Ocular Motility Part 1: Evaluation & Cranial Nerve Palsies

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Objectives

1. Describe pertinent portions of the history and exam.

2. Describe approach to patient with ocular motor cranial nerve palsy.
The most important question for the patient with double vision is?

1. Is there pain?
2. When did it start?
3. Does it go away when you cover each eye?
4. Is it present at distance and near?
Diplopia

3 Essential Questions

1. Monocular or binocular?

2. Horizontal or not?

3. Comitant or not?
Diplopia

Monocular

uncorrected astigmatism
corneal scar
cataract
subluxed lens / implant
epiretinal membrane
palinopsia
Diplopia

Monocular - Assessment

- pinhole
- refraction
- corneal topography
- slit lamp exam
- funduscopy
Monocular Diplopia

Dr. Golnik
Diplopia

3 Essential Questions

1. Monocular or binocular?

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Diplopia

3 Essential Questions

1. Monocular or binocular?

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Diplopia

Fellow Travelers

- levator
- pupils
- orbital signs
- head position
Ocular Motility

Ductions - excursion of one eye

Versions - excursions of both eyes

Comitant - same degree of misalignment in all gazes.
Diplopia

esotropia (ET) - eyes turn in
exotropia (XT) - eyes turn out
hypertropia (HT) - vertically misaligned
Diplopia

Pattern of ocular alignment is essential to the diagnosis.
Assessment of Misalignment

Objective Methods

• cover - uncover (tropia) + prism

• cross - cover (phoria) + prism

• Hirschberg (I don’t want to hear it!)
Esotropia
Diplopia

Binocular

fusional
muscle
myo-neural jct
nerve
inter/supra nuclear
Diplopia

Binocular - Fusional

decompensated phoria (comitant)

divergence insufficiency

convergence insufficiency
Diplopia

33-yo-wm c/o diplopia

binocular, horizontal, same in all directions
worse when tired

exam: full d/v, 14 Prism diopter XT in primary, comitant

DX: broken down congenital phoria
Diplopia

- 69-yo-woman c/o diplopia
- binocular, horizontal, only in the distance
- exam: full d/v, 6 Prism diopter ET distance, ortho near, comitant

Diagnosis?
1. Convergence Insufficiency
2. Divergence Insufficiency
3. 6th nerve palsy
4. Myasthenia Gravis
Oculomotor Nerve (IIIrd)

- parasympathetics - cil body/iris sphincter
- levator palpebre
- inf, sup, med recti, inf oblique
posterior communicating artery
aneurysm compresses pupillary fibres
III nerve

vascular disease of vasa vasorum leading to infarct of central nerve fibres

pupillary dilation

pupil normal
This patient has

1. Myasthenia Gravis
2. Graves Disease
3. L 3\textsuperscript{rd} nerve palsy
4. L 4\textsuperscript{th} n palsy
A L $4^{th}$ nucleus lesion causes

1. Left hypertropia
2. Right hypertropia
3. Incyclotorsion
4. None of the above
Bigger RHT
straight
straight
The patient on the preceding slide most likely has:

1. Microvascular (DM, HTN) 6th nerve palsy
2. Compressive 6th nerve palsy
3. Myasthenia Gravis
4. Giant Cell Arteritis
Check other adjacent CNs
Also a L RAPD is present.
Orbital apex syndrome: CN II & CN III, IV, V, VI
Ocular Motility Part 1: Summary

1. Differentiate monocular from binocular diplopia immediately!

2. Determine the pattern of misalignment.

3. Check fellow travelers (lids, pupils).

4. Not all cranial nerve palsies are complete.
Thank-you for your attention.