Romanian Journal of Ophthalmology, Volume 59, Issue 3, July-September 2015. pp:137-140

REVIEW

ANOMALOUS HEAD POSTURES IN STRABISMUS AND NYSTAGMUS - DIAGNOSIS AND MANAGEMENT -

Luminita Teodorescu
OFTALMIX Ophthalmology Clinic Bucharest, Romania:

Correspondence to: Luminita Teodorescu
11 B Turturelelor, Bl A, ap 3, District 3, Cod 030881,
Phoenicia Business Center, Bucharest, Romania
Mobile phone:+40 722 377 117, Email: luminita.teodorescu@oftalmix.ro

Accepted: July 15, 2015

Abstract

Abnormal head positions are adopted in order to improve visual acuity, to avoid diplopia or to obtain a more comfortable binocular vision**.** The head can be **turned** or **tilted** toward right or left, with the **chin rotated up or downwards** or combination of these positions.

The ophthalmologic examination including the assessment of versions leads to the diagnosis.

When versions are free, the cause may be congenital nystagmus or strabismus with large angle.

When versions are limited we suspect paralytic or restrictive strabismus.

The **head tilted** to one shoulder suggests cyclotropia (IV Nerve Palsy) or congenital nystagmus.

We present few of the above cases.

An adequate surgical treatment can improve or correct the ocular deviation, diplopia and the abnormal head posture.

Conclusions: The abnormal head posture must be assessed and treated early in order to correct the ocular position and head posture. All patient presenting abnormal head position HAD TO BE investigated by an ophthalmologist.

Key words: Anomalous head posture, head turn, head tilt, chin-up, chin-down head posture

Introduction

There is nearly always a significant reason for an abnormal or compensatory head position and the patient often may adopt it unconsciously.

The cause may be an **ocular**, muscular, skeletal or neurological disease. Very rare it may be a habit, without any reason to adopt it.

The most common cause is an ocular disease. The posture is adopted in order to:

1. Improve visual acuity or obtain a more comfortable binocular vision, like in: unilateral amblyopia, oblique astigmatism, nystagmus.

2. To avoid diplopia – in patients where fusion can be obtained, the deviation and diplopia disappear in the compensatory position. [**1**].

If the cause is an ocular disease, a simple test can be done: occluding one eye prevents

diplopia and the compensatory head posture will disappear.

3. To increase the separation of the images when there is no fusion like in a large angle strabismus.

The ophthalmologic examination must emphasize the assessment of ductions and versions:

When **versions are free**, the cause may be a congenital nystagmus, infantile esotropia, dissociated vertical deviation, large deviation with amblyopia.

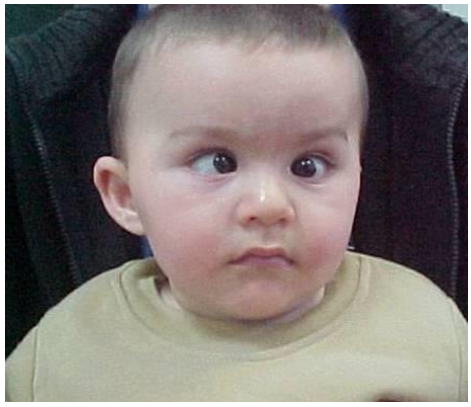

Fig. 1 Congenital esotropia with manifest nystagmus, left eye fixing in adduction, head turned towards left, the direction of the left fixing eye – pre-op.

Fig. 2 Post-operative Fig. after bi-lateral medial rectus recession

In infantile nystagmus, the **null zone** is the position of gaze in which the nystagmus dampened and the visual acuity (VA) is better.

When the null zone is not in primary position, the patient adopts a face turn, a head tilt, or a chin up or down position, especially during tasks when better vision for distance is required: TV, testing VA, blackboard. VA at near is often better because convergence associated with near vision block the nystagmus and no head turn is needed. [**2**].

Surgery is aimed to improve the head position, i.e. to shift the null zone toward the primary position. The rule is that eyes should always be shifted in the direction of the head posture**.**

The most used technique is "Large Anderson" operation: only 2 recessions of the yoke muscles: 7 mm Medial Rectus (MR) recession of the adducted eye 10 mm Lateral Rectus (LR) recession of the abducted eye. For larger face turn the surgery dose may be increased. [**3**].

Fig. 3 Infantile nystagmus with left face turn

Fig. 4 Post-operative after left Medial Rectus recession 7 mm, right lateral rectus recession 10 mm

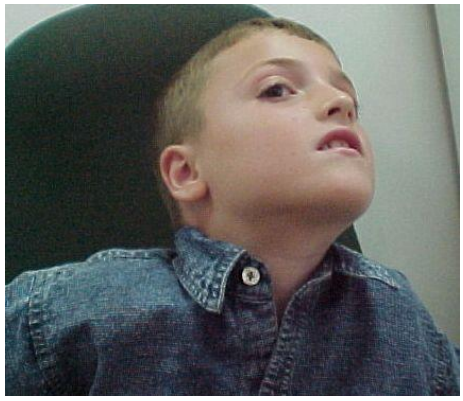

Fig. 5 Congenital nystagmus with combined vertical and horizontal null zone, chin-up and left face turn position

Fig. 6 Post-operative after left medial rectus recession 8.5 mm, right lateral rectus recession 12 mm, bi-inferior rectus recession 7 mm, bi-superior rectus resection 6 mm.

When **versions are limited** we suspect, according to the clinical features: III or VI Nerve Palsy, Duane syndrome, general fibrosis syndrome, thyroid ophthalmopathy, orbital fractures.

The rule is: **"The head moves where the eye cannot"**, in order to avoid diplopia.

Fig. 7 (up or in the middle), **8** (left), **9** (right): Right VI nerve palsy after trauma, no abduction in the right eye

Fig. 10(up), **11**(left), **12**(right): After right medial rectus recession 6,5 mm and half-tendon transfer of the superior and inferior to the lateral rectus insertion.

Fig. 13 (up), **14** (left), **15**(right): Right III Nerve Palsy, superior branch, exotropia and hypotropia, left head turn, no adduction

Fig. 16 (up), **17** (left), **18** (right) Post-op, Right lateral rectus recession 14 mm, right medial rectus resection 9 mm with up-ward insertion

The **head tilted** to one shoulder suggests cyclotropia (IV Nerve Palsy), congenital nystagmus, Brown syndrome or non-ocular causes.

The patient tilts the head to compensate the tilted image.

Fig. 19 Left Congenital IV nerve Palsy; Right head tilted, facial asymmetry

Fig. 20 Left hypertropia in primary position

Fig. 21 Bielschowsky head tilted test positive: hypertropia increases in tilting the head towards to side of the palsy

Fig. 22 Post-op, head straight, ortophoria, after left inferior oblique myectomy and left superior rectus recession

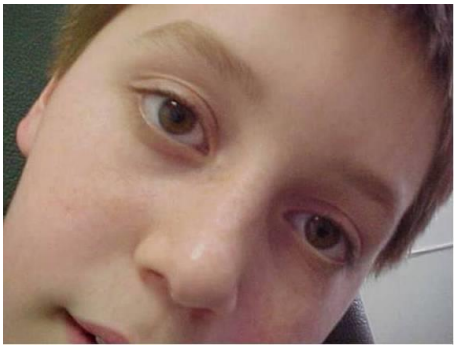

Fig. 23 Normal head tilted test

Conclusions

- The abnormal head posture must be assessed and treated early in order to correct the ocular position and the head posture.

- An adequate surgical treatment improves or corrects the strabic deviation, diplopia and the abnormal head posture.

References

1. Noorden G. K, Helveston E. M, Strabismus. A decision making approach, St. Louis: Mosby;1996, 52-60
2. Helveston E. M. "Strabismus minute" Orbis Cybersight, Anomalous Head Posture and Strabismus, 1999, New York, Lecture 8 of 48
3. Helveston E. M. "Strabismus minute" Orbis Cybersight, Surgery Options for Nystagmus, 1999, New York, Lecture 21 of 48