Functional Visual Loss

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Functional Visual Loss

• Malingering: feigned findings for secondary gain
• Hysteria: conversion reaction; transmutation of symptoms to the visual system
  – Patients unaware of functional characteristics
  – Psychological disturbance
  – Induced (Münchausen)

Financial Disclosure

• Neuro-ophthalmology and financial interests: a contradiction in terms
• No I don’t have a law degree

Functional Disorder - History

• Military & avoidance of service
  – World War I
  – World War II
  – Aviation
• Rise of the litigious society:
  “California syndrome”
• Federal Employee’s Compensation Act
  • 1916, extended 1970’s

Malingering

• Reverse radar: bang into every object
• Attitude: variably hostile and indifferent
  – Challenging
  – Smirk
  – Lawyer in the wings

Hysteria

• Bizarre affect: “la belle indifférence”
• Avoidance radar
• Greek: hysterus (womb)
• Egyptian: “unstable females” to a “discontented womb”
• Charcot
• Freud
Hysteria

- Suggestible
- Positive review of system
  - As many positive answers as questions
- Exaggeration syndrome

Functional Visual Loss - Importance

- Avoid missing important organic disease
- Avoid expensive potentially dangerous studies
  - CT
  - MRI
  - Angiography
  - Craniotomy

Functional Visual Loss - Importance

- Federal claims
  - 1974: 123,000 = $274 million
  - 1981: 193,000 = $910 million

Most Difficult Patients

- Combination of organic and psychological disease (25-50%)
- Exaggerated organic disease
- Critical: old records
- Just because there is a functional component does not mean the patient is normal

Incidence of Functional Disease

- Psychogenic
  - Children and young adults
  - Female > male
- Malingering
  - Work related
  - Male > female

History in Suspected Functional

- As much detail as possible
- Names of previous physicians: Rule #1: “Get the old records”
- Any history of accident or pending litigation
- Change in social situation
- Family situation
**Functional Visual Loss - Suspcion**

- Symptoms out of proportion to findings
- Lack of afferent pupillary defect
- Normal disc (NB: atrophy takes weeks to develop)

**Functional Visual Loss - Diagnosis**

- Indirect evidence
  - Lack of evidence of organic disease
  - Symptoms out of proportion to signs
- Direct evidence
  - Better function than possible if complaints accurate
  - “Gotchya”

**Ophthalmic Exam in Functional Pt**

- “Everything counts”
- Observe patient in waiting room
- How they get into room
- Sun glasses
- Eye contact
- Avoid confrontation
- Frustrated: take a break/reschedule

**Importance of Objective Signs**

- Afferent pupillary defect
  - Amblyopic eyes may have mild APD
- Optic atrophy
- Ophthalmoplegia

**Ocular Manifestations**

- **Acuity loss**
- Field loss (often constriction)
- Ptosis
- Diplopia
  - Convergence spasm
  - Convergence insufficiency
- Nystagmus/Eyelid flutter
- Pupillary abnormalities (anisocoria)

**Acuity Loss**

- Best corrected (avoid induced refractive error)
  - Refraction
  - Pinhole
  - Near vision (equivalence)
- Monocular vs binocular
- Partial vs complete
Acuity Loss
- Bilateral complete loss
- Unilateral complete loss
- Unilateral incomplete loss
- Bilateral incomplete loss

Binocular Blindness – Indirect Clues
- Difficulty non visual tasks
  - Sign name
  - Approximate finger tips
  - Look at the observer (eye contact)
- Indicates lack of cooperation but does not prove functional

Binocular Blindness - Direct
- Response to threat
- Visually guided eye movements

Threat
- Visual threat: watch out for nonvisual clues
- Drop $20 (maybe $100 today)
- Expletives on flash cards
- Politically incorrect
  - Naked nurse
  - Playboy/Playgirl pictures

Expletive
- OBSCENITY

Expletive
- OSCENITÁ
Binocular Blindness - Direct

- Response to threat
- Visually guided eye movements

Visually Guided Eye Movements

- Full field optokinetic drum
- Mirror tests: pursuit
- Suppression of VOR
- Saccadic accuracy: “look here”
- Tissue test
Visually Guided Eye Movements
- Full field optokinetic drum
- Mirror tests: pursuit
- Suppression of VOR
- Saccadic accuracy: “look here”
- Tissue test

CHM 48yo male
6/96: Complete loss vision
Va NLP OU
Ext: palp 8/7, H 15 OU
P: 4.5/4.8 prob LAPD
EOM: sl add delay OS
SLE: w/o rubeosis
Ta: 20/19
Fundus:

CHM – POH
41yr h/o JODM
PDR dx 1981
Rx: PRP
Gradual loss vision
Unable to see OS X 2yrs
4/96: vertical diplopia
6/96: Hosp w/ ARDS
Awoke w/ complete visual loss

CHM – W/U
Mirror test: tracking OD

Visually Guided Eye Movements
- Full field optokinetic drum
- Mirror tests: pursuit
- Suppression of VOR
- Saccadic accuracy: “look here”
- Tissue test

Visually Guided Eye Movements
- Full field optokinetic drum
- Mirror tests: pursuit
- Suppression of VOR
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- Tissue test
Monocular Blindness

- Monocular use of binocular blindness tests
- Confusion as to viewing eye
- Stereopsis
- Field requiring binocular vision
  - Temporal crescent expansion
  - Blind spot
- Induced diplopia: vertical prism

Confusion Viewing Eye

- Red-Green glasses
- Polarized glasses
- Fogging good eye (cross cylinders)
- Amblyoscope

BBF 45yo female
11/89: Severe ↓Va OD
“Thin rim of vision”
Rx: (1/90): 1gm IV Solumedrol X 5

BBF – F/U
3/90: Va still “terrible”
Va HM,20/25
N 3pt OS
VF:
Ext: w/q
P: w/o APD
EOM: full, nl PZV
SLE: corneal scar
Ta: 14/13
Fundus: nl DMV

BBF – PMH
1967: Recurrent herpetic keratitis
1972: “Vasculitis”
Rx: Prednisone
Colectomy for colon inflammation
1978: Sudden painful loss of vision (↑ w/ eye movements)
Dx: optic neuritis
Rx: RB steroids
MTX, Cyclosporine

BBF – W/U
Red/Green: 20/30- OD
Confusion Viewing Eye
- Red-Green glasses
- Polarized glasses
- Fogging good eye (cross cylinders)
- Amblyoscope

Monocular Blindness
- Monocular use of binocular blindness tests
- Confusion as to viewing eye
- Stereopsis
  - Field requiring binocular vision
    - Temporal crescent expansion
    - Blind spot
  - Induced diplopia: vertical prism
RDC 16yo male

11/88: 2yr h/o NLP OD
Va NLP, 20/15
N 3pt OS
VF:
Ext: w/q
P: w/o APD
EOM: full
SLE: wnl
Ta: 17 OU
Fundus: nl DMV

RDC – POH
Never saw well out of the right eye

RDC – PMH
Incarcerated

RDC – W/U
Repeat VF (both eyes open):

RDC – W/U
4A base out test: without movement OD

RDC – W/U
OKN: positive response OD
Monocular Blindness

- Monocular use of binocular blindness tests
- Confusion as to viewing eye
- Stereopsis
- Field requiring binocular vision
  - Temporal crescent expansion
  - Blind spot
- Induced diplopia: vertical prism

Monocular Reduced Vision

- Eye confusion as in monocular absolute loss
- Approach for binocular reduced vision
- Importance of refraction (and cycloplegia)

CLJ 24yo female
10/07: ↓Va
Va 20/300, 20/15
N 6pt, 3pt
VF: Ext: w/q
P: w/o APD
EOM: full
SLE: wnl
Fundus:

CLJ - POH
10/07: 1d “sparklers” & curtain over vision
Va LP, 20/20
VF:
Fundus: “normal”

CLJ – W/U
Automated retinoscopy: -7.00 + .25 X 18
M: -7.00 to 20/40
CLJ – W/U
Cycloplegic manifest:
- .25 + .25 X 90 to 20/50
+ .25 to 20/20

CLJ – PMH
Bipolar disorder
Suicide attempt
H/o drug abuse
Fibromyalgia

Binocular Reduced Vision
- Specialty charts
- Disparity distance and near
- Coaxing (DKR)
  - Start at 20/10 or 20/15
  - Addition & subtraction small sphere
- E-game, Landolt C

Specialty Charts
- 50 E on tops
- Change distance
- Multiple lines same optotype

Binocular Reduced Vision
- Specialty charts
- Disparity distance and near
- Coaxing (DKR)
  - Start at 20/10 or 20/15
  - Addition & subtraction small sphere
- E-game, Landolt C
Disparity

- Concept of subtended angle
- Importance of measuring test distance
- Importance of best corrected acuity (refract)
- Myopia
- Presbyopia

Binocular Reduced Vision

- Specialty charts
- Disparity distance and near
- Coaxing (DKR)
  - Start at 20/10 or 20/15
  - Addition & subtraction small sphere
- E-game, Landolt C

DKR

- Who has more perseverance you or patient
- Small changes
  - Cylinder
  - Sphere
- Coaxing: try, guess, how many letters, what to they look like

DMW – POH

Age 17: “Driving I couldn’t see signs”
W/U (JHH): “Eyesight like a 60yo person”
“I only got to work 8 years”
Ophthalmology consult X 2: “disc pallor”
VEP: ?
MRI: “normal”

DMW – W/U

DKR

Va (picture chart): 20/60 OU
N (E-game): 8pt OU
N (X & O): 5pt OU
Binocular Reduced Vision

- Specialty charts
- Disparity distance and near
- Coaxing (DKR)
  - Start at 20/10 or 20/15
  - Addition & subtraction small sphere
- E-game, Landolt C

Alternative to Snellen Optotypes

- E-game
- Numbers
- Landolt C

WRG 24yo male
7/88: 1mo post GSW LLL to L occipital lobe
Va 20/20,LP; N 3pt OD
VF:
Ext: symblepharon OS
P: L pupil amaurotic
EOM: abn pursuit to L
SLE: vit heme OS
Ta: 11/5
Fundus: nl OD

WRG – F/U
7/92: “No better”
Va 20/400,NLP; N 5pt OD
VF:
Ext: H 17/14
P: L pupil amaurotic
EOM: 35ΔLXT
SLE: phacodenesis OS
Ta: 19/10
Fundus: nl DMV OD

WRG – W/U
E-game: 20/30
N (E-game): 3pt OD

WRG – F/U
5/93: “Real blurry”
Va 20/70,NLP
N 5pt at 12cm
VF:
Ext: w/q
P: amaurotic pupil OS
EOM: 35ΔLXT
SLE: partial absorbed subluxed lens OS
Fundus:
WRG – W/U
Picture chart: 20/30
N (E-game): 3pt OD

Ocular Manifestations

- Acuity loss
- Field loss (often constriction)
- Ptsis
- Diplopia
  - Convergence spasm
  - Convergence insufficiency
- Nystagmus/Eyelid flutter
- Pupillary abnormalities (anisocoria)

Visual Field Defects

- Diffuse depression
- Homonymous defect
- Constriction

ADP 23yo female
1/97: Blurred Va
VF:
3/97: Blurred Va OS
VF:

ADP - POH
1985: “migraine”
“poking needles”
“Blurriness X 15”
“Double + triple Va”

ADP – W/U (4/97)
Va 20/20 OU
N 3pt OU
VF:
Ext: w/q
P: w/o APD
EOM: full
SLE: wnl
Ta: 19/20
Fundus: nl DMV
Visual Field Defects

- Diffuse depression
- Homonymous defect
- Constriction

Homonymous Hemianopsia

- Saccadic accuracy
- Binocular field testing
- Silent confrontation fields

DSB 18yo male
5/94: Referred for “difficulty seeing left”
Va 20/25, 20/20
N 3pt OU
VF: Ext: w/q
P: w/o APD
EOM: full
SLE: wnl
Ta: 19 OU
Fundus: nl DMV

DSB – PMH
3/93: Unrestrained passenger MVA
Facial lacerations
Visual complaints
Legal action

DSB – W/U
Repeat VF (both eyes open):

Goldmann VF:
Visual Field Defects

• Diffuse depression
• Homonymous defect
• Constriction

JMN 28yo male
7/86: VF constriction
Va 20/25 OU
VF:
Ext: w/q
P: w/o APD
EOM: full
SLE: wnl
Fundus: nl DMV

JMN – POH
8/86: Orbital cellulitis
Va 20/20 OU
N 3pt OU
VF: full to confrontation

JMN – W/U
Saccade to targets 40° eccentric OU

Constriction

• One/two meter tangent testing
  – “Tubular fields”
• Goldmann visual fields
  – Spiral fields
  – Crossing isopters

NMS 27yo female
4/83: “Pseudotumor”
Va 20/100,20/200
N 20/800 OU
VF:
Ext: bilat ptosis
P: w/o APD
EOM: full
SLE: wnl
Ta: 15/10
Fundus:
NMS – PMH

4/82: Severe HA + blurry vision + photosensitivity
Princeton hospital: Dx: manic depressive AMA
Later WVU: “Pseudotumor”
LP: 270
Rx: steroids
4/83: Admit w/ HA, N/V

TJN 34yo female

8/06: “Exacerbation of MS” Double vision not relieved
Va: 20/80 OU
N: 20/400 equiv OU
VF:
Ext: w/q
P: w/o APD
EOM: full, Titmus 9/9
SLE: wnl
Fundus: nl DMV

TJN – PMH

Obesity
S/p gastric bypass

TJN – W/U

DKR: 20/40,20/60

TJN – W/U

Goldmann VF:
Automated Visual Fields

- May raise more questions than answers
- Fields are usually bizarre
- High fluctuation common
- Multiple false positive/negatives
- Binocular testing may be useful

Ocular Manifestations

- Acuity loss
- Field loss (often constriction)
- Ptosis
- Diplopia
  - Convergence spasm
  - Convergence insufficiency
- Nystagmus/Eyelid flutter
- Pupillary abnormalities (anisocoria)
Ptosis
- Look at position of eyebrow
- Overacting orbicularis
- Possible early blepharospasm

Ocular Manifestations
- Acuity loss
- Field loss (often constriction)
- Ptosis
- Diplopia
  - Convergence spasm
  - Convergence insufficiency
- Nystagmus/Eyelid flutter
- Pupillary abnormalities (anisocoria)

Diplopia
- Convergence spasm
  - Miosis
  - Accommodation
- Convergence insufficiency
  - Near worse than distance

MBG 30yo female
10/07: Double vision
Va 20/20, 20/25
N 3pt OU
VF:
Ext: w/q
P: w/o APD
EOM: 30ΔET
SLE: wnl
Ta: 14/15
Fundus:

MBG – POH
1996: Glasses
Migraine

MBG – PMH
9/07: “Typical migraine”
Next morning double on awakening
ER
MRI: “possible demyelination”
EEG: nl
Dx: myasthenia vs MS
10/07: Chest tightness
Admit
Ocular Manifestations

- Acuity loss
- Field loss (often constriction)
- Ptosis
- Diplopia
  - Convergence spasm
  - Convergence insufficiency
- Nystagmus/Eyelid flutter
- Pupillary abnormalities (anisocoria)

Nystagmus

- Horizontal
- Usually pendular
- Usually not sustained
Pupillary Abnormalities

- Often pharmacologically induced
- Poorly reactive pupil

Pupillary Work-up

- Look for synecchiae
- Look for signs inflammation on SLE
- Lack of constriction to 1% pilocarpine

Functional Visual Loss - Children

- Less likely true hysteria
- Often associated social integration: school & friends
- Parents may be difficult
- Avoid confrontation
- Use of eye drops that burn slightly
- Use of “visual rest” TV avoidance

LNH 11yo female

2/98: “Failed school exam”
Va 20/50,20/40
N 6pt,5pt
VF:
Ext: seborrhea
P: w/o APD
EOM: Titmus 5/9
SLE: wnl
Fundus: nl DMV

LNH – PMH

New school
Previously “went at their own pace”
Now public school

LNH – W/U

DKR: 20/25,20/20
Coexistent Organic Disease

• Kathol (1983): 11/42 (26%)
• Keltner (1985): 45/84 (53%)
• UVA (1998) Adults: 31/151 (21%)
• Migraine: 16/151 (11%)
• UVA (1998) Children: 4/45 (9%)
• Migraine: 3/45 (7%)

Functional Disorder - Treatment

• Avoid confrontation
• Avoid tests that won’t help (further confuse)
  – Automated static perimetry
  – VEP
• “The good news” “Half full”
• Follow for changes

Functional Disorder - Pediatric Rx

• Deal with parents
• Positive reinforcement
• Negative reinforcement
  – Eye drops
  – “Retinal rest”

SWN 17yo female
7/97: Visual complaints after fall
Va 20/20 OU
N 3pt OU
VF: Ext: w/q
P: w/o APD
EOM: Titmus 9/9
SLE: wnl
Fundus: nl DMV

SWN – PMH
7/97: Fell in shower
“lying in shower calling for help”
Next morning problems with vision OS: “greyish”
2 days later: “grey spot” OD
“Kept getting bigger”
SWN – W/U
CT: “normal”
MRI: “normal”
Review

24-2 OU:

Goldmann VF:

Suggest return for lumbar puncture if not better
Can’t drive with current vision

8/97: “Back to normal”
Va 20/20 OU
N 3pt OU
VF:
Ext: w/q
P: w/o APD
EOM: full
SLE: wnl
Fundus: nl DMV
Functional Disorder - Traps

- Corneal problems:
  - Keratoconus
  - Dry eye
- Lens: oil droplet cataracts
- Retina: maculopathies
- Optic nerve: bilateral involvement
- Chiasmal disease
- Bilateral homonymous defects

SEY – 25yo male
8/07:
\[ \downarrow \]
Va 20/20, 20/40
N 3pt OU (5cm OS)
VF:
Ext: w/q
P: w/o APD
EOM: full
SLE: wnl
Fundus: nl DMV

SEY – W/U
Corneal topography:

SEY – POH
Glasses X 2yrs
2005: LASIK

BL – 31yo male
5/04: Decrease vision
Va 20/100, 20/200
VF:
Ext: w/q
P: w/o APD
EOM: full
SLE: wnl
Ta: 15/14
Fundus:

BL – W/U
mERG:
DOM 25yo male
4/93: Bilateral visual loss while in jail
Va: 3/200 OU; no APD; Disc: normal

DOM - W/U
ERG: wnl
Serology:
VDRL: neg
ESR: nl
ANA: negative
CBC: nl

DOM – W/U
Leber’s genetic screen: + mutation at 3460
F/U (7mo): “Worse”
Va: 3/200 OU; N: 20/400 equiv OU

NFM 42yo female
11/92: 10mo h/o “blurred Va & trouble w/ colors”
Va: 20/70,20/200; N: 6pt,26pt; 3/10 HRR plates OU
VF:
Ext: w/q
P: w/o APD
EOM: full
SLE: wnl
Ta: 19/16
Fundus:

NFM – PMH
4 laporotomies w/ small bowel resection 1973-7
Rx: Parenteral multivitamins + hydroxycobalamin

NFM – F/U
12/92 (1mo): “Better”
Va: 20/25 OU
N: 3pt,4pt
VF:
Ext: w/q
P: w/o APD
SLE: wnl
Fundus:
NFM - F/U
7/93 (8mo): “Marked improvement”
Va: 20/20 OU
N: 3pt OU
VF:
Ext: w/q
P: w/o APD
SLE: wnl
Fundus: PM dropout

RSJ 33yo male
1/95: Sudden loss Va OD
Referred for malingering
Va NLP OU
Ext: 2+ dermatochalasis
P: min rxn w/o APD
EOM: XT
SLE: wnl
Fundus: “nl disc”

RSJ - POH
Gradual dec Va OS X 3 1/2 year
Prison: rx glasses
11/94: NLP OS

RSJ - W/U
MRI:

RSJ - Rx
Transphenoidal decompression
3/95: Can see some light
Va LP, NLP
VF: no proj OD
Ext: w/q
P: LAPD
EOM: XT
SLE: wnl
Fundus: unA’d

WMB 72yo male
2/96: “Episodes of blurry vision”
Va 20/70, 20/40
VF: “constriction”
Ext: 1+ dermatochalasis
P: w/o APD
EOM: full
SLE: 2+NS
Ta: 16 OU
Fundus:
WMB - F/U
6/96: “Glasses didn’t help”
Va sc: 20/400, 20/60
Va cc: 20/50, 20/30
VF:
Ext: w/q
P: w/o APD
SLE: 2+NS
Ta: 14/15
Fundus: unΔ’d

Conclusions
• Recognize disparity between complaints and findings
• Define complaints in as much detail as possible
• Select and employ appropriate tests
• Document inconsistencies
• Find the “peg”
• Avoid confrontation
• Follow up essential