

# Delayed Diagnosis of a TSH-adenoma Due to Coexisting Autoimmune Thyroid Disease

## Background

TSH-secreting pituitary adenomas are rare, accounting for less than 2% of all pituitary adenomas. Their diagnosis may be difficult when a coexistence of other diseases masks the typical clinical and biochemical manifestations of TSH-hypersecretion.

## Objective

To report a case of a TSH-adenoma without signs/symptoms of hyperthyroidism due to underlying autoimmune thyroid disease.

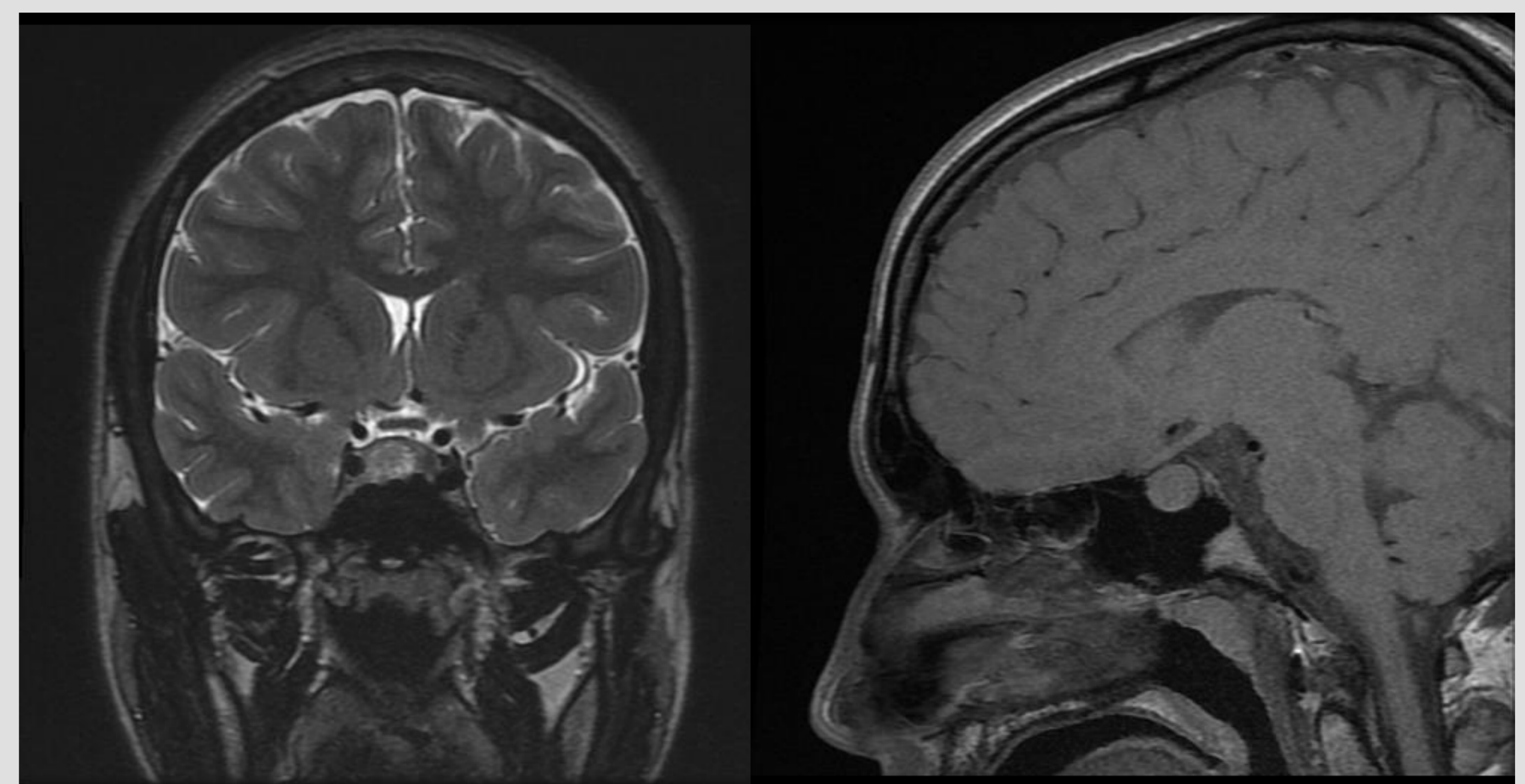
## Results

Patient is a 17 year old male who presented for evaluation of an elevated TSH level. Thyroid levels had been checked because of a strong family history of thyroid dysfunction. Patient had complaints of mildly decreased energy, feeling warm, and jittery, and thought his hair was turning grey. He denied constipation, skin changes, and changes in weight gain or appetite. He felt that his thyroid was enlarged but not tender and denied difficulty with breathing or swallowing.

His exam was only remarkable for firm and mildly tender thyromegaly. His initial lab evaluation showed subclinical hypothyroidism (free T4 15.45 pmol/L (7.7 – 22.5), total T3 2.56 nmol/L (0.85 – 2.61), TSH 17.78 mU/L (0.40 – 5.50)) with positive TPO antibodies (> 1000 IU/ml). Thyroid ultrasound showed mild thyromegaly with innumerable hypoechoic nodules consistent with Hashimoto thyroiditis.

He was started on 75 mcg/day L-thyroxine supplementation for presumed autoimmune thyroiditis. Follow-up tests showed a persistently elevated TSH despite increased fT4 and T3 levels (free T4 21.9 pmol/L, total T3 2.86 nmol/L, TSH 16.09 mU/L). L-thyroxine was discontinued at this time.

Evaluations for interfering antibodies were negative, and IGF-1, LH, FSH, and prolactin levels were normal. However,  $\alpha$ -subunit was 4.4 mcg/L with the  $\alpha$ -subunit/TSH molar ratio elevated at 2.28. A brain MRI was obtained that showed a 12 mm sellar mass with imaging characteristics most consistent with a pituitary macroadenoma.



He was started on Sandostatin LAR (Octreotide acetate) 20 mg monthly. He became hypothyroid within 2 months and was supplemented with levothyroxine. Follow-up MRI showed no substantial shrinkage of the mass and he was referred for Neurosurgical intervention.

**Conclusions** The coexistence of autoimmune hypothyroidism may delay the diagnosis of TSH-adenomas. Practitioners should consider the possibility of a TSH-secreting pituitary adenoma when TSH levels do not adequately suppress in response to L-T4 replacement therapy and elevated thyroid hormone levels.

## References

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The authors have nothing to disclose.

