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

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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.

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].

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**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

**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
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.
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.

**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 strabismic deviation, diplopia and the abnormal head posture.

**References**

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