Giant prolactinoma: Diagnosis and management

A case report

ABSTRACT

Introduction: Prolactinomas are the most common secreting pituitary tumors. Giant prolactinomas are defined by a diameter of ≥ 4 cm, and represent a therapeutic challenge involving both the neurosurgical and medical aspects of cabergoline.

We present this case in order to highlight this special features.

Case report:

43-year-old patient admitted for medical management of a pituitary macroadenoma, revealed by right retro-orbital and occipital headaches for 4 years, complicated by blindness on right side, decreased libido and erectile dysfunction with premature ejaculation. Pituitary MRI showed an intra and suprasellar lesion process measuring 28 * 29 * 40mm. Biological assessment showed a gonadotrope and corticotrope deficiency associated with a major hyperprolactinemia, and obvious damage to the visual field.

A giant macroprolactinoma was retained and Managed with : Cabergoline at 1.5mg per week. He was also substituted with Hydrocortisone and levothyroxine, with spectacular improvement.

Discussion:

Giant prolactinomas present an explosive clinical, radiological and biological symptoms. The therapeutic approach to them remains controversial, combining both neurosurgery and / or dopamine agonist.

Introduction :

Prolactinomas are the most common pituitary tumors (1,2). Giant prolactinomas are defined by a diameter ≥ 4 cm (3). In males, tumor invasion and clinical expression are more aggressive (1,4).

Pituitary MRI remains an indispensable modality for diagnosis (2). However, giant Prolactinomas represent a therapeutic challenge involving both neurosurgical and medical aspects (1,5,6).

We report a case of giant prolactinoma in a male.

Case report :

43 year old patient with pituitary macroadenoma admitted for management

Medical history:

Diabetes for 3 years, on glimeperide 4 mg/d and metformin 1g/d, undocumented thyreopathy on LT4 100ug/d since one year, viral hepatitis B treated 4 years ago, active smoking at 35P/year, alcoholic habit weaned 5 years ago, diabetes in mother, father and maternal uncle (T2DM profile)

On investigation:

Right retro orbital and occipital headaches for 4 years, uncontrolled by usual analgesics, complicated with right eye blindness, decreased libido and erectile dysfunction for 4 years with mention of precocious ejaculation, without galactorrhea, nor asthenia

On clinical examination:

Overweight, abnormal hip circumference, onychomycosis of the toes, no dysmorphic syndrome, no other particular signs.

Complementary examination:

MRI of the pituitary showed an intra- and supra- sellar lesional process measuring 28*29*40mm responsible for an hourglass-shaped enlargement of the sella, with a haemorrhagic and necrotic areas, filling the optochiasmatic cisterns and responsible of the enlargement of the sellar floor and lifting of the sellar diaphragm, pushing back the pituitary stemoptic chiasm.

and the optic chiasm.

Biological assessment: gonasotropic and corticotropic deficiency associated with hyperprolactinemia

Visual field: OD: visual field lost / OG: mild concentric narrowing with quadranopsia

Funduscopic examination: right eye: papillary atrophy, flat retina; left eye: normal papilla, good macular reflection, flat retina.

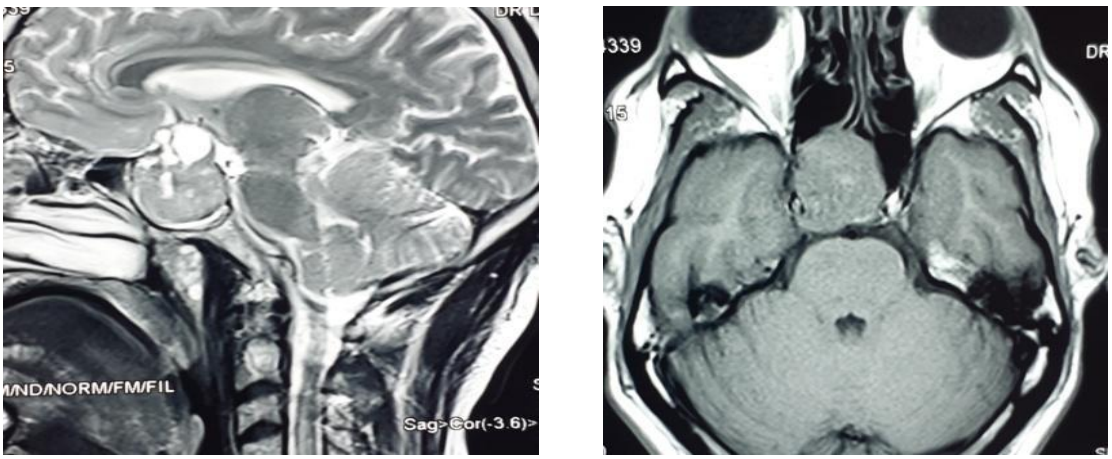

Figure N°1 : IRM cérébrale : A **: Coupe sagittale** B :**Coupe axiale**

Diagnosis :

This is a case of a giant prolactinoma with visual impairment, thyroid and corticotropic deficiencies in a type 2 male diabetic.

Management :

Cabergoline at an initial dose of 1.5mg per week, with progressive increase after 1 month, Hydrocortisone 15mg/d, LT4 100ug/d .

Discussion :

Prolactinomas are the most common hormonally active pituitary tumors, they are considered giant when around 4 cm in diameter. Compared to females, males show a considerable delay in diagnosis (7), and present a much more dramatic clinical situation, including a tumoral syndrome with headaches, visual field abnormalities, sometimes associated with signs of invasion of neighbouring structures (frontal syndrome, temporal epilepsy, olfactory hallucinations, hemiparesis, dementia, rhinorhoea, cranial nerve paralysis, epistaxis, exophthalmos, hydrocephalus, etc.) (8,1,4). While decreased libido, erectile dysfunction, gynecomastia, galactorrhea, infertility and osteopenia are signs of prolactin hypersecretion and gonadotropic deficiency syndrome frequently found in described cases of giant prolactinomas, closely followed by corticotropic then thyreotropic deficiency syndrome (9,3).

Biologically, higher levels of Prolactin are described in tumors larger than 3 cm or more (10,4).

MRI may show suprasellar tumour invasion with invasion of the optic chiasma, frontal lobes and ventricular system, lateral extension to the sphenoidal and cavernous sinuses, even extreme temporal extension, inferior extension to the occipital condyles, or anterior extension to the nasopharynx, and lastly, posterior extension is possible with cerebellar involvement (3).

Intra-adenomatous haemorrhage and necrosis are sometimes described with these prolactinomas (4).

In addition to neurosurgical treatment, which has been widely advocated to alleviate the symptomology of giant prolactinomas, the current trend is towards medical treatment, particularly dopamine agonists (5,6,2,12).

Treatment with small doses of dopamine agonists has been widely shown to be effective, however, male gender and larger tumour size are associated with significantly higher cabergoline doses (1,11,2).

Conclusion :

The specificity of giant prolactinomas lies in their explosive symptomatology, but also in the imaging and biological richness that they can generate. However, their therapeutic approach remains controversial.

Conflict of interest statement

The authors declare that they have no conflict of interest.

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