

A mysterious pituitary adenoma

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Introduction:

Acidophilic stem cell adenoma of the pituitary is a very rare type of pituitary tumour with a prevalence of about 0.2%(1). They arise from common progenitor cells of growth hormone and prolactin cells(2). It is an aggressive adenoma with an invasive nature(3). There are only few case reports of acidophilic stem cell pituitary adenoma.

Clinical presentation:

We present a case of 33 year-old lady with ten-months history of amenorrhea and two months history of spontaneous galactorrhoea. She had a history of successful IVF pregnancy for unexplained infertility. No symptoms or signs suggestive of hypercortisolism or acromegaly. Investigations: Prolactin 1698 IU/ml (40-500), IGF1 416mcg/l (109-324) and normal OGTT with GH(table1), IGF1 binding protein 3: 3.6ug/l (1.7-5.2), rest of the pituitary hormone profile. MRI head revealed Pituitary macroadenoma 15x21x19mm (Figure1).

She was commenced on cabergoline 250mcg/week. After 6 months on treatment; regular periods with no galactorrhoea, but had new symptoms of fatigue and excessive sweating. Prolactin 36 IU/l, IGF1 415mcg/L. Repeat OGTT with GH (table 2) suggested acromegaly.

Patient had trans-sphenoidal resection that revealed aggressive acidophilic stem cell pituitary adenoma with negative GH immunostain. Postoperative MRI pituitary(Fig2) showed no residual tumor with prolactin 708 IU/l and IGF1 104ug/l. Clinically she remains asymptomatic and awaiting treatment for uterine polyp.

Keywords: IVF- invitro fertilization, BMI- body mass index, IGF1- insulin growth factor 1, OGTT- oral glucose tolerance test, GH- growth hormone, MRI- magnetic resonance imaging.

Fig1. MRI pituitary showing adenoma

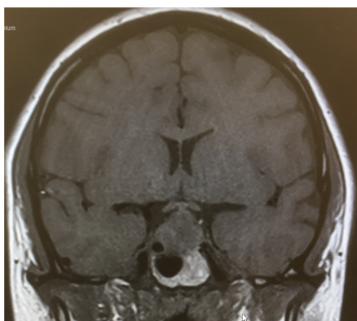


Fig2: MRI scan after transsphenoidal surgery of pituitary with postoperative inflammation.

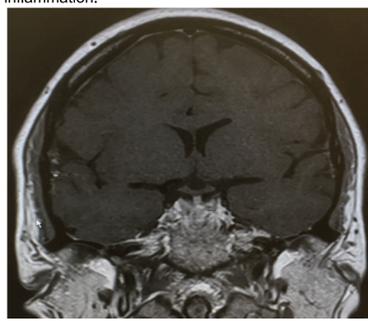


TABLE 1: OGTT with GH

Time in min	Growth hormone mcg/L
0 Min	0.67
30 min	0.63
60 min	0.75
90 min	0.62
120 min	0.46

TABLE 2: OGTT with GH

time in min	Growth hormone mcg/L
0 min	1.9
30min	1.4
60 min	1.4
90min	1.3
120 min	1.2

Discussion:

In our patient, although the IGF1 level was high, IGF binding protein 3 and initial OGTT with growth hormone measurement showed normal response. It is quite possible to hypothesise that the tumour cells could be secreting molecule(s) possessing the biological activity but not the antigenicity of the GH (3). However, she developed some acromegalic clinical features on cabergoline treatment and acromegaly was confirmed by biochemistry. There is a case report of acidophilic stem cell pituitary adenoma on bromocriptine treatment resulting in increased GH secretion (4). Histopathology was interestingly negative for GH, which can be a feature of acidophilic stem cell pituitary adenoma (3). In our patient, post-operative prolactin level remained high with suppressed IGF1 level. High prolactin level after surgery was reported in earlier case studies (3). There has been previously reported association of uterine polyps with Acromegaly(5).

Conclusions:

Acidophilic stem cell pituitary adenoma is a fast growing aggressive tumour. Being a stem cell tumour, it is plausible that GH is produced in an immature form and is not detected by the conventional GH assay methods or the standard immunostaining methods. Dopamine agonist therapy may have a role in altering the biochemical behavior of this tumour. More case studies are needed to understand this rare tumour better.

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