



Fig. 3 Laboratory findings in patients with tumors in sellar region. GTH-secretion stimulated by LH-releasing factor.

A-58. Systematic Pituitary Function Tests of the Sellar and Parasellar Tumor Cases

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Systematic pituitary function tests of 14 sellar and parasellar tumor cases (8 craniopharyngiomas, 3 pituitary chromophobe adenomas, 2 tuberculum sellae meningiomas and a pinealoma in the chiasmal region; 1972, February–October) were studied using Insulin Tolerance Test for GH and ACTH, LH-RH Test for LH & FSH, and TRH Test for TSH.

Results were as follows:

Hypopituitarism of the cases						
Histological Diagnosis	GH	ACTH	LH	FSH	TSH	
Craniopharyng. cystic	2/3	0/1	0/2	1/2	2/4	
solid	3/3	1/3	3/3	3/3	2/4	
Chromophobe adenoma	3/3	1/3	0/3	0/3	1/3	
Tuberc. sel. mening.	0/1	0/2	0/1	0/1	0/1	
Ectopic pinealoma	1/1	0/1	-	-	0/1	
Total	9/11	2/10	3/9	4/9	5/13	

Concerning about our present cases,,the followings were suggested;

- 1) Incidence of the hypofunction of the pituitary peptide hormones were the highest in GH and the lowest in ACTH, but it was not always true in individual case.
- 2) The hypofunction of LH & FSH and TSH was observed more frequently in solid craniopharyngiomas than solid pituitary chromophobe adenomas.

A-59. Morphological and Functional Properties of Human Pituitary Adenoma Cells

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Various types of human pituitary adenomas (30 cases) and 1 case of human normal pituitary gland were cultured by the monolayer method. Morphology of the cultured pituitary adenoma cells was studied by phase-contrast microscopy and/or by scanning electron microscopy. Two types of cells were recognized in the culture of chromophobe adenomas, namely, (1) small round cells with smooth surfaces, (2) large cells with rough, granulated surfaces. Some of the type (2) cells could be labeled with fluorescein isothiocyanate (FITC)-antiHGH globulin. The pattern of hormone secretion (growth hormone, luteinizing hormone, follicle stimulating hormone) of the cultured cells was investigated by radioimmunoassay. Not only functioning adenomas, but also non-functioning chromophobe adenomas were found to secrete hormones *in vitro*. Even in some of the latter cases, high levels of hormones were detected irrelevant to their clinical endocrinological examination which had revealed no response to hormone releasing factors.

These findings indicate; (1) hormones are produced in large cells, (2) nonfunctioning chromophobe adenomas consist of various types of cells which are different in their hormonal activities.

The chromophobe adenomas of Nelson's syndrome showed very unique morphological characteristics in culture; large polygonal cells formed follicular arrange-