Visual loss with a normal eye exam

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Conflict of interest

• No conflict of interest

• I will not discuss off label use of medications
The problem

Our objective

Craphound.com
Potential locations

- Media/refractive
- Retinal
- Optic nerve
- Chiasm
- Cortical

Nonorganic
Visual fields

- Defect in one eye
- In front of chiasm
Pearl: monocular defect that respects horizontal = nerve >>> retina
Nonorganic fields can be extremely consistent, reproducible and reliable on automated perimetry.
The Profile

- Imposters
- Psychotics
- Sociopaths
- Neurotics
- Both genders
- All ages
- Normals
Diagnosis

Need to prove patient sees better than claims

Need to objectively demonstrate normal vision AND field to rule out true vision loss
New Optotype

*Ophthalmology, April 2002*
Prism Dissociation

- 8 PD lens base down in front of good eye
- Put the 20/20 letter up on screen
- “Do you see 1 T or two T’s?”
Management

- If cannot prove normal vision AND visual field, consider the following tests:
  - Corneal topography
  - FA/OCT
  - ERG or mfERG
  - MRI
  - SPECT or PET

Follow the patient
BCVA 20/50 LE
Retinopathies to consider

- Vitreomacular traction
- Central serous
- Commotio
- AZOOR
- Macular ischemia
- Macular hole
- Plaquesnil toxicity
- Stargardt’s disease
- Cone dystrophy
- Paraneoplastic
- Macular edema
OD = 20/20, OS = 20/20
Normal pupils and color vision
Commotio Retinae

- 52 eyes macular commotio
- OCT showed correlation with final vision
  - Disrupted IS/OS junction
  - Atrophy of ONL


Prediction of visual prognosis with spectral-domain optical coherence tomography in outer retinal atrophy secondary to closed globe trauma.

An acute optic neuropathy affecting the retrobulbar optic nerve will demonstrate a normal fundus
Color vision

• 8-10% of men are congenitally colorblind

• Affected with acuities of 20/150 or worse
Examination of the Pupils

- Patient stares in distance
- Illuminate pupils from below
Examining Pupils in Upgaze
Advantages

• No interfering reflection

• Superior rectus/Levator firing
DDx retrobulbar optic neuropathy

- Optic neuritis
- Posterior ION
- Compressive
- Traumatic
- Nutritional
- Toxic
- LHON
Retrobulbar optic neuropathy

• Generally speaking, all of these will require an MRI orbit
Considerations

• In the older patient, this is GCA until proven otherwise

• Indirect traumatic optic neuropathy
  – forehead or cheek
  – LOC is not required
Considerations

• Nutritional/Toxic optic neuropathies are “always” bilateral

• B12, Folate, Copper

• Ethambutol, Linezolid, Methanol
Considerations

• Although Leber’s starts in one eye, there may be no or minimal afferent pupillary defect

• Scotomas are rare in NOVL
Chiasmal lesions

Pearl: Bitemporal hemianopias are often asymptomatic
The problem is in the brain
Cerebral vision loss

• If unilateral, the acuity will be normal

• To lose acuity, the lesion must be bilateral

• The acuity will be equal between eyes
Cerebral vision loss

- The visual fields should show relatively symmetric results
- The pupils will be normal if the lesion is behind the lateral geniculate
Cerebral vision loss and normal MRI

Moster ML, Surv Oph, 1996
Summary

• Visual field testing helpful

• Diagnosis of nonorganic vision loss requires normal acuity and visual field

• Consider: corneal topography, RNFL, OCT mac, mfERG, ERG, MRI, SPECT
Thank you for your attention!