Seven easy steps in unexplained visual loss

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Disclosures

- No financial interests
- Content information Andrew Lee, MD (neuro-ophthalmology, Baylor College of Medicine).

- Insure vision loss = actual chief complaint
- Complete eye exam every time (no short cuts)
- Special effort to detect subtle causes of vision loss
- Formal visual field if unexplained symptoms
- Special tests (e.g., OCT, FA, neuroimaging if indicated)
- Rule out optic neuropathy or hemianopsia
- Rule out ORGANIC and prove non-organic BEFORE labeling someone as such

Step 1: Chief complaint = “blurred vision” is not sufficient

- What do you mean by blurred?
- One or both eyes?
- Central or side vision, or both?
- Double vision?
- Jumping eyes? (nystagmus)
- Processing of visual information?

“Blurred vision” may not mean loss of vision (afferent disease)

- Double vision
  - Is it double vision?
  - Is it monocular or binocular (cover one eye)
- Nystagmus (oscillopsia)
  - Is it jumping or moving?
- Visual processing
  - Agnosia (eg. Prosopagnosia, simultagnosia)
  - Visual variant of Alzheimer’s disease

Step 2: Complete eye exam

- No short cuts
- Check relative afferent pupil defect yourself
- Check color vision and visual field
- Ophthalmoscopy
  - High magnification and high clinical suspicion

- Don’t take the shortcut

Main causes for No APD in Unilateral Visual Loss

- Macular disease (e.g. Macular hole)
- Media (cataract, refractive)
- Making it up (non-organic)
- Missed it (look again!)
- Bilateral optic neuropathy & retrogeniculate etiologies = normal pupil

Complete eye exam

- Slit lamp biomicroscopy
  - Look after dilation
  - Retroillumination
  - Look for posterior subcapsular cataract, oil droplet cataract
  - Match lens opacity to visual acuity

- Look at lens and grade opacities ("NSC/PSC = 20/30 or ≠ 20/30")

Behavior change

- Check for RAPD
- Do a formal visual field
- Look for “obligatory sign” that will speed up your neuro-ophthalmic referral
  - RAPD
  - Rule out A’s (Apoplexy, Arteritis, Aneurysm, Arterial dissection, abscess)

Step 3: Rule out things you don't want to end up sending to your neuro-ophthalmologist

- Oil droplet of subtle posterior subcapsular cataract
- Refractive errors, keratoconus
- Epiretinal membrane, cystoid macular edema, macular hole, geographic atrophy or RPE

Step 4: Formal visual field

- Unreliable visual field is the same information as NO visual filed performed
- Confrontation visual field = minimum
- Media and refractive etiologies rarely produce filed defects
- Any respect of vertical meridian significant

Common errors in evaluation of children

- Failure to perform visual field
- Settling for “unreliable” automated perimetry as your only visual field
- Failure to complete the exam because of “poor cooperation”
- Assuming that sullen is evidence for non-organic etiology (sullen is normal teen behavior)

Full Eight point Exam

- Formal visual field (even if 20/20)
- Homonymous & bitemporal hemianopsia may have 20/20 acuity
- Retrochiasmal disease will have NORMAL structural eye exam (no RAPD, no optic atrophy)
- Normal eye exam does NOT rule out pathology

Look at the macula

- Subtle macular lesions can be missed without high magnification and high suspicion (e.g. macular hole, CME)
- "WNL" should mean "*within normal limits*", NOT "*WE NEVER LOOKED*"

Most commonly missed

- ERM
- Cystoid macular edema
- Small macular hole
- Subtle serrous retinal detachment
- Retrobulbar optic neuropathy

Behaviour change

- “normal eye exam” is NOT a diagnosis
- “not the retina” or “not cornea” is NOT a diagnosis
- “not my job” is NOT appropriate
- Recognize, triage and refer

OCT in unexplained visual loss

- Measurement of retinal nerve fiber layer
- Measurement of retinal thickness
- Detection of subtle macular pathology

- Look really hard at the macula
- Do macular photostress test
- Fluorecein angiogram
- Refer to retina specialist

Step 5: OCT in Unexplained visual loss? Is it retinal or optic nerve?

- Macular edema or macular hole
- Epiretinal membrane
- Cystoid macular edema or subretinal fluid
- Vitreous traction on macula or optic nerve

OCT can see better than me

- If OCT sees no pathology, then no need to refer to retina specialist
- If OCT normal but seems retinal, then consider fluorescein angiogram (OCT cannot see perfusion)
- OCT has recued number of FAs performed for unexplained visual loss by 75%

Behavior change

- Optic atrophy is a SIGN and NOT a diagnosis
- ??? Mild optic atrophy does NOT protect you
- Little signs can be BIG problems
  - Little RPAD = Big RPAD
  - Little Horners syndrome = same as big one
  - Little papilledema has same significance as minimal papilledema
  - Normal eye exam + RAPD = retrobulbar

Rule out optic neuropathy

- Look for subtle signs of optic neuropathy
  - Decreased color vision
  - Relative afferent pupillary defect
  - OCT abnormal
  - Mild disc pallor or disc edema
  - Abnormal visual field
- If you miss a non-optic nerve cause for visual loss (PSC, ERM, refractive) it is no big deal
- If you miss an optic neuropathy it could be a big deal (compressive optic neuropathy)

Prove non-organic before labeling patient non-organic

- Non-organic = preferred term
- Do you really know they are faking?
- Do you know their motivation?
- They might be organic with overlay!

- WE ONLY SEE WHAT WE LOOK FOR. WE ONLY LOOK FOR WHAT WE KNOW

Most common Errors In Unexplained Visual Loss

- Failure to check RAPD
- Failure to perform visual field
- Failure to perform a confrontation filed in an unreliable formal field patient
- Failure to get best corrected vision (contact lens, over-refraction, retinoscopy)
- Jumping to conclusions – non-organic

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