A Practical Approach to the Patient with Unexplained Visual Loss

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House Without the Attitude

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Objective

Outline an approach to the patient with unexplained visual loss.
Unexplained Visual Loss

Where is the problem?

- Refractive / Media
- Retina / Choroid
- Optic Nerve / Visual Pathway
- Nonorganic
The Drinking Dentist

CC: 60-yr-old Dentist c/o gradual bilateral blurriness.

PMH: hypertension

Social: 1 vodka martini/day

Dx: Tobacco-Alcohol Amblyopia

Told to stop drinking
The Drinking Dentist

VA: 20/60 OU       N: J2 OU
Color: 10/10 HRR OU
Pupils: moderate, no RAPD
VF: normal
Fundus: normal

DX: Tobacco-Alcohol Optic Neuropathy?
Refractive / Media

• irregular astigmatism
• oil-droplet cataracts
• occult corneal disease
Refractive / Media

Evaluation

- pinhole
- near vision
- retinoscopy/corneal topography
- direct ophthalmoscopy
- rigid contact lens over-refraction
- color vision
Neuro-op Secret Weapon

Central visual loss from optic neuropathy causes decreased color vision! Color not affected by refraction, media, retinal disease unless acuity < 20/200.

• Hardy-Rand-Rittler - more sensitive

• Ishihara
The Drinking Dentist

VA: 20/60 OU   N: J2 OU
Color: 10/10 HRR OU

Further Testing

Direct Ophthalmoscopy: blurry view
Potential Acuity Meter: 20/20 OU
Repeat SLE: oil drop cataracts
Summary - Refractive / Media

These are the easy ones!
But, they are often missed.

• pinhole, retinoscopy, corneal topography
• color vision, direct ophthalmoscopy
• rigid contact lens over-refraction
Unexplained Visual Loss

- Refractive / Media
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- Nonorganic
Retina/Choroid

History

• “distorted” “crooked” “broken-up” are terms used to describe metamorphopsia, usually due to macular disease.

• tiny central scotoma also retinal
Retina/Choroid

Exam

• no or small RAPD

• Amsler grid
Retina/Choroid

Exam Ancillary Studies

- FANG / ICG
- OCT
- ERG
57-yo-WF c/o peripheral vision loss after colonoscopy.

PMH: HTN, lung ca

**EXAM**

VA: 20/25 OU  Color: NL

Pupils: moderate, no RAPD

SLE: rare ant vit cell OU
Next Step?
ERG Flat
Cancer Associated Retinopathy (CAR)

- rapid visual loss (peripheral first)
- positive visual phenomenon
- ring scotomas early
- vitreal cell / retinal vasc attenuation
- ERG abnormal
- anti-recoverin antibodies
Andy Lee’s 1st rule of unexplained visual loss:

If referred by retinal service,
the problem is always retinal.
Unexplained Visual Loss

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Relative Afferent Pupillary Defect

RAPD

Most:

⇒ critical, objective
⇒ under-emphasized
Secret Weapon!

HRR  Ishihara
Perimetric Strategies

Goldmann

Automated
24-2, 30-2

Amsler grid
Automated
10-2
75-yr-old WF c/o difficulty reading since yesterday.

PMH: Hypertension

EXAM

VA: 20/20 OU     N: J1+ OU
Color: NL       VF: CFx4 OU
SLE: pcIOL OU
Fundus: scattered drusen
Humphrey 10-2 can pick up scotomas that fit between tested points on the 24-2.

Left superior paracentral homonymous hemianopic scotoma  Dx: occipital stroke
71-yr-old WM c/o **difficulty reading** x 4 months. Has seen 3 doctors and has 5(!) new pairs of glasses. Wife notes occasional clumsiness.

**EXAM**

**VA:** 20/20 OU  
**N:** 20/20 OU  
**HVF 24-2 & 10-2:** NL OU  
**Everything NL**
From the Boston Diagnostic Aphasia Examination
Visual Variant of Alzheimer’s Disease

- reading difficulties (90%)
- simultanagnosia (66%)
- spatial disorientation (56%)
- ocular apraxia (50%)
- homonymous VF defects (25%)
Unexplained Visual Loss
Cerebral & Optic Nerve Conclusions

- Did I miss a RAPD?
- Is color vision normal?
- Did I do the correct visual field?
- Is there diffuse cerebral dysfunction?
Unexplained Visual Loss

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28-yr-old WF c/o **poor vision OS after being kicked in eye.**

**POH:** HLA B27+ uveitis, h/o macular edema, best corrected VA 20/40

**EXAM**

**VA:** 20/40 OD, CF OS  Pupil: no RAPD  
**SLE/Fundus:** NL  ????
Nonorganic

- Malingering: secondary gain
- Munchausen: factitious, intentional
- Conversion Disorder: psychiatric
- Hypochondriac: exaggerates
Nonorganic

Approach depends on laterality & severity

**Easy**

- severe bilateral or unilateral
- moderate unilateral

**Difficult**

- mild, moderate bilateral
- non-organic overlay
Nonorganic

The vertical prism test

• single Snellen letter, 2 lines bigger than best Va in good eye
• 4 PD prism placed base-down over good eye
• “What do you see?”
The Vertical Prism Test

4PD prism held base down in front of good eye

Response if organic
Response if nonorganic
The vertical prism test

Conclusions

• simple & quick

• sees 2 letters – you got ‘em!

• sees 1 letter – look for etiology of visual loss
If vision is bad in one eye, 1 letter will be seen.

Our patient 20/40 OD, Count fingers OS
If vision is good in both eyes, 2 letters will be seen.

She saw 2 letters
Unexplained Visual Loss

Summary

1. Where is the problem?
2. Use common tools: color vision, direct ophthalmoscopy
3. Get the correct visual field test.
4. Prove nonorganic! (vertical prism test)
Thank-you for your attention.