

Thyrotropin-Secreting Pituitary Adenoma: A Case in which Postoperative Surveillance made a Difference

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Introduction: Thyrotropin-secreting pituitary adenomas are rare entities in clinical practice (0,5-3% of all pituitary adenomas), in most cases requiring appropriate investigation with exclusion of other differential diagnoses, and documentation of autonomous production of TSH.



Case Report:

19-year-old male ♂

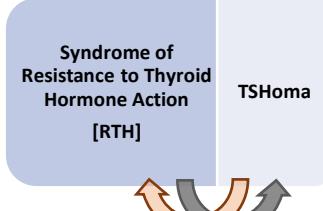
Depressive syndrome, mood changes and history of previous involuntary weight loss.

Thyrotoxicosis with inappropriately elevated TSH

2016

Serum cortisol 11.1 µg/dL	
Prolactin 13.8 ng/mL	RR [4.04-15.2]
TSH 6.83 µU/mL	RR [0.27-4.2]
FT3 7.79 pg/mL	RR [2.0-4.4]
FT4 1.76 ng/dL	RR [0.93-1.7]
Anti-TPO e Anti-Tg	Negative
Total testosterone 4.76 ng/mL	RR [2.8-8]
SHBG 20.6 nmol/L	RR [13-71]
IGF-1 272 ng/mL	RR[243-527]

RR: Reference Range.



Thyroid ultrasound: (...) heterogeneous and micronodular echostructure, compatible with Lymphocytic Thyroiditis"

Thyroid Scintigraphy: "High uptake rate with homogeneous distribution"

MRI: "Asymmetry of the pituitary gland clearly higher on the right; this asymmetry is related to a cystic formation of the right half that is progressively uptake in the dynamic acquisition; This **cystic formation/microadenoma** is 8.2mm high by 9.7mm in transverse diameter"

Serum glycoprotein hormone alpha-sub-unit (α -GSU)
1,17 mUI/mL [RR 0.00-0.80]
 α -GSU/TSH >1

Blunted TSH response in TRH stimulation test.

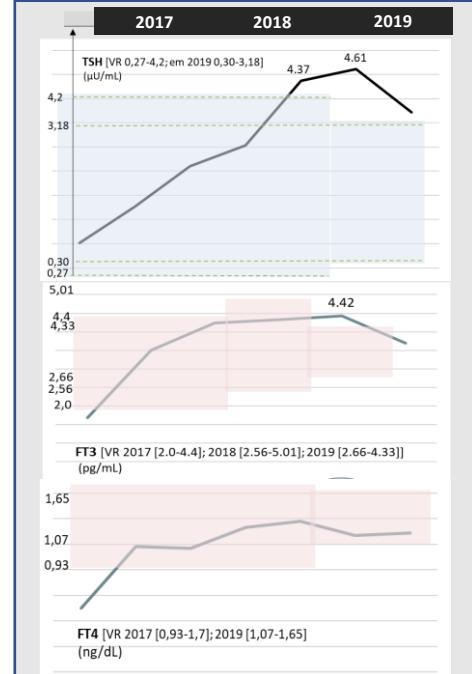
Normal total calcium and phosphorus.
Negative genetic test for RHT.

TSHoma	2016			2017		
	Nov	Dez	Fev	Nov	Dez	Fev
TSH (μ U/mL) RR [0.27-4.2]	11,61	6.86	4,27			
FT3 (pg/mL) RR [2.0-4.4]	7,25	7.81	4,54			
FT4 (ng/dL) RR [0.93-1.7]	2,03	2.03	1,25			

Started monthly Octreotide 20»30mg

March 2017: Transsphenoidal resection of the pituitary adenoma. Histology: No neoplasm was identified. Adeno and neurohypophysis of normal features.

D11 post-surgery: Hypothyroidism with normal TSH
TSH N 1.02 μ U/mL, \downarrow FT3 1.69 pg/mL, \downarrow FT4 0.50 ng/dL



TSH, FT4 and FT3 values above the normal limit in the 3rd year post-op (TSH 4.62 μ U/mL, FT3 4.42 pg/mL) »»» **Recurrence?** MRI with no imaging evidence of recurrence.

↓
2021 **Panic attacks + Thyrotoxicosis**
TSHoma recurrence was assumed.

New surgical approach: Pituitary adenoma with expression of PIT1 and positivity for TSH and PRL.

D15 post-surgery: TSH 0.09 RR [0.30-3.18], FT4 1,41 RR [2.66-4.33], FT3 0,34 RR [1.01-1.65].

Discussion: As a rare entity, definitive diagnosis and treatment of TSHoma proved to be challenging. Surgical removal is the first-line treatment. In our case, first surgery allowed clinical and analytical remission, and postoperative surveillance made a difference with timely detection of TSHoma recurrence. Clinical and analytical follow-up was crucial to adequate therapeutic management.

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