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OBJECTIVE

- Normal or elevated TSH level in the presence of elevated T4 is defined as “inappropriate TSH syndrome”.
- Two main clinical conditions that can lead that syndrome are TSH secreting adenoma (TSHoma) and resistance to thyroid hormone (RTH).
- Making the correct diagnosis is crucial in order to decide the most appropriate treatment option.
- Herein we presented clinical and laboratory data of seven patients who were hospitalized for the differential diagnosis of the two clinical entities.

METHODS

- Our database was reviewed for the patients diagnosed with inappropriate TSH syndrome at our hospital between 2010-2014
- After exclusion of the other rare causes of inappropriate TSH syndrome, seven patients who were hospitalized for the differential diagnosis of TSHoma and RTH were included in this report

RESULTS

- Age of the patients was changing between 20 and 52 years.
- Clinically two patients were asymptomatic, three had tachycardia and weight loss and one had goiter.
- Final diagnosis was RTH in four patients, TSHoma in two and unequivocal in one.
- Two patients diagnosed with TSHoma were operated and had positive staining with TSH.
- Both of the TSHoma cases had macroadenoma on pituitary MRI and visual field defect while two of four patients with RTH had microadenoma.
- Alpha-subunit/TSH molar ratio was above 1 in all patients diagnosed with TSHoma while it exceeded 1 in two patients with the final diagnosis of RTH.

- TRH stimulation test revealed a blunted response in all patients with TSHoma and a positive response (increase >100%) was observed in all with THR. TSH was suppressed after T3 suppression test in all patients with the final diagnosis

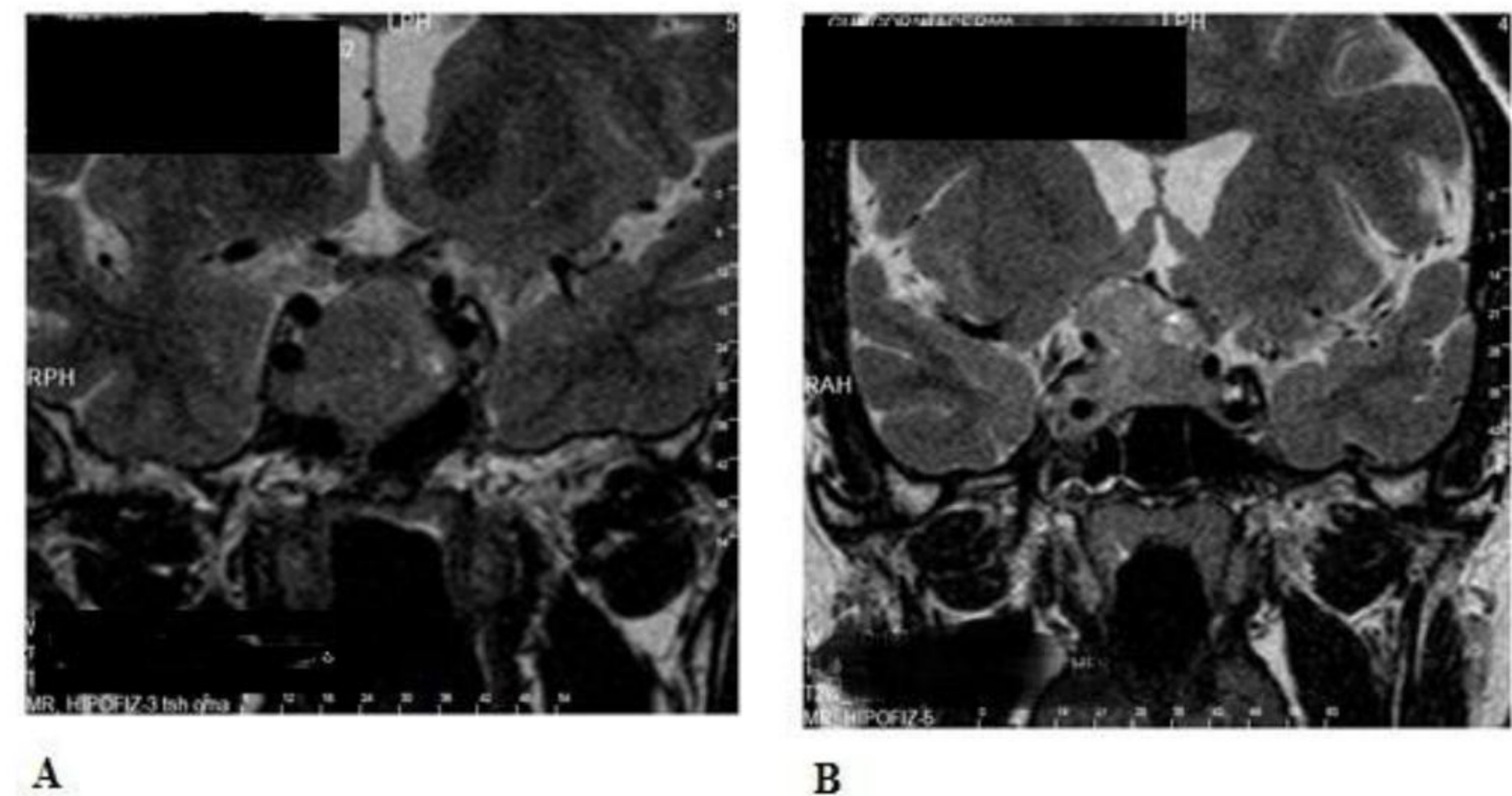


Figure 1: Macroadenomas in two patients with TSHoma detected with pituitary MRI



Figure 2: Microadenoma of the 4th patient diagnosed with RTH

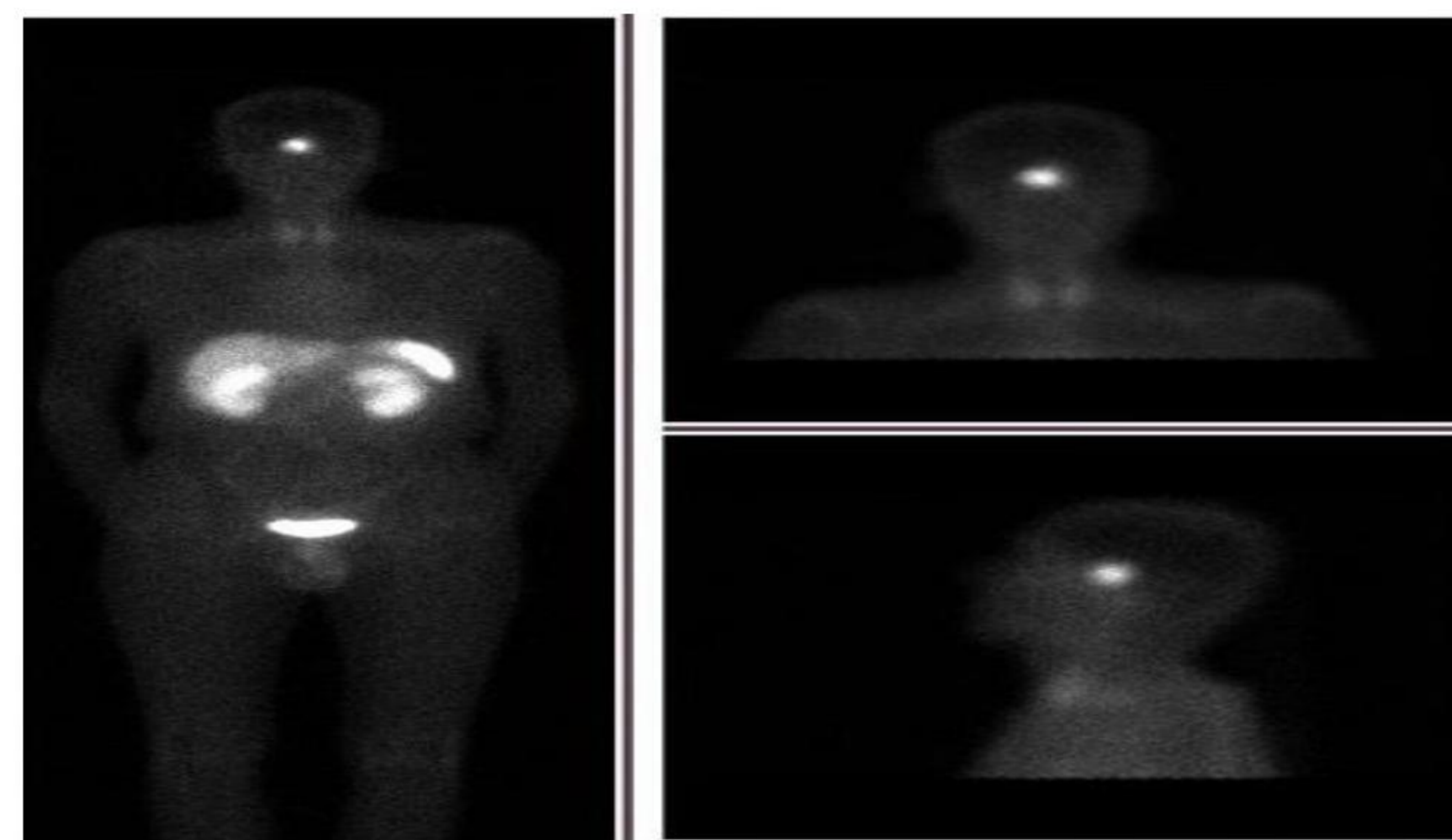


Figure 3: Appearance of the macroadenoma on octreotide scan in case 6

CONCLUSION

- Differential diagnosis of RTH and TSHoma can be a clinical challenge and requires complex hormonal tests and imaging methods. Since incidental pituitary tumors are not rare, presence of an adenoma should not rule out diagnosis of RTH

