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Case Report: How May Ocular Alignment Guide the Topography of the Lesion

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Authors' contributions

This work was carried out in collaboration between all authors. All authors read and approved the final manuscript.

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Case Report

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ABSTRACT

A 58 years old pale patient of hypertension, with a history of left thalamic hemorrhagic stroke (2010), had a sudden onset and progressive evolution that began a few hours ago, characterized by right palpebral ptosis and diplopia. The condition was followed by left faciobrachiocrural paresis, difficulty to maintain the sitting or standing and sensory impairment. The patient was found with conditions, such as, Eye-opening upon request, Disoriented in time, Lack of verbal initiative, Central left facial palsy, Left brachiocrural paresis (4/5), Impossibility to maintain a seating or standing position and Bilateral Babinski. The symptoms can only be explained by a bilateral thalamic lesion, although unilateral lesions can occasionally cause similar symptoms.

Keywords: Ocular alignment; HINTS; thalamic lesion; gait disturbance.

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1. INTRODUCTION

Recently the clinicians pay attention to the ocular movements as CNS lesion's biomarkers because the high localization value of them. Perhaps HINTS [1] is the best example. Generally speaking all the oculomotor signs are dynamic. More recent papers add the use of static ocular signs not only for the ocular system but for also for the posture [2]. In this case we highlight how the static signs: ocular alignment and gait can help to accurately localize the lesion.

2. CLINICAL CASE

Male, 58 years old, hypertension, history of left thalamic hemorrhagic stroke (2010), consultation

due to a condition of sudden onset and progressive evolution that began a few hours ago, characterized by right palpebral ptosis and diplopia, followed by left faciobrachiocrural paresis, difficulty to maintain the sitting or standing and sensory impairment.

In the physical examination we found:

- Eye-opening upon request. Disoriented in time.
- Lack of verbal initiative.
- Central left facial palsy.
- Left brachiocrural paresis (4/5).
- Impossibility to maintain a seating or standing position.
- Bilateral Babinski

3. PHYSICAL EYE EXAMINATION



Image A



Image B

Image A. 1 - head tilt. Bilateral ptosis - right eye predominance. Image B. 2 - Vertical ocular deviation (SKEW) HYPOTROPIA LE corrected with Cover test (+); 3 - Eye torsion: difficult to clinically detect it, possible with fundoscopic images. 1 + 2 + 3 = Ocular tilt reaction (OTR)



Image C: RE



Image D: LE

Image C. RE pupil: mydriatic, non-reactive. Image D. LE: miotic, hyperreactive

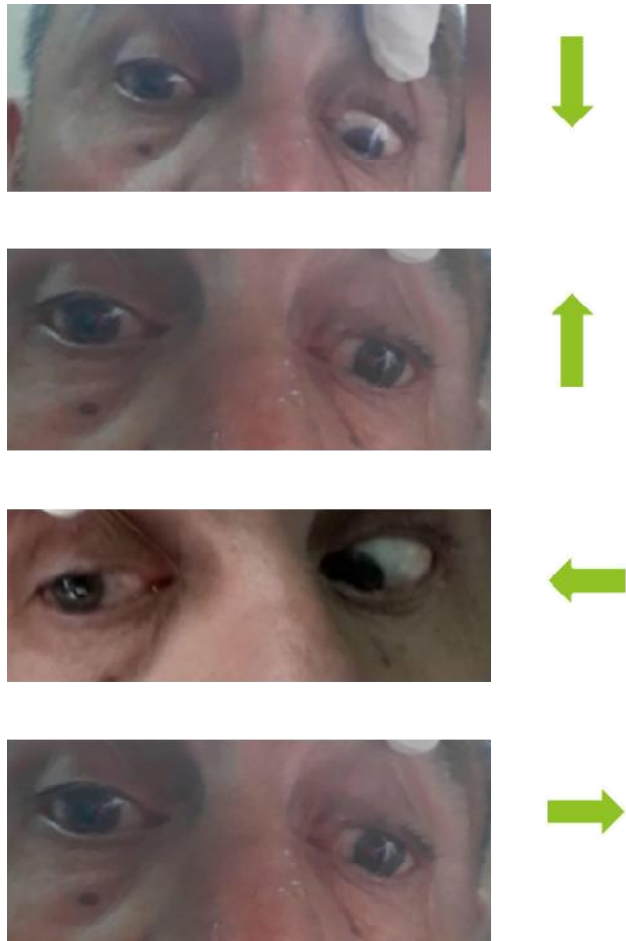


Image E. Abducens nerve: RE: +++ supraduction, infraduction and adduction limitation; + adduction. LE: supraducción y abducción limitation. RE limited convergence

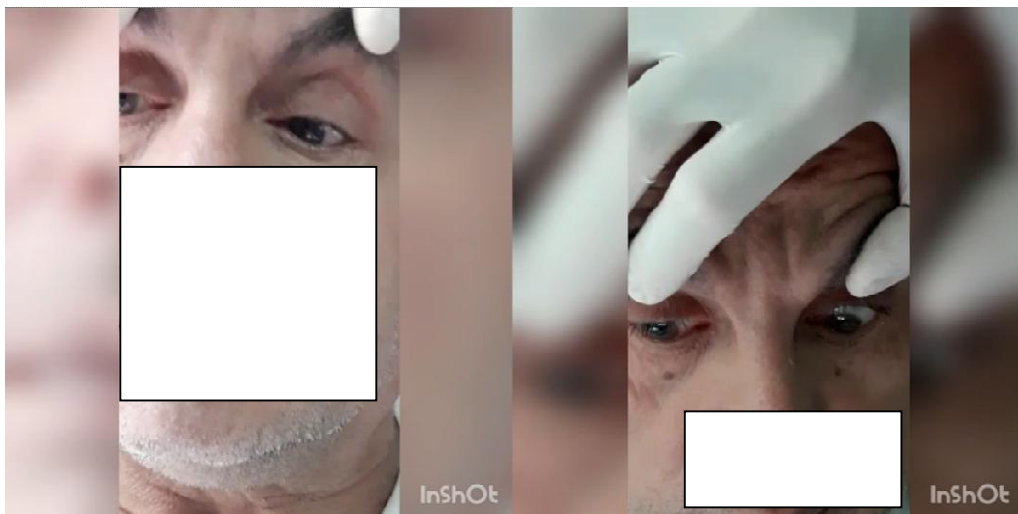


Image F. ROC negative horizontal (-) to the right and preserved to the left. ROC limited vertical in both eyes

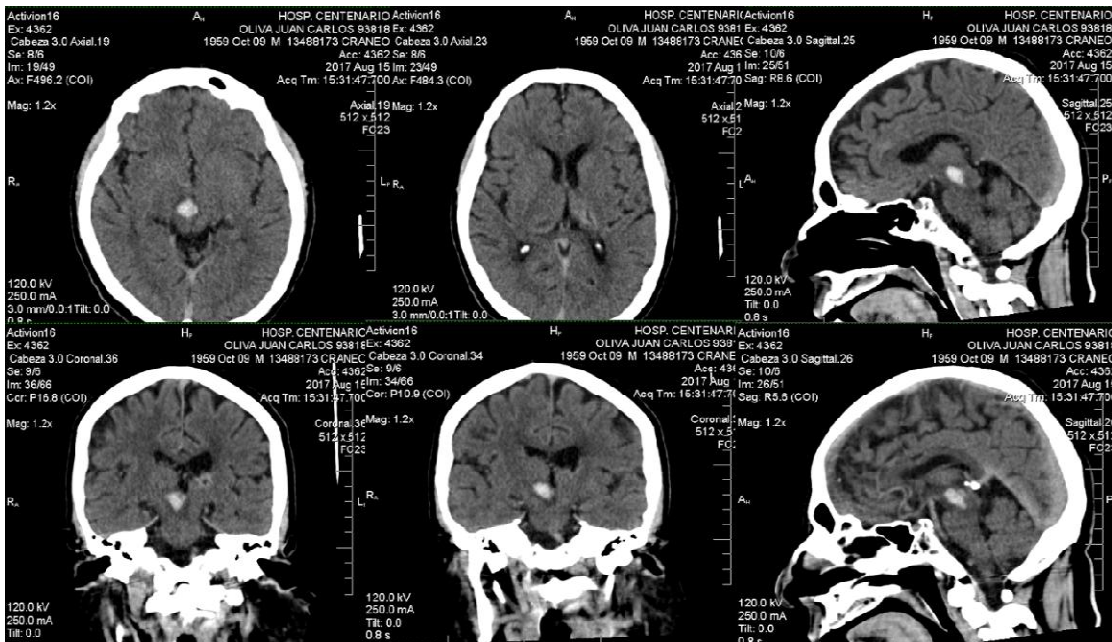


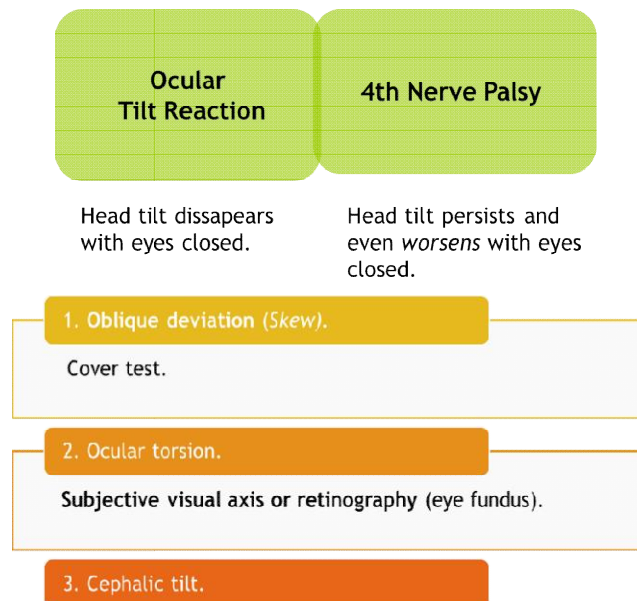
Image G. Collection of blood in right mesencephalon of subacute evolution - 13 mm. Secular lesion in left thalamus

4. DISCUSSION

• OCULOMOTOR DISORDERS:

Possible causes that may account for bilateral 6th in our patient:

- Intracranial hipertensión: ruled out, non-compatible clinical or imaging findings.
- 6th nerve pseudoparesis: convergence spasm – hypoesotropia; Contralateral mesodiencephalic junction lesion [2,3].
- Bilateral pontine (nucleous) lesion: Imaging findings are not compatible.



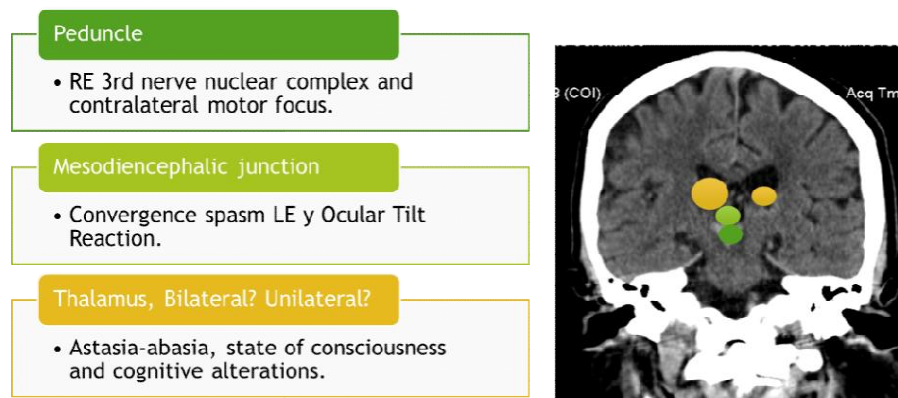
Ocular Tilt Reaction (OTR): The main differential diagnosis of ocular tilt reaction is the 4th nerve palsy [4,5,6,7]. How can they be differentiated during a physical examination? Our patient did not correct it with eyes closed: *4th nerve palsy: tilting disappears with eyes closed; OTR does not correct it and worsens it* [4,5,6,7].

The OTR involves a lesion of the vestibular-ocular pathway; it has a poor localizing value, but it forces to rule out central injury. If it is of mesencephalic origin, lesion is contralateral to OTR syndrome. If it is pontine, bulbar or peripheral, lesion is homolateral to OTR syndrome [4,5,6,7].

- GAIT DISTURBANCE

Sudden impairment to maintain a seating or standing position. In this patient, due to contralateral dorsal thalamic lesion. He has had minimum weakness (weakness is not proportional to the degree of impairment to maintain a seating or standing position). Its duration is transient (days – weeks) [8,9,10].

- TOPOGRAPHIC DIAGNOSIS



5. CONCLUSION

The presence of vertical misalignment and the “Peering at the tip of the nose” sign properly positioned the lesion, the severe gait limitation can only be explained by a bilateral thalamic lesion, although unilateral lesions can occasionally cause similar symptoms.

CONSENT

As per international standard or university standard, patient’s consent has been collected and preserved by the authors.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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