American Academy of Optometry

Pituitary Adenoma

Encountered During Glaucoma Follow-up

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Adenomas can be diagnosed when visual disturbances occur due to compression of the optic chiasm or when there are hormonal manifestations evident. However, certain neuro-ophthalmic diseases are picked up by auxiliary testing alone – as in the case of our patient. The importance of ocular examination is evident when certain symptoms are overlooked.

I. Case History

Sixty-two year old African-American male presents for follow up for corneal abrasion. All symptoms have subsided and he has self-discontinued Bacitracin. Patient denies any symptoms of pain, photophobia or discharge. He reports that he is returning in order to obtain a prescription for reading glasses. Upon examination, patient states that his vision has always been great – except for temporal blur. He has no other ocular or visual complaints.

Patient’s ocular history is unremarkable except for recent corneal abrasion. Medical history is remarkable for hypertension, bradycardia, and hyperlipidemia. Medications include Aspirin 81 mg, Atenolol 50 mg, Nifedipine 60 mg, Simvastatin 20 mg, and Methocarbamol 500 mg. No other significant findings are noted per history.

II. Pertinent findings

As examination continued, patient was best corrected to OD 20/30+2, OS 20/25+ at distance and 20/20 OD, OS at near. Confrontation fields indicated severe constriction in the right eye and mild nasal constriction in the left eye. Pupils were equal, round and reactive to light without any evidence of a relative afferent defect. Slit lamp examination was remarkable for an inferior stromal scar and nasal pterygium in the right eye; early lens changes were also noted in both eyes. Intraocular pressures were borderline, measuring 19mmHg OD and 20mmHg OS. Corneal thickness was slightly thicker than average at 563 OD, OS. The patient was dilated and upon funduscopic examination the following was observed:

Optic disk – OD: 0.99 h/v with no rim remaining inferiorly

OS: 0.95 h/v with thin rim tissue remaining superior and inferior nasal OS

All other fundus findings were within normal range.

The patient was educated regarding advanced optic nerve cupping and questionable visual field constriction. He was told to return for early morning pressure check and Humphrey visual field.

Patient returned to eye clinic within 24 hours and further evaluation of suspicious findings continued. Color vision was moderately reduced in the right eye. Gonioscopy revealed open angles in both eyes. Slit lamp examination indicated repeatable findings and intraocular pressures were elevated to 23 OD and 25 OS at 9:15AM.
Ancillary testing continued and new questions began to arise. Baseline visual fields were remarkable for the following:

- **OD**: dense superior arcuate, inferior arcuate, with inferior defect respecting the vertical
- **OS**: dense superior arcuate, inferior arcuate (central sparing) with inferior respecting the vertical

A Frequency Doubling Technology (FDT) Threshold 24-2 was administered and findings were repeated, once again showing respect to the vertical meridian.

**III. Differential Diagnosis**

The leading differential of a bitemporal hemianopsia included a chiasmal lesion with a pituitary adenoma high on the list. Meningioma, craniopharyngioma, aneurysm, and glioma were also on the list. Less common differentials included a tilted optic disc and a nasal retinitis pigmentosa. One must also include etiologies such as inflammatory disorders (i.e. sarcoid).

**IV. Diagnosis and discussion**

After careful examination and continuous testing, the patient was diagnosed with advanced primary open angle glaucoma with a possible chiasmal lesion. Treatment was started with Travatan to address the issue of elevated intraocular pressure. The patient was also sent for an immediate MRI with contrast of the brain and special attention to the chiasm.

Follow up continued and, after two weeks, it was noted that the patient was positive for a sellar/suprasellar mass obscuring the optic chiasm, suggesting macroadenoma. The patient was sent immediately for a neurology consult.

The actual occurrence of a tumor impinging on the chiasm is relatively rare. Adenomas may be diagnosed solely on visual difficulties that occur from the compression of the optic nerve by the tumor or on the basis of symptoms secondary to excessive hormone secretions. Nevertheless, ocular examination, as indicated in this case, provided significant information regarding localization of neoplasm. Ancillary testing provided a differential diagnosis that may have been overlooked due to lack of symptoms. Not only did subsequent visual field testing provide information that could have been overlooked in our patient, but there have also been previous cases where testing indicated a cerebrovascular accident or impending aneurysm that may have not been documented previously.

**V. Treatment and Management**

The patient is currently being followed with neurology and is scheduled for transsphenoidal surgery in September.
Patient has also returned to the eye clinic for several follow up visits in order to decrease the intraocular pressure and ensure no further nerve damage occurs. Patient is currently on Travatan once at night both eyes, Brimonidine twice a day both eyes and Trusopt three times a day both eyes for maximal pressure lowering. Pressures have remained stable in the low-teens.

The eye clinic will continue to follow up once patient has recovered from surgery.

VI. Conclusion and Clinical Pearls

A trained clinician should be able to adequately list differentials when presented with a patient who is complaining of “temporal blur”. One should also be aware that upon initial presentation, nothing should be ruled out. It is imperative that auxiliary testing be done when certain signs and symptoms do not correlate. In the case of our patient, ancillary testing was done based on optic nerve appearance that seemed suspicious for glaucoma. However, a bitemporal defect was noted, signaling the need for further testing and addition of new differentials in a working diagnosis of a patient’s reduced vision. Misdiagnosis is often attributed to insufficient history, failure to associate systemic signs with patient’s symptoms or failure to perform adequate testing.

Bibliography


