

Effectiveness of octoreotide administration before surgery for GH · TSH co-secreting pituitary adenoma with thyrotoxicosis – a case report

¹Shihori Kimura, ¹Osamu Isozaki, ¹Izumi Fukuda, ¹Satoshi Morimoto, ¹Yasufumi Seki, ¹Kaoru Yamashita, ¹Noriyoshi Takano, ¹Akiko Otsuki, ¹Terumi Kaneshige, ¹Kanako Bokuda, ¹Daisuke Watanabe, ¹Takashi Ando, ¹Naomi Hizuka, ²Kosaku Amano, ³Takashi Komori, ²Yoshikazu Okada, ¹Atsuhiro Ichihara



Department of Medicine I¹, Department of Neurosurgery² and Department of Pathology³
Tokyo Women's Medical University, Tokyo, Japan

Key words; GH, TSH, pituitary adenoma, somatostatin analogue, octoreotide, perioperative treatment

INTRODUCTION

The first line of treatment for TSH producing adenoma is surgical removal of tumor. Hyperthyroidism often causes perioperative thyroid storm. We report a case of GH-TSH producing pituitary adenoma whose thyrotoxicosis was successfully controlled by subcutaneous administration of octoreotide (OCT) for 5 days before surgery.

CASE

Case : A 47-year-old Japanese woman

Chief Complaints : hyperhidrosis and palpitation

Present Illness : The patient has been having excessive sweating and throbbing for these 7 years. She also presented acromegalic change, such as increasing ring size and shoe size. MRI showed 18 × 12 × 9 mm pituitary tumor with supra-sellar extension without compression of chiasm. **Past History** : nothing particular, **Family History** : Mother : Rheumatoid arthritis

Physical Examinations : Height 158.5 cm, Weight 52.1 kg, BMI 20.7 kg/m², BT 36.6°C, BP 108/69 mmHg, PR 98/min, regular, enlargement of nose, no significant thyromegaly



Endocrinological Examinations

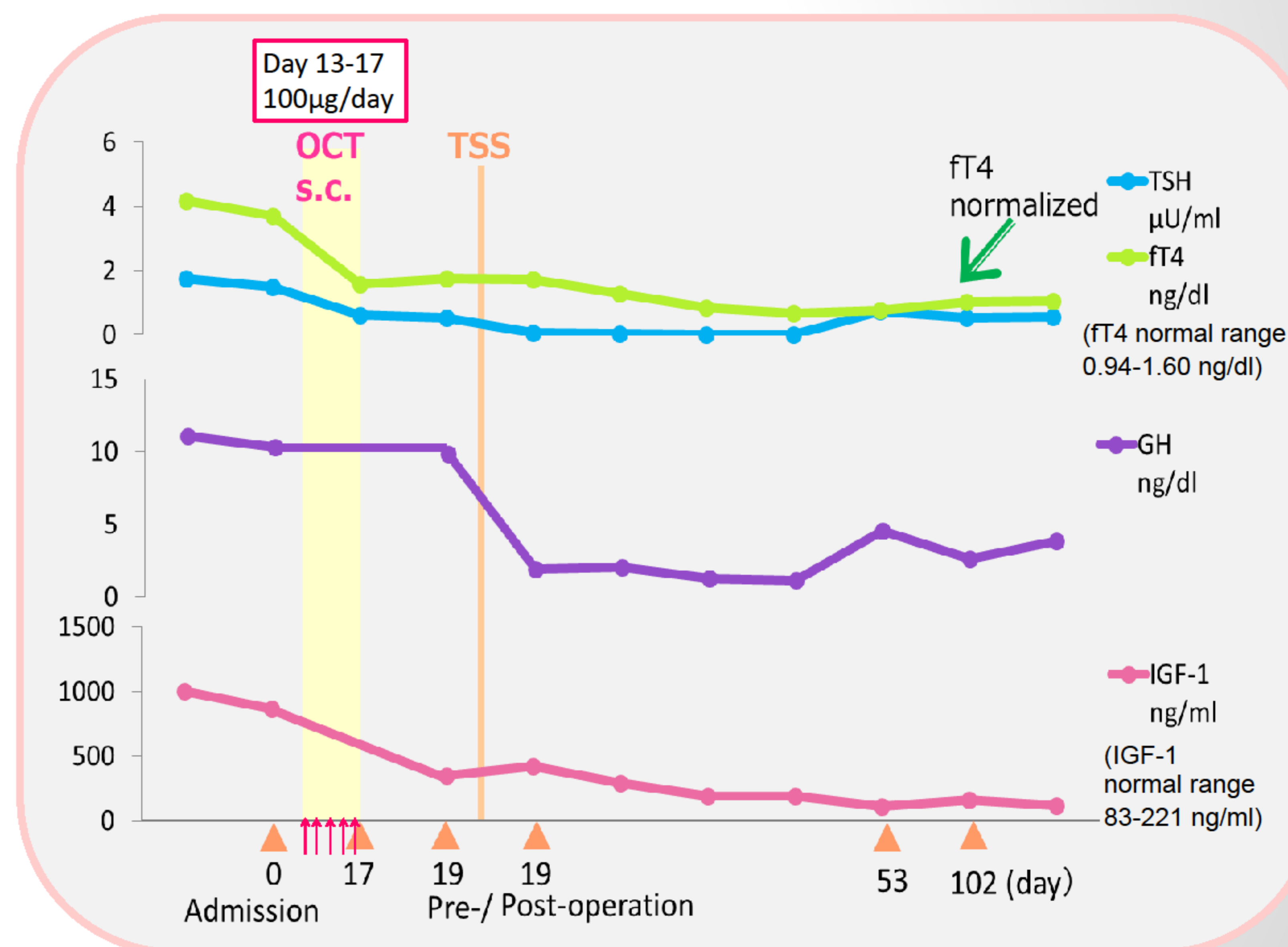
WBC	4350	/μL	ACTH	24.4	pg/ml	PRL	19.4	ng/ml
Hb	13.3	g/dl	cortisol	6.9	μg/dl	TSH	1.500	μU/ml
Hct	39.3	%	LH	1.1	mIU/ml	ft3	8.06	pg/ml
Plt	32.4	× 10 ³ /μl	FSH	2.2	mIU/ml	ft4	3.72	ng/dl
Alb	3.4	g/dl	E ₂	42.7	pg/ml	Tg	51.1	U/ml
AST	18	U/l	Proges-terone	4.52	ng/ml	TgAb	12	U/ml
ALT	11	U/l	GH	10.31	ng/ml	TRAb	0.7	IU/l
BUN	7.6	mg/dl	IGF-1	861	ng/ml			
Cre	0.30	mg/dl						
UA	4.3	mg/dl						
Na	141	mEq/l						
K	4.3	mEq/l						
Cl	109	mEq/l						
Ca	9.0	mg/dl						
IP	3.6	mg/dl						
FBS	89	mg/dl						
HbA1c	5.5	%						
LDL-C	74	mg/dl						
HDL-C	62	mg/dl						
TG	45	mg/dl						

		0min	60min	90min	120min
75g oGTT	BS (mg/dl)	88	199	229	223
	GH (ng/ml)	10.26	17.09	12.42	12.32
TRH	TSH (μU/ml)	1.420	2.480	1.670	
	PRL (ng/ml)	14.8	32.7	21.2	
	LH (mIU/ml)	4.9	17.9	16.6	
	FSH (mIU/ml)	7.5	12.3	12.8	
CRH	ACTH (pg/ml)	21.1	60.7	47.9	
	F (μg/ml)	8.4	19.5	10.4	

		0min	120min	240min	360min	480min
OCT50μg	GH (ng/ml)	11.42	0.68	0.69	1.55	3.19
	TSH (μU/ml)	1.370	0.374	0.259	0.261	0.341
	PRL (ng/ml)	9.1	7.9	8.3	11.6	11.5

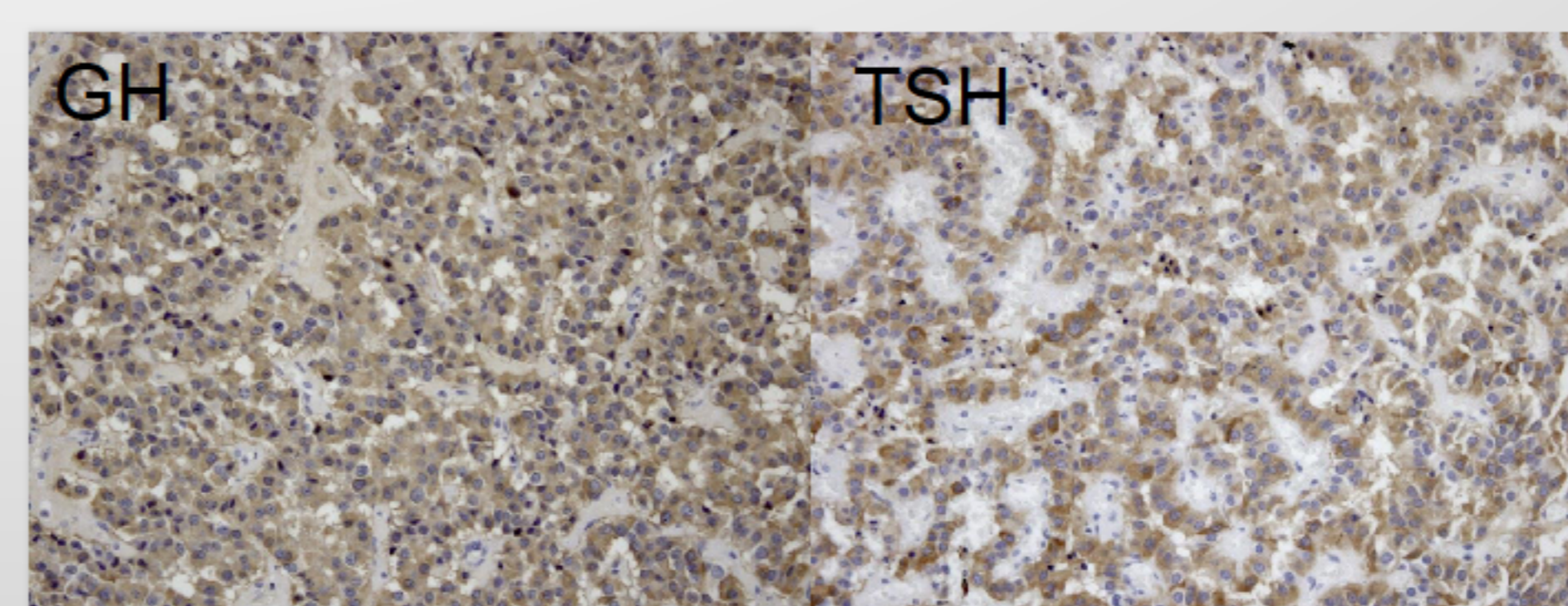
CLINICAL COURSE

GH-TSH producing pituitary adenoma was suspected. From the next day of the OCT (50 μg) loading test, 100 μg of OCT was subcutaneously injected daily to prevent perioperative thyroid storm. Hyperhidrosis and palpitation disappeared, and after 5 days of injection, serum levels of ft4, ft3 and IGF-1 were decreased to 1.53 ng/dl, 2.65 pg/ml, and 350 ng/ml, respectively before surgery.



Pituitary adenoma was completely and uneventfully removed via trans-sphenoidal-surgery and her all hormone levels were normalized without any medication afterward.

PATHOLOGY



The tumor cells were positive for both GH and TSH with MIB-1 positive ratio of <1%.

CONCLUSION

In our patient with GH-TSH producing pituitary adenoma, thyrotoxicosis was successfully controlled by short-period OCT therapy and thus trans-sphenoidal-surgery could be performed safely. In a case with GH-TSH producing adenoma with severe thyrotoxicosis, pretreatment with OCT may be worth being done before surgery.

