P- 39

Detecting Marine-Lenhart syndrome with a pertechnetate thyroid scan

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Introduction :

Marine lanhart syndrom (MLS) is a rare clinical form of Graves' disease witch is associed with thyroid functioning nodules. It has a prevalence between 0.8-2.7% among patients with Graves' disease. Thyroid scintigraphy is a widely recognized nuclear medicine procedure used to distinguish between different origins of thyrotoxicosis.

Objective :

Improve the usefulness of pertechnetate thyroid scan in the identification of Marine-Lenhart syndrome.

Patients and methods :

In this report we present the cases of five patients who consulted due to a clinico-biological presentation compatible with Graves' disease resistant to antithyroid drug, and who underwent a Tc-99m pertechnetate thyroid scan. The median age was 42,2 (range 19 – 63) years , all the patients were female.

Thyroid scan was performed using a gamma camera, 20 minutes after intravenous injection of 111 MBq of 99mTc pertechnetate, by acquiring static images anterior to the pinhole and parallel collimators after a 5-day withdrawal of dimazole (carbimazole) in patients on synthetic antithyroid medication.

Resultats :

All patients presented diffuse uptake with one (figure1) or more hyperfunctional nodules (figure 2), with no attenuation of surrounding areas on thyroid scintigraphies.

Figure 1 : Thyroid scintigraphy shows enlarged TL, with an increase in the Tc99m entrapment index with a single nodule of autonomous function in the left TL, without inhibiting the uptake of the rest of the gland tissue, corresponding to type 1 MLS.

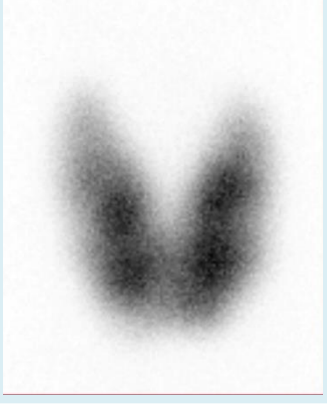

Figure 2 : Thyroid scintigraphy shows enlarged TL, with an increase in the Tc99m entrapment index; four hyper-uptake nodules are distinguished, two in the right TL and two in the left TL, without inhibiting the uptake of the rest of the gland tissue, corresponding to type 2 MLS.

Discussion and conclusion :

Marine-Lenhart syndrome is a variant of Graves' disease, with accidentally functioning nodules. Patients with this form of Graves' disease experience a recurrence of hyperthyroidism even when with high dosses of antithyroids. MLS has three main subtypes of scintigraphic pattern: type 1, high-uptake thyroid and single nodule of autonomous function; type 2, a pattern showing the thyroid with high uptake and two or more hyper-uptake nodules ; and type 3, which presents the characteristics of the previous pattern adding up cold nodules. In such case, thyroid scan aids establish a positive diagnosis by identifying the subtype of MLS and excluding multinodular goiter , which there is increased uptake in nodular areas but under-absorption in the rest of the gland.

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