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 neuroophthalmologist

- 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
• Fluorescein 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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