TSH SECRETING PITUITARY ADENOMA: A CASE REPORT

Feyza Yener Ozturk, Selvinaz Erol, Savas Karatas, Muhammed Masum Canat, Idris Kuzu, Yuksel Altuntas

Sisli Etfal Training and Research Hospital
Department of Endocrinology and Metabolism, Istanbul-TURKEY

INTRODUCTION

Thyrotropin secreting pituitary adenomas are rare, constituting less than 2% of pituitary adenomas. Thirty percent of these tumors may be plurihormonal. Most common cosecreted hormone is GH and the least one is PRL. We report here a case of plurihormonal pituitary adenoma symptomatic for TSH secretion.

CASE REPORT

A 35 year old female admitted to hospital because of fatigue, heat intolerance, headache, galactorrhea and menstrual irregularity. Her laboratory analysis showed hyperprolactinemia (PRL:74 ng/ml), and high fT3 level with inappropriately normal TSH. TSH:3,14 uIU/mL (N:0,27-4,2 uIU/ml) fT3:4,67 pg/ml (N:1.96-4.36), fT4:1,24 ng/ml (N:0,72-1,56 ng/dl). Growth hormone level was also high but IGF-1 levels were all normal and she didn't have any signs or symptoms of acromegaly. Pituitary MRI showed 18x15 mm macroadenoma extending to suprasellar region. She was followed-up with cabergolin for a year. Then she had transsphenoidal hypophysectomy. The immunohistochemical staining showed that tumor cells were strongly reactive to GH, PRL and TSH; Ki67 index was 2%. Four months after operation, she got pregnant. There was no biochemical abnormality during pregnancy. Her pituitary MRI didn't show any residuel image. But at postpartum 2nd month, high fT3 and fT4 levels were revealed. PRL was 60 ng/dl (analysis was done 4 hours after breastfeeding), FT3:4.39 pg/ml, FT4:1,66 ng/dl, TSH: 2,33 uIU/mL, GH:2,09 ng/ml, IGF-1:205 ng/ml (N:109-284), cortisol was suppressed after dexamethasone suppression test (1,57mcg/dl). Physical examination revealed only tachycardia. Thyroid autoantibodies were all negative. Thyroid USG was normal other than a 5,3 mm heterogenous, isoechoic nodule. SHBG was normal but glycoprotein alpha subunit to TSH molar ratio was high . TSH levels failed to increase after TRH stimulation test. A pituitary adenoma 12x11 mm in diameter compressing the optic chiasm, obliterating the suprasellar cystern was found on MRI. Visuel field was normal. Octreotide LAR 20 mg/month and propranolol 40 mg/day were started. After the 3 months treatment period, her laboratory tests were normal as shown in table-1. Pituitary MRI showed a 9x6x11 mm macroadenoma and a regression in diameter and compression of optic chiasm. Reoperation has been planned.

CONCLUSION

This case emphasizes that all pituitary adenomas should be screened for secretion of all hormones and immunohistochemical staining of all pituitary hormones is mandatory for correct classification.

Table-1: Laboratory results of patient before and after Octreotide LAR 20 mg/28 days treatment of 3 months period.

	Basal	3 months after treatment
TSH (n=0,27-4,2 uIU/ml)	2,3 uIU/ml	1,55 uIU/ml
fT4 (n=0,72-1,56 ng/dl)	1,66 ng/dl	1,17 ng/dl
fT3 (n=1,96-4,36 pg/ml)	4,38 pg/ml	2,94 pg/ml
GH (ng/ml)	2,09 ng/ml	0,54 ng/ml
IGF-1 (n=109-284 ng/ml)	205 ng/ml	155 ng/ml
Prolactin (n=6-29,9ng/dl)	60 ng/dl	14 ng/dl
α-glycoprotein subunit (n=0-0,9 IU/L)	0,74 IU/L	0,45 IU/L
SHBG	97.1 nmol/L	55,1 nmol/L
α-glycoprotein subunit/TSH molar ratio	3,2	2,9

Table-2: Results of TRH (400 mcg) stimulation test

TRH (400 mcg) STIMULATION TEST	TSH (uIU/ml)
0. min	2,6
20.min	3
40.min	3,18
60.min	3,02
90.min	3,38

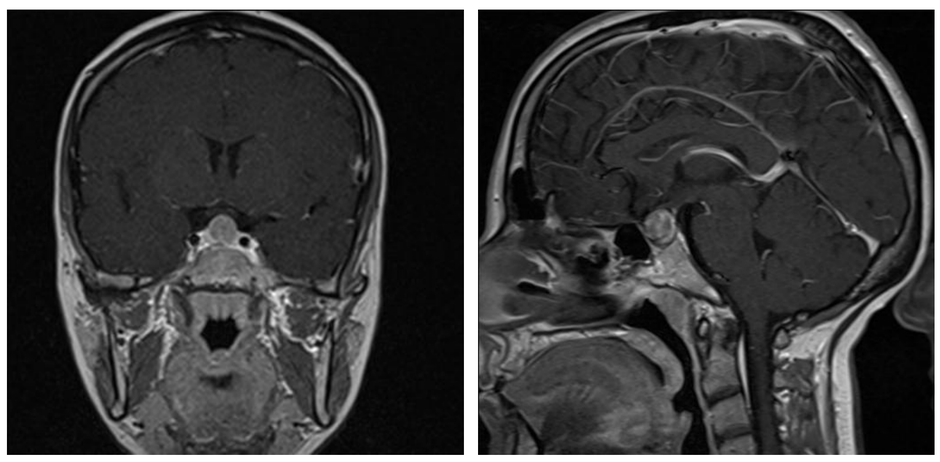

Figure-1: Postcontrast T1 weighted MRI after her pregnancy : coronal and sagittal sections visualising pituitary macroadenoma (12x11 mm) with compression to optic chiasm and obliterating suprasellar cystern.

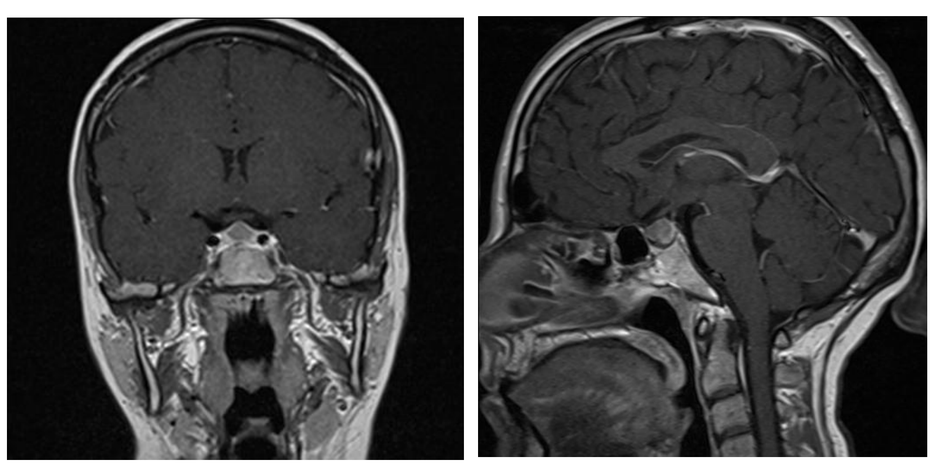

Figure-2: Postcontrast T1 weighted MRI after 3 months of Octreotide LAR 20 mg/28 days treatment: coronal and sagittal sections visualising pituitary adenoma of 9x6x11mm with regression in diameter and compression to optic chiasm.