5.13.1. Nonorganic Ophthalmic Disorders (I): Examination Techniques (I)

afferent visual pathway

bilateral no light perception

- nonvisual tasks
  - patient's inability to perform nonvisual tasks
    - failure to sign a paper
    - failure to adequately perform a finger-to-nose test
    - in the absence of systemic neurologic diseases
- pupillary reaction
  - a normal pupillary reaction suggests that the anterior visual pathways are intact
    - does not prove the loss is nonorganic !
    - r/o involvement of postgeniculate pathways (optic radiations or occipital cortex)
  - aversive light reaction establishes at least some level of afferent input
- optokinetic nystagmus (OKN) drum
  - slowly rotate an OKN drum in front of patient
    - if eyes move with the drum, a nonorganic component has been established
    - malingerers can purposely minimize/prevent the response by looking around or focusing past the drum
- mirror test
  - large mirror is slowly rotated side to side in front of the patient
  - examiner notes eye movement with the mirror

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- electrophysiologic testing
  - visual evoked potential (VEP)
    - an abnormal pattern-reversal VEP response in a patient with normal examination findings should not, by itself, lead to diagnosis of organic defect
    - patients can willfully suppress a visual evoked response
      - inattention
      - lack of concentration
      - meditation
    - both false-positive and false-negative results are possible
    - normal VEP results + normal clinical examination findings support the diagnosis of nonorganic disorder
    - references

monocular no light perception

- all of the tests described for bilateral no light perception may be performed unilaterally
- relative afferent pupillary defect
  - absence of RAPD substantially increases, but does not confirm, suspicion when eye examination findings are normal
- base-out prism test
  - 4–6 Δ prism is placed base-out in front of 1 eye with both eyes open
  - inward shift of the "bad" eye indicates vision
- vertical prism dissociation test
  - 4 Δ prism is placed base-down in front of the "good" eye
  - if the subject has vision in both eyes, 2 images should be seen, one above the other

Figure 13-2 (© 2020 American Academy of Ophthalmology)

  - references
- fogging test
  - plus and minus spheres (4–6 D) in front of the "bad" eye
  - plus and minus cylinders (4–6 D) with their axes aligned in front of the other eye
  - patient is asked to read the chart while the front lenses are rotated
  - on the cylinder side (good eye), vision will become severely blurred as the axes are rotated
- confusion tests
  - red-green test
    - duochrome (Worth 4-dot) glasses
    - red lens over the "bad" eye
    - red-green filter is then placed over the Snellen chart
    - if the red letters are read, the patient is reading with the "nonseeing" eye
    - green lens will prevent the good eye from seeing the red background letters
  - polarized lens test
    - patient wears polarized lenses while reading a specially projected chart with corresponding polarized filters
    - letters or lines may be selected that indicate the patient is reading with the "bad" eye

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monocular reduced vision

- more challenging
  - clinician must convincingly demonstrate better visual acuity than initially claimed
  - simply demonstrating that the patient can read at all is not sufficient
- many of the tests for binocular or monocular no light perception can be applied to monocular (and binocular) reduced vision
- confusion tests
- stereopsis
  - presence of stereopsis indicates at least some vision in both eyes
  - See Table 13-1

binocular reduced vision

- most difficult nonorganic vision loss to address
- bottom-up acuity
  - begins with visual acuity determination on the smallest line (20/10)
  - examiner announces use of a "larger line" and then goes to the 20/15 line and several different 20/20 lines
  - examiner continually expresses disbelief that such "large" letters cannot be identified
  - by the time "very large letters" (ie, 20/50) are reached, the patient often can read optotypes much smaller than initially identified
- variation of the bottom-up visual acuity technique
  - to demonstrate an improvement in visual acuity
  - small (¼ D) plus and minus lenses are alternately added and subtracted while the patient is asked how many letters are visible and what shape they have
- "visual aids"
  - have the patient wear trial frames with 4 lenses equaling the correct prescription
  - suggest that they are special magnifying lenses
- potential acuity meter
  - presented as a means of "bypassing the visual block"
- use of alternative charts
  - patients may be persuaded to see substantially better by a switch in optotypes
- specialty charts
  - top line in 50 optotype instead of 400 optotype
  - alternatively, the standard chart may be moved farther away

General

- somatic manifestations of psychogenic origin may account for ≥10% of patient visits to family physicians
- terminology
  - functional
  - nonphysiologic
  - nonorganic
- Malingering
  - willful feigning or exaggeration of symptoms
  - Münchausen syndrome
    - intentional induction of physical damage
    - secondary psychological gain
  - malingering cannot always be clearly differentiated from hysteria
  - both are tested using the same techniques to determine the validity of the symptoms
- Hysteria
  - subconscious expression of nonorganic signs or symptoms
  - "la belle indifference"
    - patients are often unconcerned about their incapacitating symptoms
- Nonorganic overlay
  - patients with actual organic disease may also exhibit superimposed nonorganic behavior
- Approach
  - "everything counts" is the guiding principle
    - in a tertiary neuro-ophthalmic practice, patients who wore sunglasses to their appointments were more likely to have nonorganic vision loss
  - history taking
    - show empathy
    - listen actively
    - carefully record the patient's story
    - look for potential secondary gain factors during the history
    - patient has "positive" review of ophthalmic symptoms
      - patient is suggestible during the history-taking process
  - observe patient's general behavior and ocular capabilities continuously
    - can he/she find and shake the physician's silently outstretched hand?
    - Can the patient successfully ambulate into the room/chair?
  - high index of suspicion when the pattern of vision loss does not fit the common sequence of known diseases
  - mismatch between subjective complaints and objective findings
    - suspicion increases if the ophthalmic examination does not uncover relevant objective abnormalities
    - diagnosis confirmed when the patient does something that should not be possible based on the stated symptoms
  - patients may be more focused on impending litigation or disability determination than on the diagnosis or treatment
  - misdirection
    - some examination techniques rely on the fact that the patient believes a particular eye or function is being tested but in reality the examiner is trying to confirm a nonorganic disorder
    - other tests may yield results that suggest the patient is not cooperating

pupils and accommodation

- changes in pupil size
  - fixed dilated pupil
    - etiology
      - pharmacologic blockade
        - inadvertent or purposeful application of mydriatic/cycloplegic eyedrops
        - touching eyes with fingers contaminated through use of a scopolamine patch
        - manipulating certain plants that contain parasympatholytic drugs
      - oculomotor nerve palsy
      - Adie tonic pupil
    - pilocarpine test
      - pupil remains dilated
        - pharmacologic blockade
      - pupil constricts
        - third nerve palsy
        - Adie pupil
  - widely dilated pupils may be observed in young patients
    - even with diluted pilocarpine
  - few patients are able to voluntarily dilate both pupils
  - intermittent miosis occurs in spasm of the near reflex
- changes in accommodation
  - weakness or paralysis of accommodation
    - inability to read clearly even in the presence of an appropriate plus lens
      - failure of patient with normal distance vision to read despite appropriate near vision correction raises the possibility of a nonorganic condition
    - primarily in children and young adults
  - spasm of accommodation
    - observed with the syndrome of spasm of the near reflex
    - can produce 8–10 D of myopia
      - report blurred distance vision
      - refraction without and with cycloplegia establishes the presence of induced myopia

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