Graves' disease in a mediastinal mass presenting after total thyroidectomy for nontoxic multinodular goiter

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Introdution

Thyrotoxicosis after total thyroidectomy (TT) is mostly iatrogenic. Rarely, an hyperfunctional thyroid remnant or ectopic tissue may be the cause.

We report a case of Graves's disease in a mediastinal thyroid mass presenting 7 years after TT for nontoxic goiter.

Case Report

History

A 67 years old caucasian woman was admitted to the emergency department with palpitations, and dizziness in the last two days. She had fatigue for minor efforts, weight loss (11Kg in 3 years) without anorexia, and hand tremor. She had no other complaints.

History of breast cancer at the age of 37 and treated with right radical mastectomy and adjuvant chemotherapy.

Total thyroidectomy for nontoxic multinodular goiter with a dominant colloid nodule of 30mm at the age of 60; the histological analysis confirmed multinodular adenomatous goiter with no signs of malignancy. She was medicated with levothyroxine 100 µg/day since the surgery.

Smoker: 20 cigarettes a day for the last 50 years.

She did not take any other medications. Family history was irrelevant.

Physical examination

Weight: 45 Kg; height: 151 cm; BMI 19,7 Kg/m^2
BP: 122/76 mmHg; HR: 130/min; Temp 36,7ºC
Warm and dry skin. No exophthalmia, no lid retraction or palpebral oedema
Cervical examination: no palpable masses, and no adenomegaly.
The pulmonary sounds were normal and she had no cardiac murmur.
No peripheral oedema. Fine tremor at rest.

Complementary Diagnostic Tests

Haemoglobin	11,5 g/dL	
Leukocytes	9280/µL	
Platelets	219000/µL	
Glycose	84 mg/dL	
Creatinine	0,80 mg/dL	
Urea	35 mg/dL	
Na^+	139 mEq/L	
K^+	4,6 mEq/L	
Free T4	3,22 ng/dL	(0,70-1,48)
Free T3	8,46 pg/mL	(1,71-3,71)
TSH	0,000 µU/mL	(0,35-4,94)

AST	22 U/L	(10-31)
ALT	14 U/L	(10-31)
GGT	13 U/L	(7-32)
Alk Phosphatase	84 U/L	(30-120)
Total Bilirubin	0,42 mg/dL	(<1,2)
Direct Bilirubin	0,08 mg/dL	(<0,4)
BNP	442,2 pg/mL	(<100)
Troponin I	0,010 ng/mL	(<0,08)
Myoglobin	26,2 ng/mL	(<146,9)
CK-MB	0,60 ng/mL	(0,0-6,4)

Electrocardiogram: Sinus tachycardia 114 bpm, without others abnormalities

Chest Roentgenogram: Normal cardiothoracic index, no signs of pulmonary venous congestion. No tracheal deviation.

Admitted to the Endocrinology Department with the diagnosis of iatrogenic thyrotoxicosis.

Evolution

Levothyroxine was stoped. Started bisoprolol 5mg/day.
Haemodynamically stable. Persistence of the rest tremor.

D10 after admission		
Free T4	3,11 ng/dL	(0,70-1,48)
Free T3	9,31 pg/mL	(1,71-3,71)

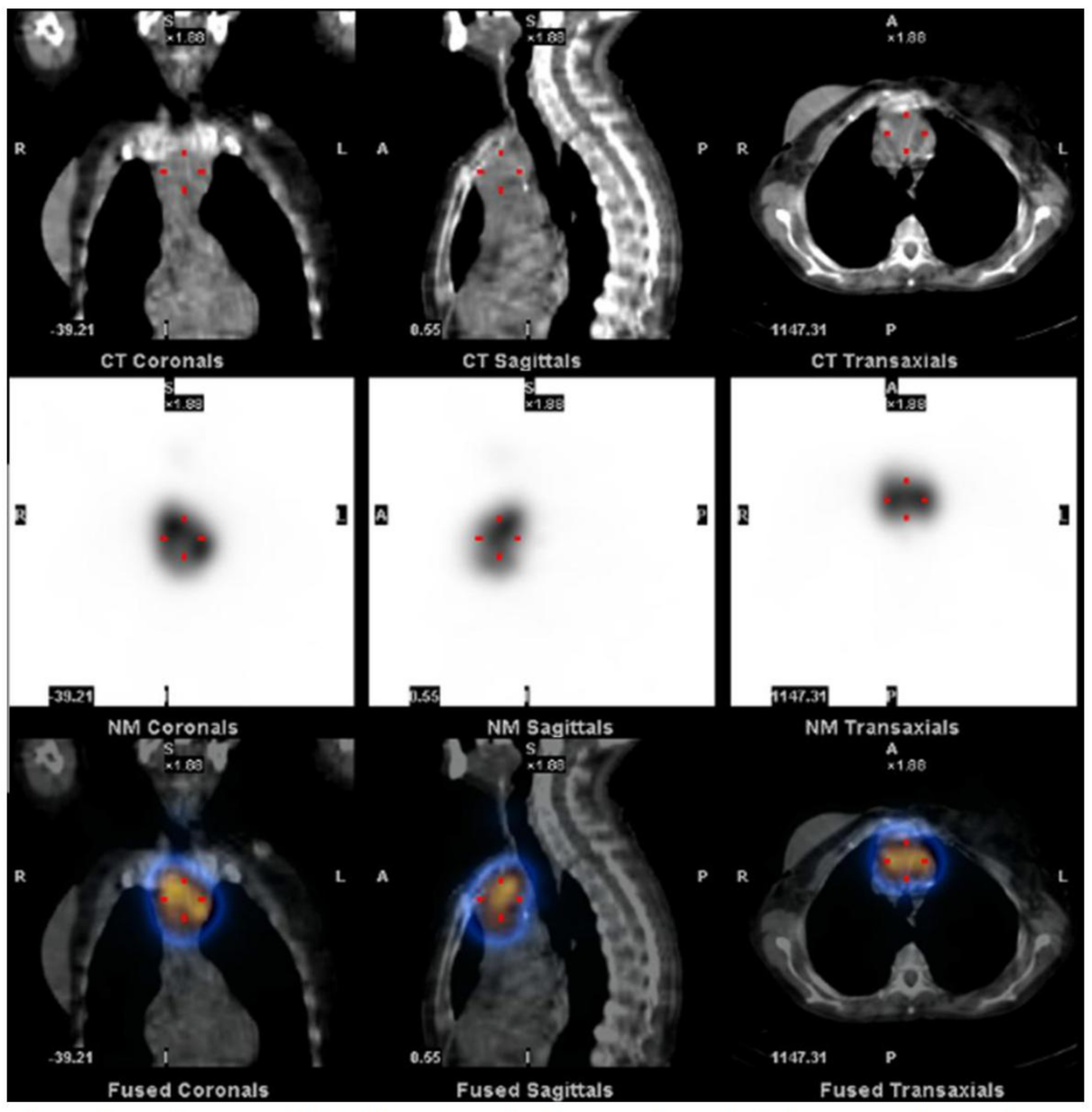
Complementary Diagnostic Tests

Thyroglobulin	294 ng/mL	(0-55)

TRABs	19.7 U/L	(0-1,8)
Anti-TPO	0,6 U/mL	(<5,61)
Anti-Tg	0,4 U/mL	(<4,11)

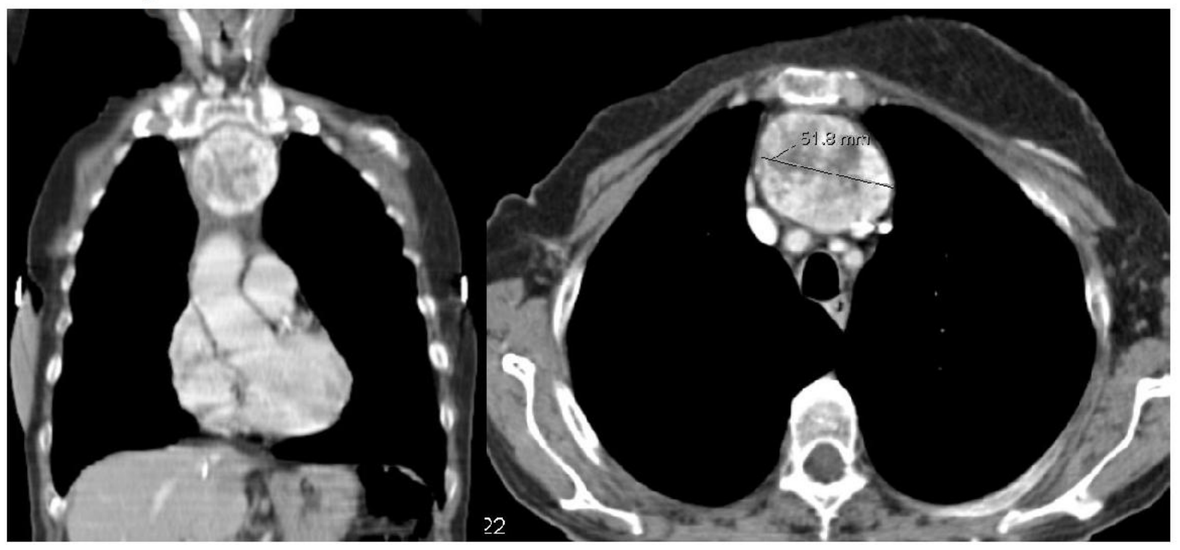
Cervical ultrassound: no thyroid remnant in the gland bed.

Thyroid scintigraphy with I-131 and SPECT:



Intrathoracic mass (60x40mm) with increased radioiodine uptake, and no increased uptake in the thyroid bed

CT scan of the neck and thorax:



Heterogenous mass of 67x46x52mm in the superior mediastin.

Diagnosis

Graves' disease in a mediastinal thyroid mass

Treatment

Methimazole 10mg/day, and bisoprolol 5mg/day.
Three months later she was euthyroid and the mass was removed.

Histology: hyperfunctional tissue with thyroid follicles of variable shape and form with papillary hyperplasia and some adenomatous areas; no signs of malignancy.

Discussion

Although thyrotoxicosis after total thyroidectomy is mostly due to excessive supplementation, physicians should keep in mind the possibility of true hyperthyroidism.

The presence of thyroid tissue after TT in our patient may correspond to a remnant or, less likely, ectopic thyroid tissue that became hyperfunctional in the presence of TRAb's.

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