GIANT INVASIVE PROLACTINOMA

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Introduction

Prolactin-secreting adenomas are the most common pituitary tumors and a common cause of pathological hyperprolactinemia. Prolactinomas are classified according to their size: microprolactinomas are <1 cm in diameter and macroprolactinomas range from 1 to 4 cm. Giant prolactinomas are > 4cm. Giant prolactinomas are rare and account for only 1-5% of all prolactinomas.

In giant prolactinomas, the prolactin levels are usually between 1,000-100,000 ng/mL. They may be locally aggressive leading to visual damage and ophthalmoplegia. The typical clinical manifestations in men include hypogonadism, erectile dysfunction, visual symptoms, weakness, and headaches. Women usually present amenorrhea, headaches, visual dysfunction, and galactorrhea.

Treatment goals include normalizing hormonal levels and promoting tumor shrinkage with dopamine agonists. Surgery and radiotherapy may be considered for refractory cases.

Keywords: Prolactinoma, Hyperprolactinemia, Pituitary gland.

Case presentation

A 27-year-old man with a one-year history of headache, diminished visual acuity (VA), erectile dysfunction, and decreased libido. History was remarkable for atrial septal defect with Eisenmenger syndrome and cryptogenic cirrhosis.

Physical exam revealed bitemporal hemianopsia (Optical Coherence Tomography of the optic nerve revealed loss of the nasal ganglion cells of both eyes). Laboratory testing revealed low luteinizing hormone (LH), follicle-stimulating hormone (FSH) and testosterone (0.48 mUI/mL, 0.93 mUI/mL, and 0.28 mUI/mL respectively) with elevated prolactin (PRL), >2,000 ng/mL (reference 2.64 – 13.13 ng/mL). Contrast-enhanced T1-weighted magnetic resonance imaging (MRI) revealed a giant pituitary macroadenoma measuring 35 x 42 x 51 mm (Figure 1).

We started treatment with cabergoline 0.5 mg/day twice weekly. After three months of therapy, PRL was normalized (0.48 ng/mL), and VA improved notably.
Figure 1. Panel A-B. Pituitary tumor measuring 35 x 42 x 51 mm in T1-weighted enhanced with Gadolinium magnetic resonance imaging, sagittal and coronal views.

Discussion

Our case presents an invasive giant prolactinoma with extremely abnormal prolactin levels. Our patient responded well to dopamine agonists, improving visual acuity (from 20/50 to 20/40 in the right eye, and from 20/200 to 20/100 in the left eye). The first line pharmacological treatment of giant prolactinomas are dopamine agonists such as bromocriptine, quinagolide, or cabergoline; however, cabergoline is the preferred choice due to fewer side effects, higher success rates in terms of prolactin normalization, tumor shrinkage, and decreased probability of resistance. The second line treatment for most patients is surgical (transsphenoidal adenomectomy), especially in those intolerant or resistant to dopamine agonists.

References