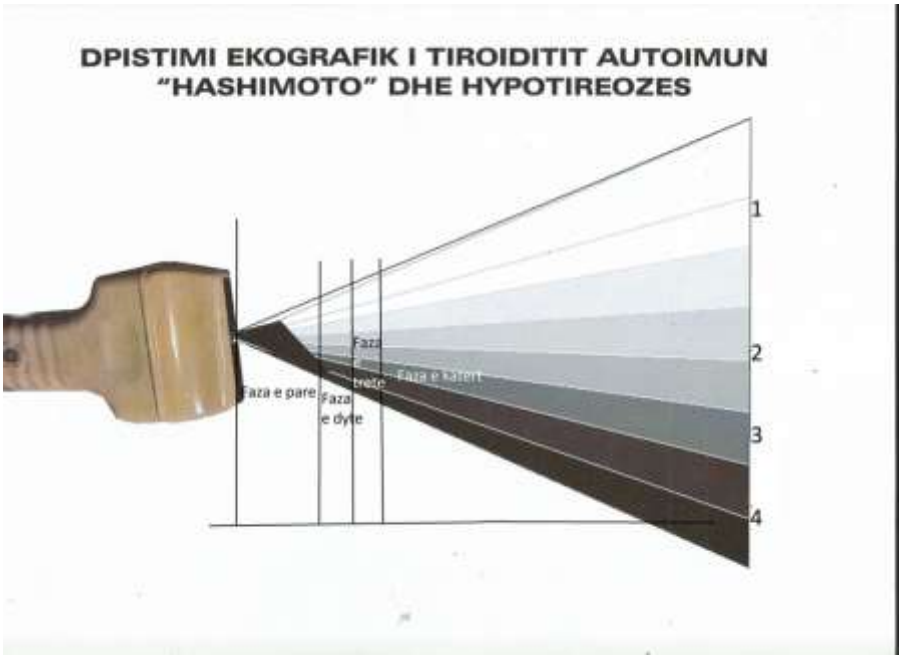
Ultrasound poses no physical or psychological risks

Given the workload that imaginers currently have from a workload, unplanned with the number of patients, they are described quickly and without the details needed by the internist and endocrinologist, and it has been observed that pseudodonts are referred to as nodules, removing the possibility of Hashimoto pseudonodes and thyroiditis. To avoid this we would highlight two moments:

1-On the recommendation sheet for the imager to write: "To be seen and for pseudonode"

2-When it is possible to be sent to a licensed endocrinologist after qualification in the relevant course for ultrasound.

The cost of ultrasound is also lower than the other tests mentioned above, and the benefits are great because the disease is detected either in the early stages or in the late or cured ones and is put on medication improving the quality of life.



Ultrasound examination.

This figure shows the stages of Hashimoto's thyroiditis with ultrasound examination from the first stage, the second stage (hashitoxicosis), the third stage where we have gradual consumption of the hormone that is shed in the blood from necrotic areas of the thyroid and then the fourth stage evolution of lesions and reduction of thyroid function where:

1-A portion of Hashimoto's thyroiditis passes without sequelae (upper white area);

2-Below the light gray area, cases "cured" with a defect that may not currently have laboratory changes for hypothyroidism, or for increased anti-ATPO, EBV-IgG, EBV-IgM. Subclinical hypothyroidism may be common in this area and may progress to hypothyroidism each year.

3-The most pronounced cases (dark gray) where thyroid lesions are more advanced and subclinical and clinically manifested thyroiditis are found, are those cases that should be placed in therapy according to the case

4-Finally the black area where the cases with clinical hypothyroidism enter up to severe cases of mixoedema

On the spectrum of Hashimoto's autoimmune thyroid stages with ultrasound can be identified:

Micropseudonode;

Figure 2-Micropseudonode hypoechogene

From those with normal thyroid function to those that show functional changes. Although a part of the cases do not have clinical and laboratory signs for thyroid or hypothyroidism, they are recorded in the records, and are kept as cases to be re-checked year after year with endocrinologist consultations, echography and, as the case may be, laboratory examinations. The purpose of these periodic checkups is to detect the recurrence of autoimmune activity or the onset of hypothyroidism as early as possible (although in microseudonodes these are very rare).

Large Hypoechogenic areas;

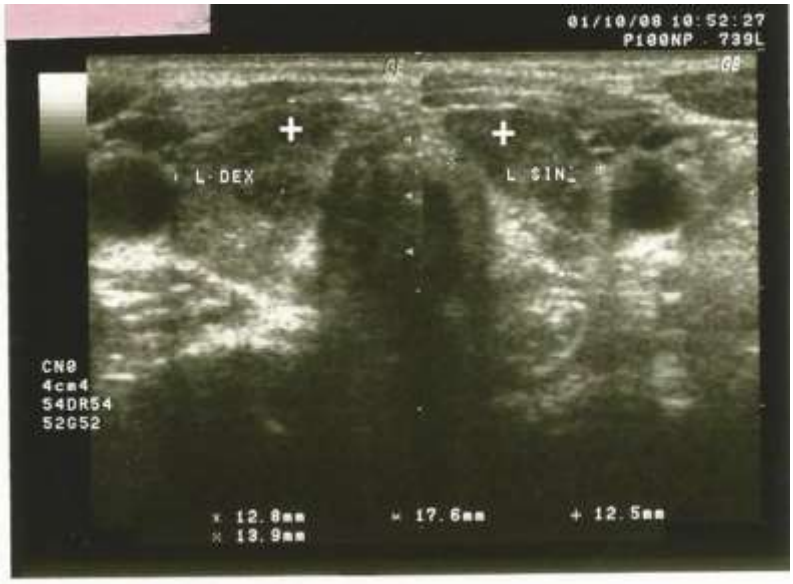


Figure3: Nr3 Large Hypoechogenic areas

In this case we define one or both thyroid lobes, cases which are more advanced for compromising thyroid function, anti-TPO, anti-Tg, (IgG, IM) EBV, changes in TSH and T4 levels, but even with normal laboratory data. Cases with normal laboratory data will be kept under observation year after year to look for the possibility of deterioration, increased autoimmune activity, transition to hypothyroidism, and the appearance of other hypoecogenic plasdars. Depending on the case, they consult with the endocrinologist and other specialists whose field is disturbed (eg gynecology in menstrual disorders or infertility, etc.). In these cases we should pay attention to the reduction of functional thyroid tissue and the reduction of the thyroid gland towards an atrophic thyroiditis.

Pseudonodet multiple hypoechogenic;

Figure 4: Pseudonode multiple hypo echogenic

Often evidenced in both lobes, small, with irregular borders, presented in the cliché above. As described above we have encountered multiple pseudonodes in number and thyroid function has been normal and we have kept an eye on them every year for their change and thyroid function. Also other cases with sub-clinical hypothyroidism, manifested hypothyroidism that are on medication. In the latter we have encountered in some cases striae ultrasound.

Pseudonode hyperechogenic and striatum;

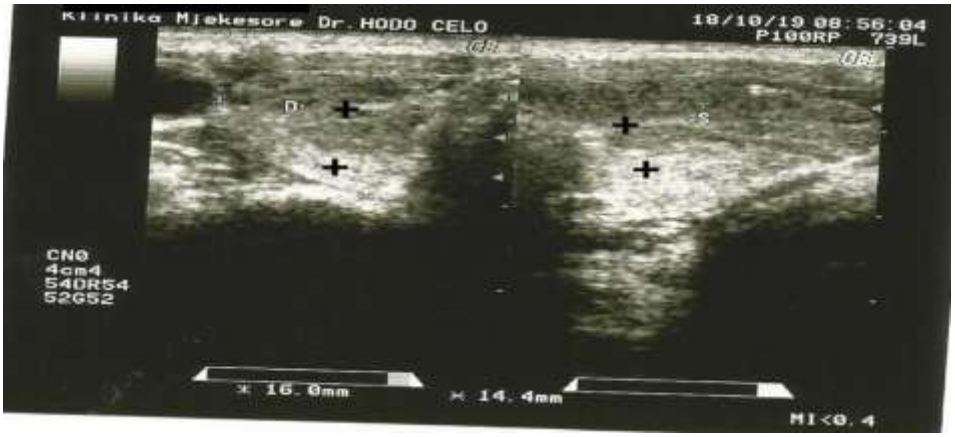


Figure 5: Pseudonode hyperechogenic and striatum

Hyperechogenic pseudonodes have generally been encountered rarely and associated with hypoechoic pseudonodes, Strias have been encountered frequently especially in cases where hypothyroidism is found.

At the end of this spectrum where it is dominated by hypothyroidism we encounter small, atrophic thyroid.

This ultrasound examination is done for cases that after the interview (anamnesis) present data, cases that have data on the card for various thyroid diseases, cases with autoimmune diseases, cases with type 1 diabetes, cases suspected by specialists, can also It is also used for screening in groups, for example, students, employees, etc. in search of thyroiditis and hypothyroidism.

The cases that we have identified pseudonodes are subjected to laboratory examinations initially T4, TSH, anti-TPO, when the latter is normal we can ask for anti-Tg, and EBV-IgG, EBV-IgM, even cases that need to be differentiated with other diseases such as thyroid carcinoma continue with biopsy puncture. Verified cases that have a high antibody titer are placed in diet and medication.

For "cured" cases, follow-up is recommended year after year and in special situations such as pregnancy, post-partum, puberty, pre-climax, climax and the elderly, hypercholesterolemia, etc.

Conclusion; from our experience we think that combining the good anamnesis with the selection of ultrasonographic examination (echo) as the first complementary examination, we consider that cost-effectiveness, the examination is comfortable and full of , we suggest to find application in future protocols.

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