

Hypertension Secondary to Hyperthyroidism

Ana Catarina Dionísio*, Pedro Carlos, Eduardo Cernadas, José Proença, Leopoldina Vicente

Centro Hospitalar Universitário Cova da Beira Hospital Pêro da Covilhã Quinta do Alvito, 6200-251 Covilhã Portugal

DOI: [10.36347/SJMCR.2019.v07i11.003](https://doi.org/10.36347/SJMCR.2019.v07i11.003)

| Received: 04.11.2019 | Accepted: 11.11.2019 | Published: 18.11.2019

*Corresponding author: Ana Catarina Dionísio

Abstract

Case Report

All patients should undergo a simple screening for secondary forms of hypertension. The most frequent causes for secondary hypertension in young individuals are changes in thyroid function, fibromuscular dysplasia of the renal artery and diseases of the renal parenchyma. We present the case of a 43-year-old woman that has a secondary cause for hypertension. An analytical study showed hyperthyroidism and, after imagiological exams, a toxic nodule was identified. The patient presented tension control after control of the thyroid function, decreasing the risk of associated complications.

Keywords: Hypertension; Secondary causes; Hyperthyroidism.

Copyright © 2019: This is an open-access article distributed under the terms of the Creative Commons Attribution license which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use (NonCommercial, or CC-BY-NC) provided the original author and source are credited.

INTRODUCTION

Secondary hypertension results from a potentially treatable cause. Since arterial hypertension is very common, it is evident that secondary causes (5-15% of the cases of hypertension) are equally frequent[1].

The latest recommendations of the *European Society of Hypertension/European Society of Cardiology*¹ suggest that all patients should undergo a simple screening for secondary forms of hypertension, based on Clinical history, physical examination and laboratory findings. Severe elevation of blood pressure, sudden onset or worsening of hypertension, poor response to therapy and target organ injuries disproportionate to the duration of hypertension should cause suspicion of secondary hypertension. The search for secondary causes for hypertension should be carried out in all individuals below 40 years of age who present hypertension.

The most frequent causes for secondary hypertension in young individuals are changes in thyroid function, fibromuscular dysplasia of the renal artery and diseases of the renal parenchyma[2].

CASE REPORT

We present the case of a previously healthy 43-year-old woman, who is a hypermarket cashier, admitted to the emergency department with an intense

headache associated with an arterial hypertension of 180/110mmhg.

In addition, the patient mentioned having palpitations, as well as having conducted several measurements at home which resulted in high blood pressure values (greater than 140/90mmhg). When questioned, she admitted greater irritability and anxiety, which was related to her professional activity. However, she denied weight loss, changes in intestinal transit and/or increased appetite.

The physical examination did not show any evident alteration, nor did the analytical control performed at the emergency department. The 12-derivation electrocardiogram showed sinus rhythm with increased heart rate. A craniofacial computerized tomogram was also performed which did not show pathological alterations.

She was medicated for hypertension with 20mg of enalapril + 12.5mg of hydrochlorothiazide, and 10mg of propranolol in SOS, having been discharged for an Internal Medicine Consultation to study the possible causes of the secondary hypertension.

In consultation, the patient was normotensive, maintaining occasional palpitations and the need to take 10mg of propranolol. She also said that in the last few days she had episodes of easy choking. Upon the physical examination performed in the Consultation, it was possible to palpate a right thyroid nodule with

about 30mm, movable and painless. No cervical adenopathies and/or supraclaviculars were found.

A study of possible causes of secondary hypertension was initiated, with a study of the thyroid function, determination of catecholamines, metanephrines, cortisol, and a request for a renal ultrasonography, a transthoracic echocardiogram and a thyroid ultrasonography.

The analytic study showed hyperthyroidism with a TSH value < 0.00 uUI/mL, a T4L of 1.11pg/mL and a T3L of 4.79pg/mL.

The remaining study for other secondary causes of hypertension was negative. A thyroid scintigraphy was also requested which identified a hyperfixating nodule and the patient was referred to a General Surgery for a thyroidectomy, already medicated with 7.5mg metibasol a day (Fig.1).

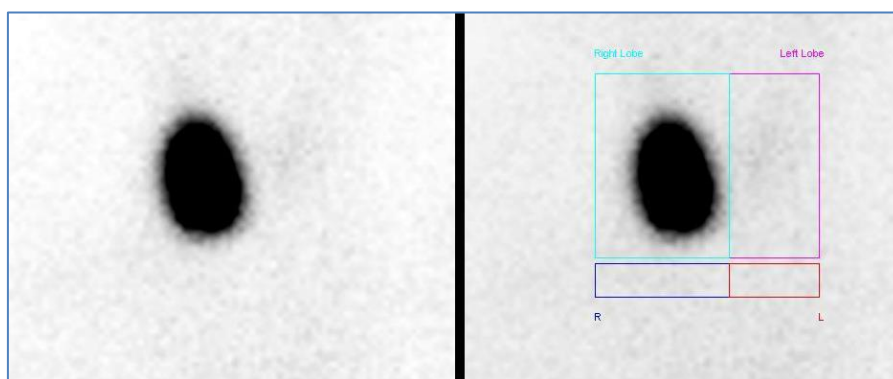


Fig-1: Thyroid scintigraphy identified a hyperfixating nodule in the right lobe

She was submitted to a total thyroidectomy, with resolution of the hypertension after control of the thyroid function and was discharged from the consultation for further follow-up by the physician of General and Family Medicine, medicated with 0.075mcg of levothyroxine a day.

DISCUSSION

The most common causes of hyperthyroidism are Graves' disease (60-88%), followed by toxic multinodular goiter (8-25%) and the toxic nodule (4-15%), with females being the most affected[3].

The most frequent clinical presentation of hyperthyroidism includes palpitations, anxiety, increased sweating, diarrhea, heat intolerance, insomnia and weight loss with normal or increased appetite. The most typical manifestations are tachycardia, arrhythmias, tremors and increased blood pressure. The rarest cases may occur together with exophthalmia and dermopathy, especially in Graves' disease.

The identification of a thyroid nodule during the physical examination enabled the diagnostic orientation of a possible secondary cause for hypertension; however, only after analytical confirmation by thyroid function and exclusion of other possible concomitant causes was it possible to identify hyperthyroidism by toxic nodule as being solely responsible for the arterial hypertension.

The surgical resolution of the case allowed treating the arterial hypertension and the patient presented tension control after control of the thyroid function.

CONCLUSION

This case shows how the early diagnosis of a possible treatable cause of arterial hypertension decreases the risk of associated complications and timely treatment can resolve hypertension in most situations.

REREFENCES

1. Williams B, Mancia G, Spiering W, Rosei EA, Azizi M, Burnier M. 2018 ESH/ESC guidelines for the management of arterial hypertension: the Task Force for the Management of Arterial Hypertension of the European Society of Hypertension (ESH) and of the European Society of Cardiology (ESC). *Eur Heart J*. 2018; 39(33): 3021–3104
2. Viera AJ, Neutze DM. Diagnosis of secondary hypertension: an age-based approach. *Am Fam Physician*. 2010;82(12):1471-8.
3. Galvão-Teles A, Garcia e Costa J, Jorge Z, Dias T. hyperthyroidism//thyrotoxicosis [Internet]. Lisbon: Nucleus of Endocrinology, Diabetes and Obesity [cited 2016 May 29]. Available from: <https://pt.scribd.com/Document/301491766/Hypertroidism>.