OPTICAL CORRECTION OF NYSTAGMUS

SOBI PANDEY
NAVDRISHTI EYE CARE CENTRE
KANPUR
INDIA

SIGNS & SYMPTOMS

A. Decreased vision
   + Central VA
   + Gaze angle acuity
   + Near acuity
B. Anomalous Head Posture
C. Oscillopsia
D. Photophobia
E. Hypoaccommodation

REFRACTION OF PATIENTS WITH NYSTAGMUS

A. Visual acuity measure
   - Unocular
   - Binocular
   - with AHP

B. Refraction
   + Undilated
   + With dilatation
      × Atropine in children
      × Tropicamide in adults

REFRACTION CONT...

A. Distance retinoscopy
   + Binocular
   + Monocular by fogging
B. Do subjective acceptance from your retinoscopic findings and record Near and distance V.A. with A.H.P.
C. If the patient is orthophoric then with best correction in place add 7 diopters of prism base out in front of each eye with -1.00 D sphere and see for convergence dampening Reassess V.A for near and distance
D. If the patient has strabismus then neutralize the deviation with best correction in place and again assess the V.A.
E. Do a cycloplegic refraction and see for the difference in the two refraction
   a. Hypermetropia is usually not discovered without dilatation
F. In pre-verbal children give the full cycloplegic correction in both eye
G. In those who can read charts give the correction which the patient accepts
   - Review after 2 – 3 months and see if you can increase the latent refractive error subjectively.
OPTICAL TREATMENT

A. Version prisms

**Principle** – Version prisms move objects in the visual field to the null position.

**Useful in** –
- Small angle AHP with broad null
- Residual AHP after surgery post operatively
- Guide for surgical treatment
  
  Prism apex in the direction of the null in each eye

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**Vision BE 6/9 with AHP**

**INS without AHP**

**INS with AHP**

**Post operative after 4 muscle surgery (Residual AHP) After Version Prisms**
B. VERGENCE PRISMS

**Principle** - if the patient with nystagmus has fusional potentials and ‘damps’ with convergence the V.A. will improve with base out prisms in front of each eye.

To begin with over the best correction add 7.00 P.D. Base out prisms along with -0.50 to -100 D spheres to compensate for the vergence induced accommodation.

CONTACT LENSES

- Improve the VA significantly and may reduce the intensity of nystagmus.
- It has 4 advantages:
  - Better optical quality
  - Dampening of nystagmus and improvement in foveation
  - Moves with the eyes hence helpful in eccentric gaze null
  - Tinted lenses helps in photophobia.
D. Intraocular lenses and prosthetic iris devices

- Patients with iris deficiency secondary to albinism and aniridia → prosthetic iris devices and IOL
- Aphakia + Nystagmus → IOL

E. Refractive Surgery

**LIMITATION TO ITS USAGE**

a. Patient should be stationary and viewing monocularly as it inhibits eye movements
b. Very high power components (contact lenses of -58.00 Diopters and spectacle lens of +32.00 Diopters).
c. Limited field of view

**FUTURE**

Spectacle mounted electronic device that can differentiate between normal eye movements and nystagmus and rotate prisms in synchrony with the patient's nystagmus

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