

Pituitary macroadenoma: visual field defects

Macroadenoma hipofisário: alterações campimétricas visuais

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ABSTRACT

The pituitary adenoma is a tumor of slow evolution and has important visual disturbances such as low visual acuity and field defects. These symptoms lead patients to seek often ophthalmologists. In this case, we will analyze a patient with glaucoma who had an associated pituitary macroadenoma.

Keywords: Adenoma/diagnosis; Pituitary neoplasms/complications; Visual fields; Glaucoma; Case reports

RESUMO

O macroadenoma de hipófise é um tumor de evolução lenta e que apresenta importantes distúrbios visuais como baixa acuidade visual e alterações campimétricas. Estes sintomas levam os pacientes a procurarem, muitas vezes, os oftalmologistas. Neste caso, analisaremos uma paciente portadora de glaucoma que apresentava, associadamente, um macroadenoma hipofisário.

Descritores: Adenoma/diagnóstico; Neoplasias hipofisárias/complicações; Campos visuais; Glaucoma; Relatos de casos

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INTRODUCTION

Macroadenomas are slow-growing benign tumours (larger than 10 mm in size) that can affect various glands in the human body, including the pituitary gland⁽¹⁾. Even though pituitary macroadenomas are often detected by endocrinologists and neurologists, patients usually seek ophthalmologists because of the visual disturbances caused by the condition, such as impaired visual acuity and visual field defects. It is worth noting that headache is a frequently-reported symptom and that in 50% of cases the visual field defects progress to optic nerve atrophy⁽²⁾.

The aim of this report is to stress the need for caution in the differential diagnosis of the condition as regards other diseases of ophthalmic origin, taking into account visual field defects.

CASE REPORT

MRP, a 57-year-old female patient from Montes Claros/MG, came to the eye clinic for a second opinion about glaucoma. She reported that about 8 years earlier she suffered from a headache that made her seek an ophthalmologist. At the time, the patient was diagnosed with glaucoma and she has since been using hypotensive eye drops, starting with prostaglandin eye drops once daily in both eyes (BE). She used the medication regularly, but despite adequate control of intraocular pressure her visual acuity and visual field defects progressively worsened in BE. Ophthalmic examination showed a best-corrected visual acuity of 20/400 (+1,00 : -0,75 at 90°) in the right eye (RE) and 20/20 (+0,75 : -0,50 at 75°) in the left eye (LE). Biomicroscopy

of the anterior segment showed no changes, and the direct and indirect pupillary reflexes were normal in BE. Intraocular pressure (IOP) was 13/13 mmHg (at 2 pm; the patient was using hypotensive eye drops) in BE. Fundus examination showed pathological cupping of the optic disc and a normal macula in BE (Figure 1). Even though biomicroscopy showed similar findings in both optic discs, her visual field defects did not correlate solely with her optic disc appearance (Figure 2).

Thus, the patient was referred to a neurologist for further investigation.

Neurological investigation found that the patient also had a pituitary macroadenoma of intra- and suprasellar location. The tumour compressed the optic pathways asymmetrically, which explained the differences in perimetry (Figure 3). After neurosurgical resection of the tumour, the patient has remained stable and there was no progression of the scotomas in BE.

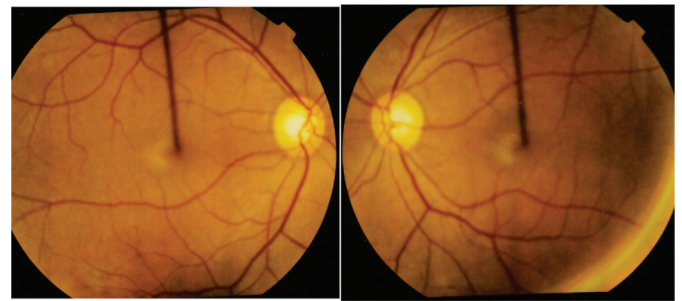


Figure 1: Colour retinography of the right (0.8 x 0.6) and left (0.8 x 0.6) eyes, respectively.

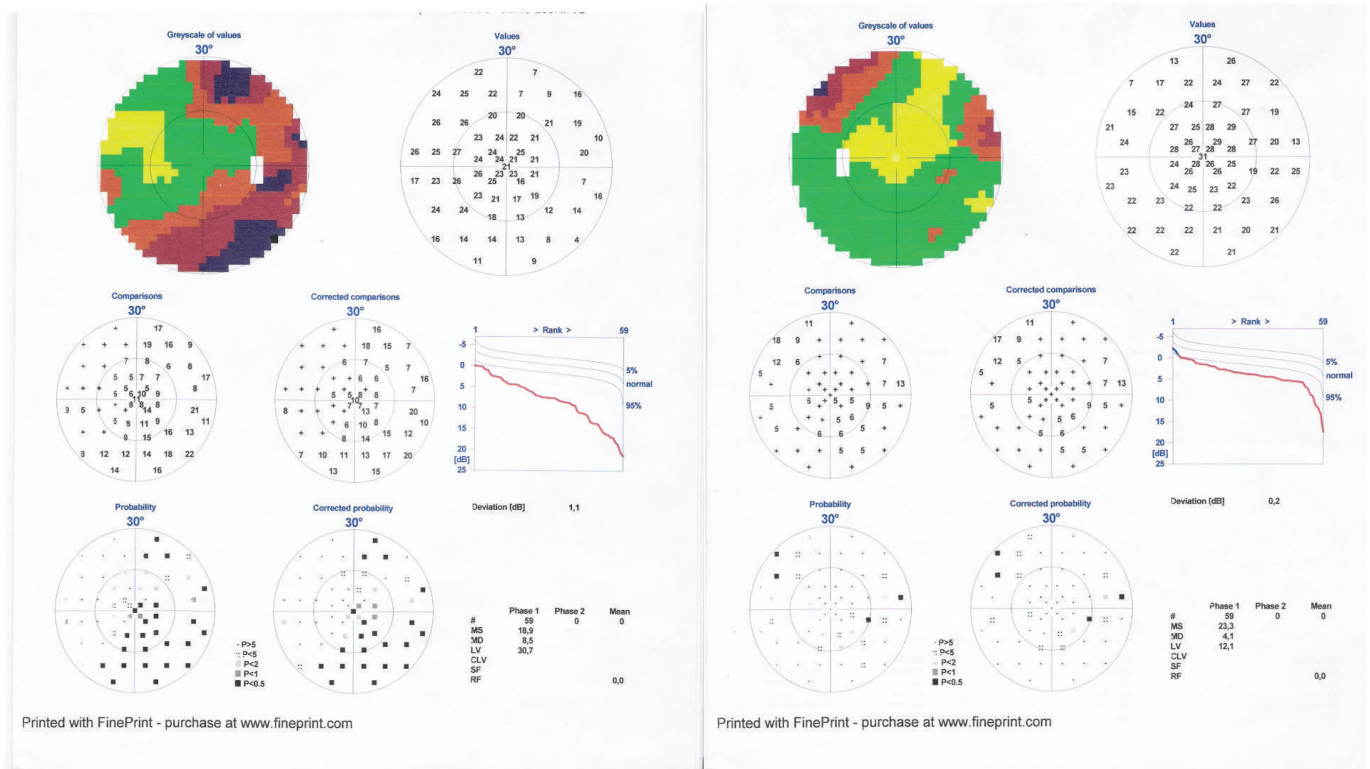


Figure 2: Perimetry of the right and left eyes, respectively. RE, deep scotoma significantly affecting the upper and lower temporal quadrants and the lower nasal quadrant; LE, scotoma in the upper temporal and nasal quadrants.

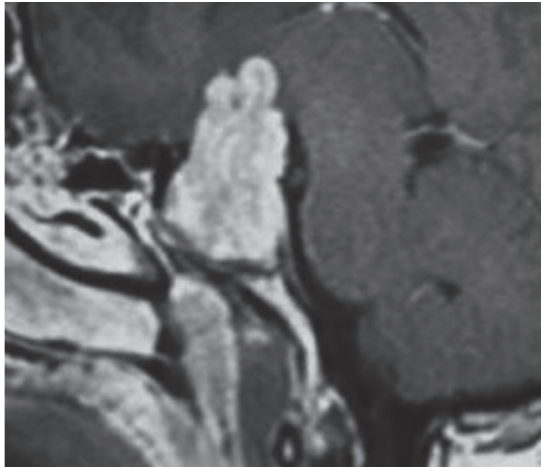


Figure 3: Magnetic resonance imaging of the pituitary macroadenoma. Sagittal plane: expansive intra- and suprasellar lesion compressing the optic pathways.

DISCUSSION

Pituitary tumours, which are almost always adenomas, represent from 7-17.8% of intracranial tumours^(3,4). According to the medical literature, the most common symptoms of pituitary adenomas are headache and decreased visual acuity⁽⁵⁻⁸⁾. Headache is usually the most prominent symptom; it is typically nonspecific in nature and unresponsive to analgesics. The striking feature of pituitary adenomas in perimetry is bitemporal hemianopsia, sparing central vision and resulting from compression or destruction of the fibres that cross the centre of the optic chiasm. Many different lesions can affect the optic chiasm (depending on its anatomical variation), which will influence the exact nature of the visual field defects found in pituitary tumours^(2,7). The hemianopsia can be congruous or incongruous; in incongruous defects, one eye tends to be affected much more severely than the other, as occurred in our case⁽⁷⁾. Despite advances in imaging methods, which provide for detailed identification of tumours, perimetry is still essential in the diagnosis and management of neuro-ophthalmic lesions⁽⁹⁾. It is also important to correlate visual field data with fundus examination for appropriate clinical reasoning. In the case present here, because the patient had a clinical picture of glaucoma, the tumour could have easily been missed in a routine ophthalmic evaluation. In addition, pituitary macroadenoma can present with other visual disturbances, such as diplopia (due to the lateral expansion of the adenoma toward the cavernous sinus), oculomotor nerve palsy and, more rarely, nystagmus and proptosis⁽¹⁰⁾. However, these findings were absent in our case. It is important to note the importance of optic atrophy as a result of tumour expansion. As noted above, approximately 50% of patients with pituitary adenoma with visual field defects progress

to optic nerve atrophy⁽¹⁾. This occurs especially when optic disc pallor is observed before surgery. Many studies stress that early diagnosis of a pituitary adenoma improves the prognosis for ophthalmic recovery^(11,12). In this case, no sectoral changes in the optic disc were observed, indicating a good visual prognosis⁽⁵⁾.

When a patient with glaucoma presents with visual field defects that do not match the optic disc changes and has other associated symptoms, such as the ones mentioned above, further neurological investigation is always warranted. Finally, early diagnosis and surgical intervention are critical for a good visual prognosis. Therefore, involvement of the ophthalmologist is essential for appropriate diagnostic investigation and clinical management of such neuro-ophthalmic conditions.

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