

A STUDY ON OPHTHALMIC MANIFESTATIONS IN PITUITARY GLAND TUMOURS

Ophthalmology

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ABSTRACT

Background: A pituitary adenoma is a benign tumour of the adenohypophyseal cells of the anterior lobe of the pituitary gland. It accounts for 12% to 15% of all intracranial tumours. A spectrum of ocular manifestations are seen with these tumours ranging from the absence of any visual symptoms to severe visual field defects and loss of vision. The study aims to study the various ocular features and their effect on vision, visual fields and ocular motility in cases of pituitary adenoma diagnosed on CT or MRI. **Materials And Methods:** This is a prospective study for a period of 1 year and 8 months conducted in the Ophthalmology department, Amaltas Institute Of Medical Science. 25 patients aged between 25 to 65 years diagnosed with pituitary adenomas on radiological imaging, were evaluated after detailed history with visual acuity, pupillary reaction, colour vision, extraocular movements, slit lamp and fundus examination. Visual field examination was done with an Octopus field analyser. **Results:** Out of the 25 patients diagnosed with pituitary adenoma on radio imaging, it was found that most patients were above 50 years. 15 patients were above 50 yrs i.e. 60%. Females were predominantly affected (76%). Visual acuity of 62% of patients was between 6/12 and 6/6. Headache was the most common mode of presentation amounting to 80% of the total study sample. 76% showed field defects of which bitemporal hemianopia was the commonest in 52.9%. Pituitary macroadenoma was the most common type as it was seen in 96% patients. Optic atrophy was seen only in 4 cases. Others had normal fundus. **Conclusion:** Neuro-ophthalmics is of utmost importance as it only helps in early detection, planning of treatment and further follow up, but also prevents visual loss if intervened timely.

KEYWORDS

Bitemporal Hemianopia, Pituitary Adenoma, Field defects.

INTRODUCTION

A pituitary adenoma is a tumour originating from the adenohypophyseal cells of the anterior lobe of the pituitary gland. It is benign in nature. It accounts for 12% to 15% of all intracranial tumours.¹ Pituitary adenomas are of 2 types according to size: microadenomas (≤ 10 mm) and macroadenomas (> 10 mm).²

Macroadenomas cause significant visual impairment. The pituitary gland is situated in the sella turcica, 10-13 mm below the optic chiasm. Therefore, when it increases in size, it can easily compress the optic nerve fibres at the chiasma. Compression of the frontal part of the optic nerve, affects the visual fields, visual acuity and contrast sensitivity. Compression of optic chiasma for a long duration can cause severe vision impairment due to optic atrophy. Non-functioning pituitary adenomas cause progressive visual loss as they grow slowly and compress the optic chiasm.³ The arrangement of fibres characteristically accounts for classical bitemporal hemianopia.

Aims And Objectives

Primary objective is to study the various ophthalmic manifestations in cases of pituitary tumours diagnosed on radiological imaging and to analyse the proportion of cases presenting with ophthalmic manifestations.

Secondary objective is to analyse the sensory visual disturbances like degree of visual loss, pattern of visual field defects and ocular motility defects in diagnosed cases of pituitary adenomas.

MATERIAL AND METHODS

25 patients diagnosed with pituitary adenoma on radiological imaging were registered and evaluated during the study. History of the patient, evaluation of visual acuity on Snellen chart, extraocular movement and pupillary assessment, colour vision by Ishihara pseudo isochromatic chart, visual field examination by octopus field analyser, slit-lamp examination and fundus examination with +90 D lens and indirect ophthalmoscopy were done.

Inclusion Criteria

- Age 25-65 years.
- Patients diagnosed as having pituitary tumours on radiological imaging.

Exclusion Criteria

- Patients with ocular media opacities.
- Patients physically or mentally unfit for detailed ocular examination.

RESULTS

Result of the study were as follows :

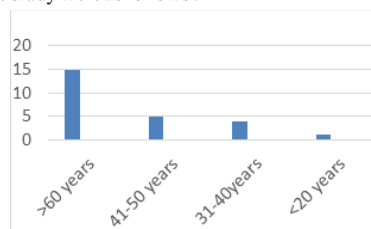
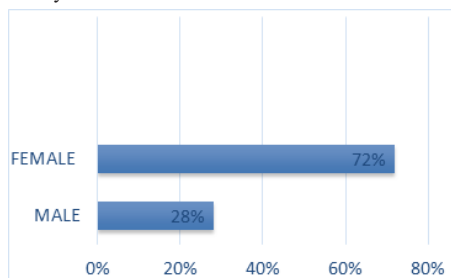


Chart 1. Age Distribution

It was noted that of 25 patients, 15 patients (60%) were above the age of 60 years, followed by 5 patients in the age group between 41 to 50 years, 4 patients were in the age group of 31 to 40 years and one patient was below 20 years.

**Chart 2. Gender Distribution**

Females were predominantly affected (72%) when compared to males (28%).

		Best Corrected Visual Acuity			
		6/6 to 6/12	6/18 to 6/36	<6/60	Total
Right eye	Frequency	16	6	3	25
	Percentage	64	24	12	100
Left eye	Frequency	15	8	2	25
	Percentage	60	32	8	100
Total	Frequency	31	14	5	50
	Percentage	62	28	10	100

Table 1. Visual Acuity of Patients Studied

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Out of 25 patients studied, 62% had visual acuity between 6/6 to 6/12 on presentation. 28% of patients had a visual acuity between 6/18 to 6/36 and only 10% had an acuity below 6/60.

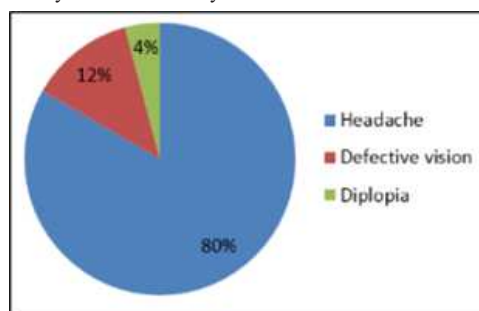


Chart 3. Mode of Presentation

Headache was the predominant symptom in most of the patients (80%).

Visual Fields	Frequency	Percentage
Bitemporal hemianopia	11	57.9
Nonspecific changes	2	10.5
One eye blind and contralateral temporal hemianopia	2	10.5
One eye temporal hemianopia, other eye superotemporal quadrantanopia	1	5.3
One eye temporal hemianopia, other eye involvement of 3 quadrants	2	10.5
Fields not possible (poor visual acuity)	1	5.3
Total	19	100.0

Table 2. Distribution of Pattern of Visual Field Defects

Out of 25 patients studied in the present study, 76% showed field defects and the remaining 24% had no field abnormalities. The most common visual field defect was bitemporal hemianopia (57.9%). 10.5% of patients presented with one eye blind and contralateral temporal hemianopia.



Bitemporal Hemianopia

DISCUSSION

The mean age at which the pituitary adenoma was diagnosed was determined as 50.68 years. There was a predominance of females in diagnosed cases.

The chief presenting complaint was headache (80%). This observation indicates that cases of pituitary adenoma can also result in ophthalmoplegia.

Visual field defect was the most significant manifestation of pituitary adenomas.

CONCLUSION

Bitemporal visual field defect is a pathognomonic ophthalmic finding. The primary goal in the management of pituitary adenoma revolves around the restoration of visual loss. An unexplained decrease in visual acuity requires prompt testing of the visual fields to look for bitemporal hemianopia. A neuro-ophthalmic examination is important not only because it permits localization, but also as symptoms in the initial as well as advanced stages are ocular.

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