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Case Report

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SIMPLE TEST CAN BE LIFESAVING: PITUITARY ADENOMA: A CASE REPORT

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ABSTRACT

Aim: Pituitary adenoma is benign tumour of pituitary gland. It can present either as a mass effect or secretory anomalies. The mass effect could cause visual field anomaly (Bitemporal hemianopia), diplopia following compression of constituent cranial nerves in the cavernous sinus which is its very important lateral relation. Secretory anomalies on the other hand could lead to infertility as in prolactinoma, Acromegaly as in growth hormone over secretion and so on. **Case Report:** SK was a 42 year old female who presented with diplopia, obscuration of left half of objects and a history of galactorrheoa. She had been on management for Glaucoma for two years. However perimetry done revealed bitemporal hemianopia with superior quadrantanopia while a follow up CT scan showed a sellar mass. She had neurosurgical intervention with improvement of visual field and other symptoms. **Discussion:** The patient was a 42 year old female which is the age and gender at risk for pituitary adenoma. Her history of galactorrheoa and diplopia which are unusual in glaucoma for which she had been on treatment for the previous 2 years arose a high index of suspicion towards a sellar lesion. The finding on perimetry and follow up findings on CT scan changed the entire course of management. To achieve good visual outcome and reduce risk of interference of the gland, she had neurosurgical intervention (Trans nasal excision of pituitary mass) which gave her good visual outcome. **Conclusion**: Although Glaucoma could present with bumping on objects placed on patients' side. Effort should be made to characterize this as care-giver may be dealing with bitempoaral hemianopia especially in at risk age group.

KEYWORDS: Bitemporal hemianopia, prolactinoma, galactorrheoa.

INTRODUCTION

Tumors of the pituitary gland and sellar region represent approximately 10-15% of all brain tumors,[1] Pituitary adenomas predominantly affect females between the third and sixth decades of life; however, no age group is spared.[2] Rates for pituitary tumors in the United States are slightly higher among black persons (2.92 per 100,000 person-years) than among white persons (1.82 per 100,000 person-years).[1]

Pituitary adenomas are almost always benign with no malignant potential. In general, pituitary lesions can be subdivided into non-secretory and secretory tumors of the pituitary gland. Non secreting tumours present with mass effect. Symptoms of mass effect including visual changes, diplopia, and headache due to compression of Optic chiasm, nerves, and cranial nerves in the cavernous sinus. The symptoms of functioning tumors are related to the specific hormone the tumor produces.[3,4] For instance prolactin-producing tumors present with amenorrhea, galactorrhea, or impotence while The growth hormone secreting pituitary tumour present as invasive macroadenomas with acromegaly. Elevated serum levels for GH and insulin-like growth factor have been noted in several cases.[5,6]

A variety of visual presentations of pituitary adenomas have been reported, including absence of clinical symptoms or deterioration of visual acuity, visual field affectation, and partial or complete ophthalmoplegia.[7] Visual field defects caused by pituitary adenomas are unique, with bitemporal hemianopia being most common, because of the distribution of visual fibers in the chiasm and their anatomic proximity to the sella turcica. However, other types of defects may be observed and, in fact, visual field examination may remain normal in small pituitary adenomas not causing significant optic compression.[7,8] Optic chiasm is approximately 8 to 13 mm above the pituitary gland. The nasal retinal fibers of each eye (temporal visual field) cross at this point, proceeding into the contralateral optic tract. Upwardly growing pituitary tumours, impinge on the anterior notch of the chiasm at its lowest lying aspect. This produces bitemporal hemianopia with increased density superiorly. Since tumor growth is usually asymmetrical, the field loss between two eyes is also typically asymmetrical, and denser from superior to inferior. Visual presentation of

pituitary adenoma varies depending on the size of the tumor and its proximity to optic pathway. In addition to bitemporal visual field loss, it may include, colour desaturation, diplopia and partial or complete ophthalmoplegia, when tumours expand into the cavernous sinus.[9]

For pituitary adenoma imaging, CT and MRI have largely replaced plain radiography because conventional radiography is poor for delineating soft tissues.[10,12]

Progressive deterioration of visual fields is often the principalv neurological criterion on which surgical management decisions are based.[13] Transphenoidal access is advocated when surgery can be expected to achieve adequate tumor resection without damaging the normal pituitary gland. Good visual outcome has been reported following surgical intervention.[14,15] Even severe visual defects secondary to optic nerve or chiasm compression can regress or resolve completely. Most of the improvement occurs during the first days or weeks following surgery. However few cases may show further improvement after 6 months or more from surgery as reported by Elgamal et al.[9]

CASE REPORT

Mrs SK, was a 42 year old Public servant who presented with a history of painless progressive blurring of vision in both eyes of 2 years duration and seeing of half of objects in her left eye. Vision was worse in left eye than right, distance vision worse than near and no obvious improvement or deterioration of vision at different times of the day. There was also history of Diplopia but no floaters, flashes, micropsia, macropsia or metamorphopsia. There was no history of trauma to eye or head. There was Positive history of galactorrheoa about 2 years earlier. History of headache which at presentation was no longer present. No nausea or vomiting. She was previously being managed at a private clinic where she was diagnosed to have glaucoma and have been on anti-glaucoma eye drops. She was also given glasses for reading but with progressive visual deterioration and diplopia on using glasses, patient presented to us Past Ocular and Medical histories were not contributory.

On examination, The only significant finding on systemic examination was bradycardia with a pulse rate of 57 B/min while significant ocular findings were Visual Acuity of 6/9-3(OD) and 6/18(OS). Others were.

Disc: Round, pink with distinct margins, Lamina dot sign, nil peripapillary changes. CDR~0.6(OU).There was no afferent pupillary defect as the pupil was equivocally reactive.

A working diagnosis of glaucoma suspect was made.

A central visual test done for both eyes showed bitemporal hemianopia as shown in fig. 1 a and b. A diagnosis of intracranial space occupying lesion secondary to? Pituitary adenoma was made.

Fig. 1: Typical field changes as seen in the patient.

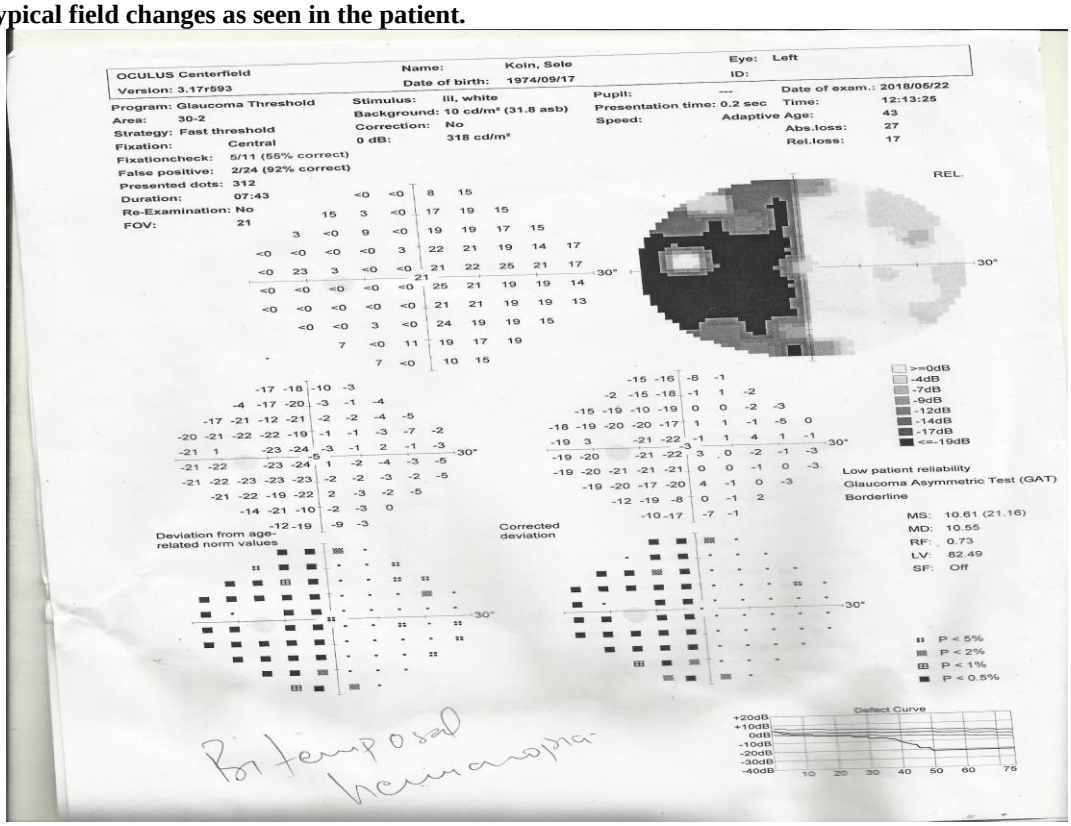

Fig. 1a: Shows visual field of left eye.

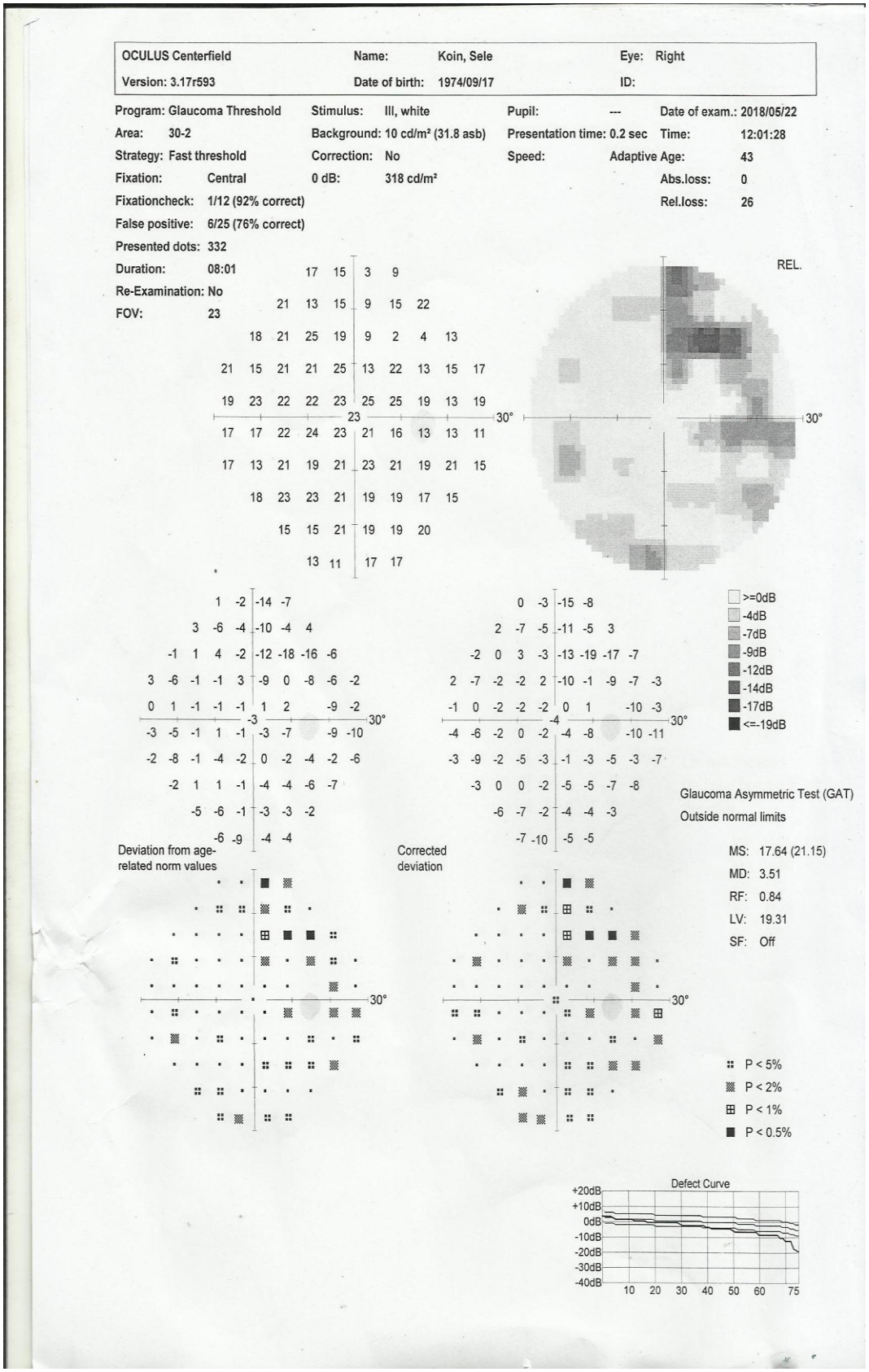

Fig. 1b: Shows visual field of Right eye.

A Cranial CT scan was then ordered and the following findings noted: A well-defined soft tissue mass occupying the sella and suprasella region. Isodense on pre-contrast scan and showing brilliant homogenous enhancement on post contrast scan. The mass measured 27mmX28mmX 34mm in dimensions. There was

compression of the optic chiasma anteriorly and cavernous sinuses laterally by the mass. An impression of sella/suprasella mass with benign feature was made with differential diagnoses of Pituitary macroadenoma, suprasella meningioma with sella extension and suprasella aneurysm were made. Pre-Surgery CT scan is shown in fig 2.

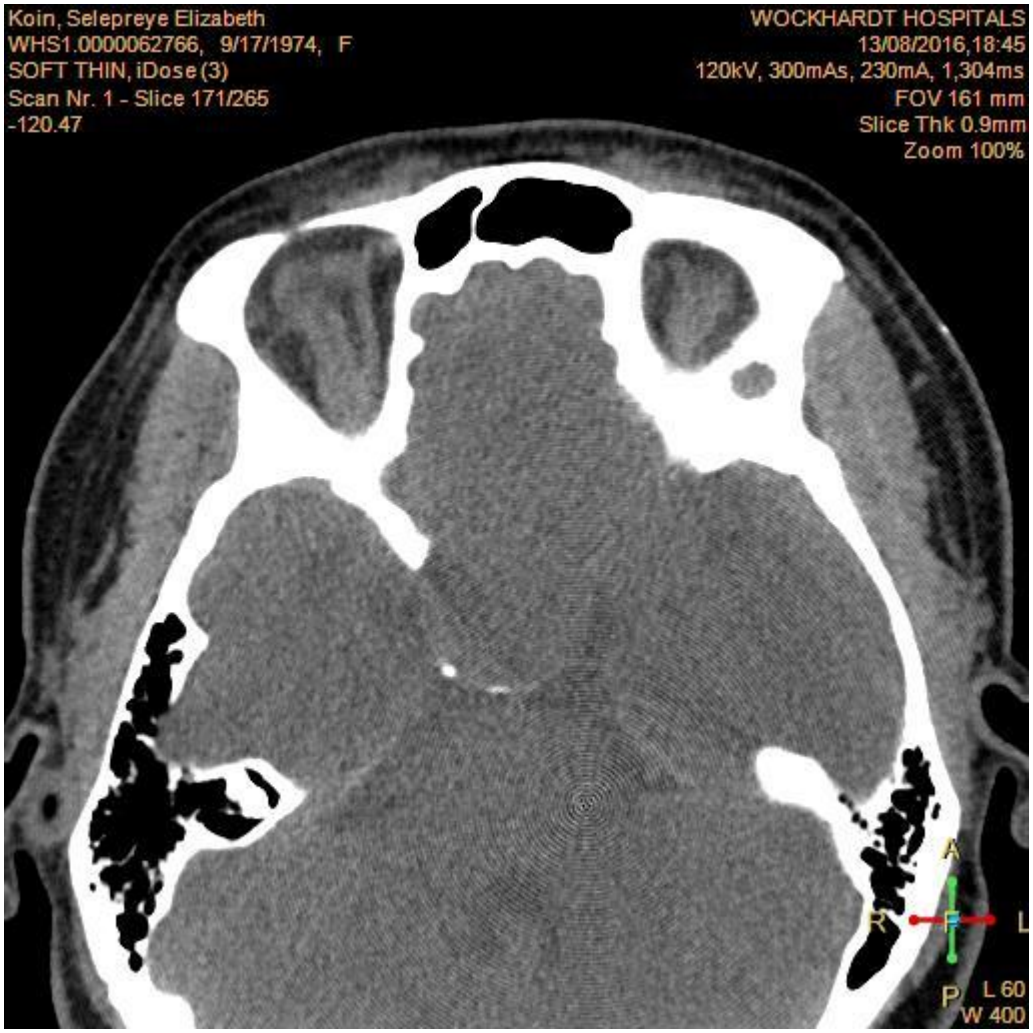

Fig. 2: Pre op CT scan.

Patient was referred to a Neurosurgeon who removed the mass. Following this patients vision improved without hemianopia.

Post-surgery CT scan also showed no mass lesion as shown in fig.3.

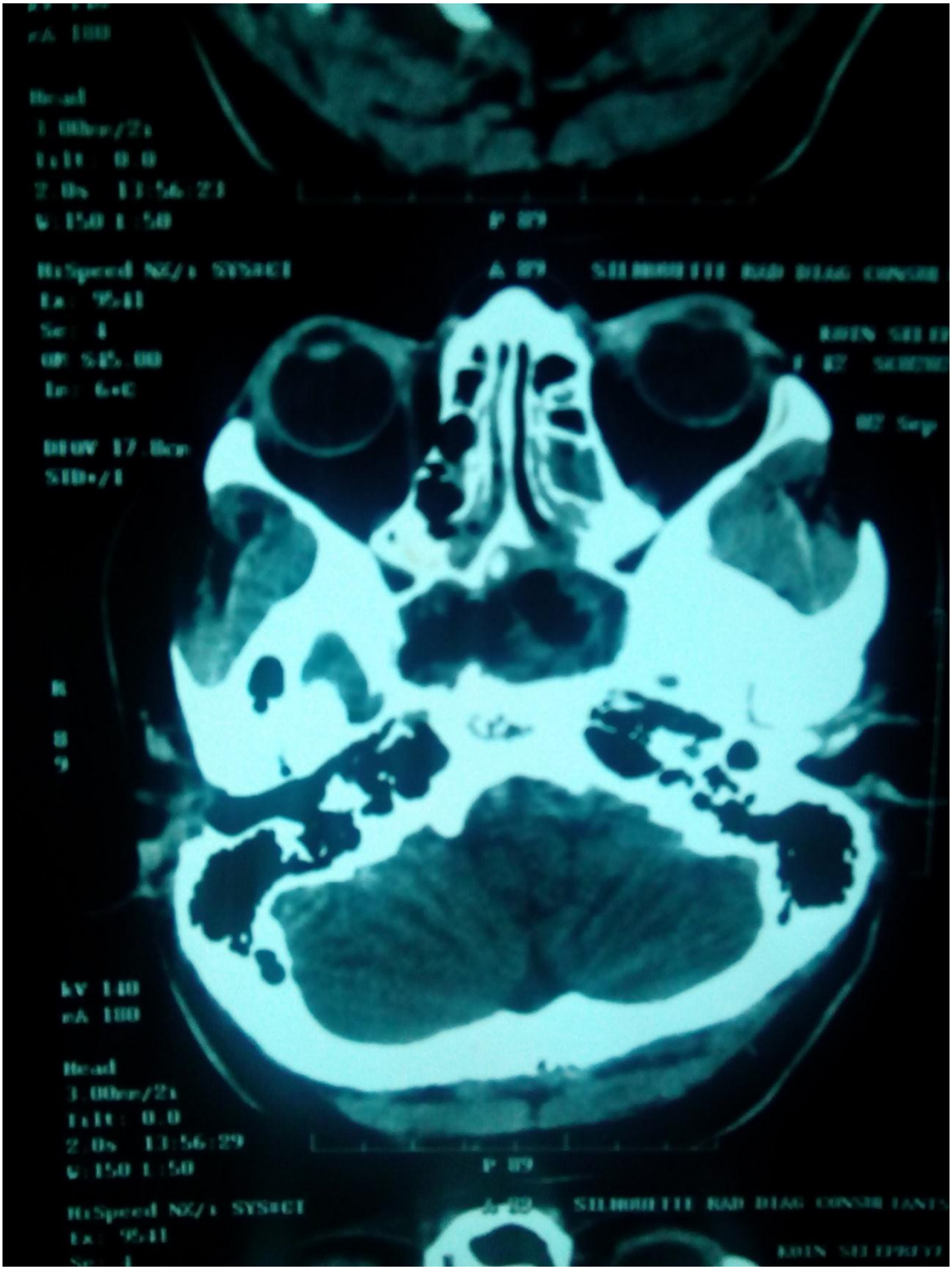

Fig. 3: Post op CT scan: No remnants of the Pituitary mass was seen indicating complete resection. The Sella region is unremarkable. The para nasal region and orbits are normal.

DISCUSSSION

The pituitary gland is the "master gland" of the body because it controls most of the body's endocrine functions by means of the hypothalamic-pituitary axis. It predominantly affects females between the third and sixth decade of life.[2] (This index case was a female of 42 years and thus falls under the age and gender category of pituitary adenoma. Patient experienced blurring of one half of object especially in her left eye. This could be misunderstood as bumping on objects placed by the side which is typical for glaucoma cases with peripheral field obscuration. This assumption could also be potentiated by the fact that she had cupped disc. This could explain why she had been on management for glaucoma and refractive error (possibly because of complain of diplopia). However on presentation, with added

complaint of diplopia[7] and also history of galactorrheoa, there was a high index of suspicion towards a sellar lesion in addition to the glaucoma she was being managed for. Diplopia could have been secondary to ophthalmoplegia following compression of cavernous sinus and its constituent cranial nerves. The bitemporal hemianopia seen on perimetry was in keeping with sellar lesion especially of pituitary origin.[7]

To elucidate our diagnosis, a cranial CT scan which delineates soft tissue better than conventional radiography was done. Furthermore since patient had presented with symptoms of mass effect, we thought that the tumour would be large enough to be picked by CT scan. The imaging result confirmed our suspicion as above.

Owing to visual fields affectation which is often the principal neurological criterion on which surgical management decisions are based,[13] and our desire to achieve adequate tumor resection without damaging the normal pituitary gland and also for good visual outcome.[14,15] Patient was referred for neuro surgical intervention and She subsequently had a transnasal excision of the pituitary mass.

Following surgical intervention, vision improved and post-operative CT scan showed absence of lesion.

A careful history and baseline perimetry turned the course of management and eventual outcome of this patient who had been on management for just glaucoma and refractive error for two years. Indeed simple test like visual field assessment could be both vision and lifesaving as Incidental adenomas can be found in nearly 10% of autopsied patients.[16,17]

CONCLUSION

Although Glaucoma may present with bumping on object placed on patients side, effort should be made to characterize this as eye care-givers as we may be dealing with bitemporal hemianopia especially in at risk age group. Furthermore in an attempt to diagnose Glaucoma, we should also be open minded to characterize the visual field analysis because it can reveal more than glaucoma and in some cases can be a pointer to not just a vision threatening but a life threatening conditions.

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