Investigative Discovery: Optic Neuropathy 2’ Sphenoid Wing Meningioma

Abstract:
Compressive optic canal lesions are often associated with progressive visual loss. After an extensive work up, 83 year-old male with sudden onset of unilateral vision loss was diagnosed with sphenoid wing meningioma.

I. Case history
• 83 y/o Caucasian male
• CC: sudden onset blur and distortion described as “film over vision” OD with current prescription that started at least 3 months ago. Vision adequate OS. Patient denies headache, scalp tenderness, or jaw claudication
• POH: Cataracts OU, Physiological cupping OU, resolved vitreous hemorrhage OS 2’ posterior vitreous detachment
• PMH: HTN (LBP 137/75), BPH, osteoarthritis, basal/squamous cell carcinoma of scalp, COPD, chronic kidney disease, atrial fibrillation
• Meds: Acetaminophen, digoxin, finasteride, metoprolol, tamsulosin, triamcinolone, budesonide/formoterol

II. Pertinent findings
• Entrance exam
  o BCVA: OD 5/150 (Feinbloom), OS 20/25
  o Pupils: Equal in size, reactive to light 2+ OD/3+ OS, 3+ right APD
  o EOM: full OU
  o CF: Full to HM OD, FTFC OS
  o C/D: OD 0.75R with temporal pallor, OS 0.60R
• Other
  o OCT disc cube: OD thin temp, borderline inf, OS WNL
  o OCT GCA: OD thin 360, OS borderline inf
  o Optic nerve head photography
• Laboratory testing
  o ESR: 14 within normal limits
  o CRP: 2.1 within normal limits
  o CBC: essentially within normal limits
  o HbA1c: 5.3 within normal limits
  o Lipid panel: mildly elevated LDL, total cholesterol, and triglycerides
• Imaging
  o Carotid Doppler U/S: less than 50% bilateral ICA stenosis
  o MRI of brain with and without contrast: thin 1-2mm cuts through the orbit: Right sphenoid wing/orbital apex meningioma with partial encasement and compression of the prechiasmatic right optic nerve and partial encasement of the supraclinoid right ICA

III. Differential diagnosis of optic neuropathy OD
• Vascular
  o Ischemic event (i.e. AION)
• Neoplastic/compressive

IV. Diagnosis and discussion
• Initially it was thought this patient likely had a vascular occlusive event given the patient’s age and chief complaint of unilateral sudden onset vision loss. However,
lab testing and carotid imaging were relatively unremarkable; thus neuroimaging of the brain was ordered to further investigate for a compressive lesion.

- Meningioma originates from the arachnoid, and it is generally a benign brain tumor that is slow growing. It is more commonly found in females and those who are older than 50 years of age; about 20% of cranial meningiomas involve the sphenoid wing.
- Patients with sphenoid wing meningioma are unlikely to have extraocular muscle involvement; unilateral vision loss is not always progressive but can sometimes be sudden.

V. Treatment/management

- The main treatment goal for patients with sphenoid wing meningioma is the improvement or preservation of visual function.
- A study has shown that in order to achieve optimal visual outcome in resecting meningiomas that cause optic nerve compression, an aggressive bony decompression of the optic canal with anterior clinopectomy could be performed.
- A detailed discussion and patient education was conducted with the patient and his wife in regards to his ocular condition. He was referred for neurosurgical consult and subsequently referred to oncology for further management. The patient is undergoing radiation therapy (daily treatments) for 6 weeks, and reports stable vision with occasional slight perceived improvement on some days.

VI. Conclusion

Eye doctors are frequently the first providers to encounter patients with intracranial tumor, as patients’ initial symptoms are usually vision related such as vision loss or field defect in one eye. Laboratory tests like CBC with differential, ESR, and CRP should be ordered to rule out GCA in older patients that have unilateral vision loss from optic neuropathy. However, neuro-imaging should be strongly considered in patients at any age when presenting with optic nerve head pallor to definitively investigate for intra-cranial tumor such as sphenoid wing meningioma as was found in this case.

VII. Bibliography

