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Pituitary adenoma in a glaucoma patient

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Abstract

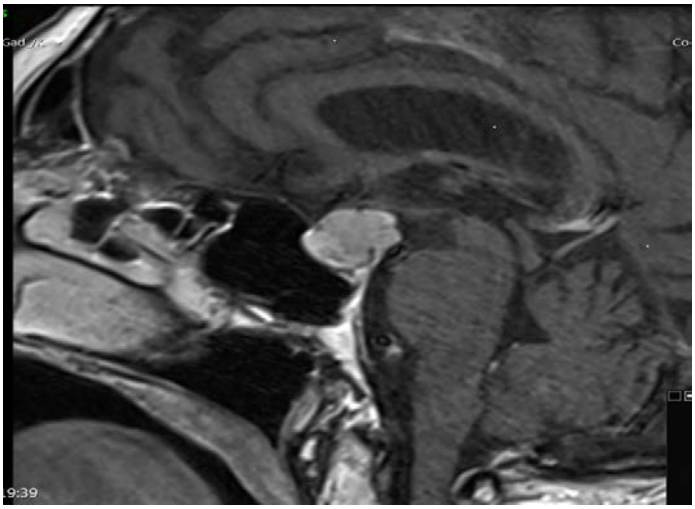
Visual defect is the commonest presentation of a patient with pituitary tumors. Here we present the case of a 91-year-old lady who had glaucoma for several years and later diagnosed with pituitary tumor which caused diagnostic and treatment dilemma.

Introduction

Case: A 91-year-old woman was presented to Endocrinologist with deteriorating vision and unexplained tiredness. She was known to have bilateral open angle glaucoma and related visual defects for a long period of time and was being treated at one of the major eye hospitals. On examination, she had stable vital signs normal systems, marked right sided vision loss and the confrontation showed left temporal superior quadrant defect specifically. On further evaluation, she was found to have low normal cortisol level of 220 (171-536 nmol/L) which explained the tiredness and it dropped to 77 in 1 year. MRI brain with pituitary protocol showed a macroadenoma (1.7x1.4x1.9 cm) and OCT showed normal left eye and marked right sided nerve fiber layer (NFL) loss on retina and macula. She was started on Hydrocortisone for adrenal insufficiency. A multidisciplinary team meeting consisting of Neurosurgeons, Endocrinologist, Ophthalmologists and ENT was conducted and concluded not to proceed with surgery to remove the tumor considering patient's age and comorbidities. This was discussed with the patient and her family as well, who also agreed with the decision. She is under regular follow up with yearly MRI and hormone assay.

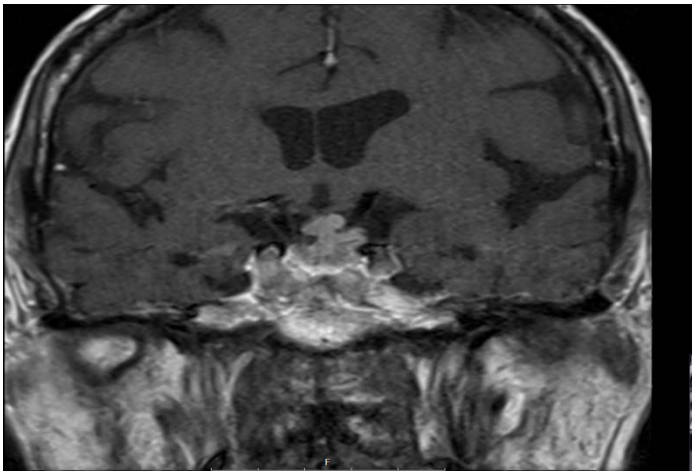
Hormone panel of the patient

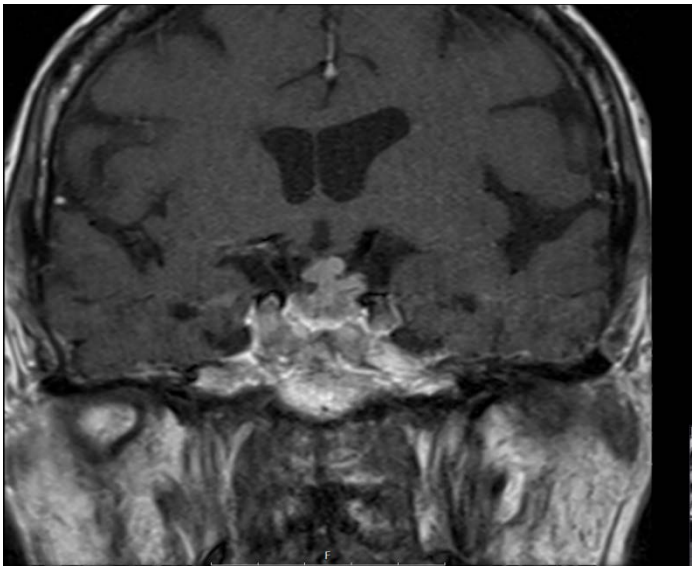
Cortisol	**220** ⟶ **77**	171-536 nmol/L
TSH	1.40	0.27-4.2 mU/L
T3	4.8	3.1-6.8 pmol/L
T4	16.2	12-22 pmol/L
Prolactin	**567**	102-496 miU/L
LH	14 iu/L	
FSH	41.3 iu/L	
IGF-1	115 ng/mL	



MRI brain- sagittal section

1st MRI brain image -coronal plane





Latest MRI brain image (coronal plane) note the increase in size of tumor towards left side

Discussion

Pituitary tumors are mostly adenomas of which almost 80% are non-functioning (NFPA)[1] They are called macroadenoma if size >10 mm and microadenoma if <10mm. Symptoms vary, prevalent and first presentation being mass effect leading to headache and blurring of vision. Tumor can cause secondary adrenal insufficiency as in this case her presentation was tiredness due to reduced cortisol levels supposedly caused by stalk effect. In secretory tumors, the symptoms vary according to the hormone produced. For example, in a prolactinoma, we generally see symptoms of prolactin excess such as amenorrhea, decreased libido in females and impotence and infertility in males. Looking at the hormone panel of this patient, we can see borderline high prolactin levels and low normal LH and FSH levels for a postmenopausal woman. This was disregarded considering her symptomatology.

Most common visual field defect seen in pituitary tumor is bitemporal hemianopia. However, it can also cause unilateral temporal hemianopia, which was superior quadrant in this patient. Long standing tumors can lead to axonal damage and permanent vision loss. Typical vision loss in glaucoma is peripheral visual field loss with a central patent area. Studies show glaucoma can also cause altitudinal field defect i.e. superior or inferior hemianopia[2] . Here it needs a comparison and diagnosis can become uncertain. We tend to carry on with treating glaucoma unless patient develops symptoms of a pituitary tumor.

Management of symptomatic pituitary tumor is surgery called transsphenoidal resection via nasal approach. Factors like age, comorbidities and post-surgical complications need to be considered before proceeding with the surgery. Post-surgical complications include fibrosis of optic tract, loss of some other hormone function etc.

The similarities of vision loss seen in glaucoma and pituitary adenoma, in fact delayed the diagnosis. Patient specifically had superior quadrant temporal hemi anopia which was attributed to glaucoma until she developed symptoms like fatigue. Hormonal assay confirmed this as adrenal insufficiency, possibly due to stalk effect seen in pituitary tumors. She got symptom relief with Hydrocortisone. The vision loss caused by pituitary tumor is reversible if found and treated as early as possible.

Conclusion

It is essential to evaluate vision loss for other possible etiologies especially if the patient has other eye diseases. Prompt and well-timed diagnosis of a pituitary tumor can avoid vision loss by means of immediate surgical management. At the same time, it is also important to have a multidisciplinary approach involving Endocrinology, Neurosurgery, ENT, Ophthalmology, and most of all patients themselves and their family before proceeding with the surgery.

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Biography

Dr Sivakumar completed MBBS in Kerala, India and is currently working at Queens hospital, Romford, London.

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