A case report of an invasive giant prolactinoma extremely sensitive to

low-dose cabergoline treatment with rapid tumor shrinkage complicated by CSF rhinorrhea

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**Introduction**: Prolactinomas are the most common

pituitary tumors, and dopamine agonists are an effective

first-line treatment in most cases. Giant prolactinomas

(≥4 cm) are rare (2–3%), usually present in men, and are

often accompanied with very high prolactin levels, that

may be resistant to medical treatment.

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**Case report**: A 42-year-old man presented with

headaches, decreased libido, gynecomastia, and several

episodes of absence seizures. MRI brain revealed a

large mass (44x80x51mm) involving the pituitary sella

that invaded the whole sphenoidal sinus and both cavernous

sinuses, with extension towards the posterior

fossa. There was massive suprasellar expansion up to

foramen of Monro, compressing the optic nerves and

chiasma. Serum prolactin was markedly elevated at 32

000 mcg/l (normal: 4–15.3 mcg/l) and associated with

hypogonadotropic hypogonadism (serum testosterone:

1.4 nmol/l, LH <0.1 IU/l, FSH 1.0 IU/l). Thyroid,

adrenal, somatotrope and posterior pituitary function

was normal. Cabergoline was commenced with initial

dose of 0.125 mg/week with a rapid fall in serum prolactin

(6937 mcg/l within 4 weeks). With further dose

titration to 0.25 mg/week, and thereafter finally to 0.5

mg/week, prolactin levels continued to decline (up to

930 mcg/l at 26 weeks). Repeat pituitary MRI scanning

demonstrated a progressive reduction in tumor volume.

This was, however, complicated by CSF rhinorrhea

due to an osteo-meningo sphenoidal defect caused

by the expansive tumor mass. The patient was referred

to a neurosurgeon and promptly operated. A transnasal

partial resection of prolactinoma with repair of

CSF rhinorrhea was performed. Pathology studies

revealed a prolactin secreting pituitary adenoma, Ki67

1%. An increase in post-operative prolactin levels was

observed (3253 mcg/l). Cabergoline treatment was not

restarted because of post-surgical complications (cerebral

hemorrhage, ischemic stroke and chronic subdural

hematoma).

**Conclusion**: Medical therapy with dopamine agonists

can be an effective strategy and is the first line of

treatment for giant prolactinomas. Careful supervision

in cases with locally invasive tumors might decrease the

risks of complications caused by rapid changes in adenoma

volume with even low dose dopamine agonists.