Emergency Ophthalmology in the Primary Care Clinic

Theodore Wu, MD, PhD
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Virginia ACP Clinical Update
Disclosures

Merck

Roche
Case Report

84 year old woman, new to your practice, comes in complaining of decreased vision in the right eye.
Case report

The woman says that her vision was “fine” last night, and when she woke up, she could not see out of her right eye. She denies any change of vision in the left eye.
Case report

Any eye pain?

Any headache?

Any scalp tenderness?

Any jaw pain?

Any new neck or shoulder pain?

Any weight loss?
Case report

The woman denies eye pain.

She complains of pain over her right scalp when brushing her hair, jaw pain while chewing, and a 30 pound weight loss over the past 6 months.
Differential diagnosis
Loss of vision

- Sudden vision loss
  - Unilateral
    - Transient
      - Central retinal vein occlusion (nonischemic)
      - Early retinal detachment (especially with posterior vitreous detachment)
      - Embolic phenomenon
      - Uveitis
      - Vasospasm
    - Persistent
      - Acute angle-closure glaucoma
      - Central retinal artery occlusion
      - Central retinal vein occlusion (ischemic)
      - Corneal hydrops
      - Giant cell arteritis
      - Neoplasia
      - Nonarteritic anterior optic neuropathy (may be caused by medication)
      - Retinal detachment
      - Trauma
      - Vitreous hemorrhage
  - Bilateral
    - Transient
      - Atherosclerotic (occlusive) disease of the internal carotid artery
      - Migraine headache
      - Transient ischemic attack (usually of the visual cortex)
    - Persistent
      - Acute angle-closure glaucoma (rarely)
      - Bilateral occipital lobe ischemia
      - Giant cell arteritis
      - Neoplasia (lymphoma)
      - Posterior ischemic neuropathy
Clinical Exam

Visual acuity: CF OD, 20/20 OS

APD OD

No diplopia

Tenderness in the right scalp

Pale, swollen optic nerve OD with optic disc hemorrhages and a normal optic nerve OS
Optic nerve exam, right eye
Differential diagnosis

- AION
- NAION
- Compressive Optic Nerve Tumor
- CRAO
- CRVO
Diagnosis:

Giant Cell Arteritis
Diagnosis

Sed rate (age/2 for men, age+10 / 2 for women)

C-reactive protein

Thrombocytosis (platelets > 400 X 10^3/uL)

IVFA (delayed choroidal filling)

Temporal artery biopsy (may need to biopsy both sides)

Histopathology: Temporal Artery Biopsy
Treatment

IV steroids 250 mg IV q6h X 12 doses

Oral prednisone 80-100 mg PO QD

Consider anti-ulcer medicine (PPI, H2 blocker)

Taper steroids based on clinical response

Treatment often lasts 6-12 months

Always consider GCA in cases of unilateral vision loss—other eye involvement!!

A 57 year old male walks into your office complaining of double vision and headache.
Questions:
Questions

Unilateral or bilateral?

Characterize the headache

Any eye pain?

Time course-- acute, subacute, chronic

Lid droop?
Case report

The eye pain and headache began earlier in the day, followed by double vision.
Double vision
Case report

Exam reveals binocular double vision with deficient adduction, elevation, and depression of the left eye.

Complete ptosis of the left upper eyelid.

Left pupil is fixed and dilated.

Vision is 20/20 OU
Case report
Differential diagnosis

- Myasthenia Gravis
- Thyroid Eye Disease
- GCA
- Idiopathic Orbital Inflammatory Syndrome
- Internuclear Ophthalmoplegia
- Third Nerve Palsy involving Pupil
Diagnosis

You diagnose CN III palsy, with presumed PCOM aneurysm....
Why
Why

Case report

Testing

MRI/MRA

Angiogram

If pupil-sparing and over 50, then observe (microvascular)

Treatment

Neurosurgery consult-- coil embolization v. surgical clipping

Case report:

A 70 year old lady walks into your office complaining of left eye pain and blurred vision.
Questions

When did the pain start?

Any headache?

Any nausea?

Any haloes?
Case report

The patient reports eye pain that woke her up in the middle of the night.

She sees haloes around lights.

She feels like vomiting.
<table>
<thead>
<tr>
<th>Acute closed-angle glaucoma (Fig 5.13)</th>
<th>Acute iridocyclitis (Fig 6.3)</th>
<th>Conjunctivitis</th>
<th>Keratitis and corneal ulcers (Figs 6.1 and 6.2)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Signs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hyperaemia</td>
<td>Circumcorneal purple - diffuse conjunctival</td>
<td>Conjunctival, severe and diffuse. Brick red</td>
<td>Diffuse conjunctival</td>
</tr>
<tr>
<td>Cornea</td>
<td>Epithelial oedema (logged view of iris)</td>
<td>Clear and sparkling</td>
<td>Looks clear but fluorescein stains 'superficial punctate' spots, seen with slit-lamp microscope</td>
</tr>
<tr>
<td>Anterior chamber</td>
<td>Shallow (N.B. see fellow eye)</td>
<td>Exudate (flour, cells) Often deep. Sometimes hypopyon</td>
<td>Normal</td>
</tr>
<tr>
<td>Iris</td>
<td>Oedematous and hyperaemic</td>
<td>Normal</td>
<td>Normal</td>
</tr>
<tr>
<td>Pupil</td>
<td>Everted, oval</td>
<td>Contracted</td>
<td>Normal</td>
</tr>
<tr>
<td>Pupil light reflex</td>
<td>Absent or reduced</td>
<td>Reduced or absent</td>
<td>Normal</td>
</tr>
<tr>
<td>Tension</td>
<td>Very high</td>
<td>High, normal or low</td>
<td>Normal</td>
</tr>
<tr>
<td>Tenderness</td>
<td>Marked</td>
<td>Moderate to marked</td>
<td>Slight</td>
</tr>
<tr>
<td>Other points</td>
<td>Parent or sibling may have had emergency eye operation</td>
<td>Ankylosing spondylitis in males sometimes</td>
<td>Pre-auricular lymph node swollen and tender. Epidemic at school or work?</td>
</tr>
</tbody>
</table>

http://www.zen104556.zen.co.uk/Medicine/Ophth/REp2.gif
Clinical Exam

Visual acuity 20/20 OD, 20/40 OS

IOP OD 17, OS 44

3+ limbal injection OS

Cloudy cornea OS

Cup to disc ratio .3 OD, cupping not visible OS
Diagnosis

Acute Angle Closure Glaucoma
Acute Angle-Closure Glaucoma

http://medlibes.com/uploads/Screen%20shot%202010-07-30%20at%201.18.13%20PM.png
Angle Closure Glaucoma

Redness of eye  Dilated pupil  Cloudy cornea

http://www.educatehealth.ca/media/306373/example%20of%20acute%20angle%20closure%20glaucoma.png
Angle closure glaucoma

http://webeye.ophth.uiowa.edu/eyeforum/atlas/photos/angle-closure.jpg
Treatment

Topical glaucoma drops (Topical Steroid)
Diamox PO or IV
Laser PI or surgical iridectomy
Cataract surgery??
Monitor IOP

Treatment

Treatment

Angle Closure Glaucoma

Most categories of drugs that list glaucoma as a contraindication or adverse effect are concerned with inducing acute angle-closure glaucoma. These medications will incite an attack only in those individuals with occludable angles (ie, very narrow anterior chamber angles). The classes of medications that have the potential to induce angle closure are topical anticholinergic or sympathomimetic dilating drops, tricyclic antidepressants, monoamine oxidase inhibitors, antihistamines, antiparkinsonian drugs, antipsychotic medications, and antispasmodic agents.\[3\]

Sulfa containing medications may induce angle-closure glaucoma by a different angle-closure mechanism, involving anterior rotation of the ciliary body. Typically, the angle closure is bilateral and occurs within the first several doses of the sulfonamide-containing medication. Patients with narrow or wide open angles are potentially susceptible to this rare and idiosyncratic reaction. (Topamax)

Summary

Giant Cell Arteritis – treat early to avoid blindness

Third Nerve Palsy with Pupillary Involvement – aneurysm may kill patient

Acute Angle Closure Glaucoma – laser PI is definitive treatment
Thank you for your attention

Virginia Eye Institute

Richmond, VA

804-287-4200

wut@vaeye.com