

INTRODUCTION

Probable Vestibular Migraine of Childhood (PVM) was defined in the consensus report of the Classification Committee of Vestibular Disorders of the Barany and the International Headache Society in 2021. The children having more than three episodes with vestibular symptoms with the history of migraine are classified as PVM without the need for association with migraine features in at least half of the episodes. In our clinical practice, most children having the diagnosis of migraine with vestibular symptoms fit the PVM definition.

Video head impulse test (vHIT) is a new test that assesses vestibulo-ocular reflex gains of all 6 semicircular canals during head impulse test (HIT) maneuvers. vHIT is a sensitive and efficient relatively simple vestibular test. It detects great vestibular impairment in adults and pediatric population without stimulating dizziness and vomiting.

OBJECTIVE

The objectives of the present study are to evaluate the vestibular impairment in children with PVM by vHIT and to compare their results with children having migraine

MATERIALS&METHODS

The study included two groups of subjects, age between 5 and 16. The migraine group consisted of 17 patients who had diagnosis of migraine according to the ICHD-3, and the PVM group consisted of 24 patients who had diagnosis of Barany and International Headache Society Criteria. Children who had a history of otologic and vestibular disorders, an additional systemic, neurologic or vestibular disease were excluded. The clinical HIT was performed first to explain the vHIT test procedure to the children and their parents and calibration were accomplished. Maneuvers were performed on all semicircular canal planes for each patient. Horizontal canal testing was performed in the horizontal plane and vertical canal testing was applied during the head rotated 30° towards the right or left side, and the head impulse was applied in the plane of canals.

RESULTS

None of the patients had corrective saccades during head movements. None of the patients had a vHIT gain value less than 0.7, indicating that all the vestibulo-ocular reflex functions were within normal range (0.7-1). The comparison of vHIT gains between two groups revealed no significant difference except a decrease in the anterior canal plane on the left side in the PVM patients ($p=0.031$). No relation was observed between the localization (unilateral/bilateral) of headache and the presence of vestibular symptoms.

CONCLUSION

The vHIT values detected both in migraine and PVM patients are within normal range. To the best of our knowledge, there is only one study (Rodríguez-Villalb R, et al) in the English literature analyzing the vHIT findings in pediatric patients with vestibular migraine (VM). In this study suggested vestibular hyper function could be a component of VM. Our results could not reveal the vestibular hypo or hyper function. The differences in the left anterior canal is difficult to interpret as a sign of vestibular impairment as all the vHIT values are within normal range. Studies on vestibular impairment in adult migraine patients revealed a wide range of results from normal to hypo-hyperfunction.

The vHIT test is well tolerated and easy-to-use vestibular test in the pediatric population. It can be used in the diagnosis of vestibular dysfunction as well as it can shed some light on the pathophysiology of vestibular migraine.

REFERENCES

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- Rodríguez-Villalba R, Caballero-Borrego M, Villarraga V, Rivero de Jesús V, Claveria MA, Haag O. Vestibulo-ocular reflex assessed with Video Head Impulse Test in children with Vestibular Migraine: Our experience. *Int J Pediatr Otorhinolaryngol.* 2020 Oct;137:110161.

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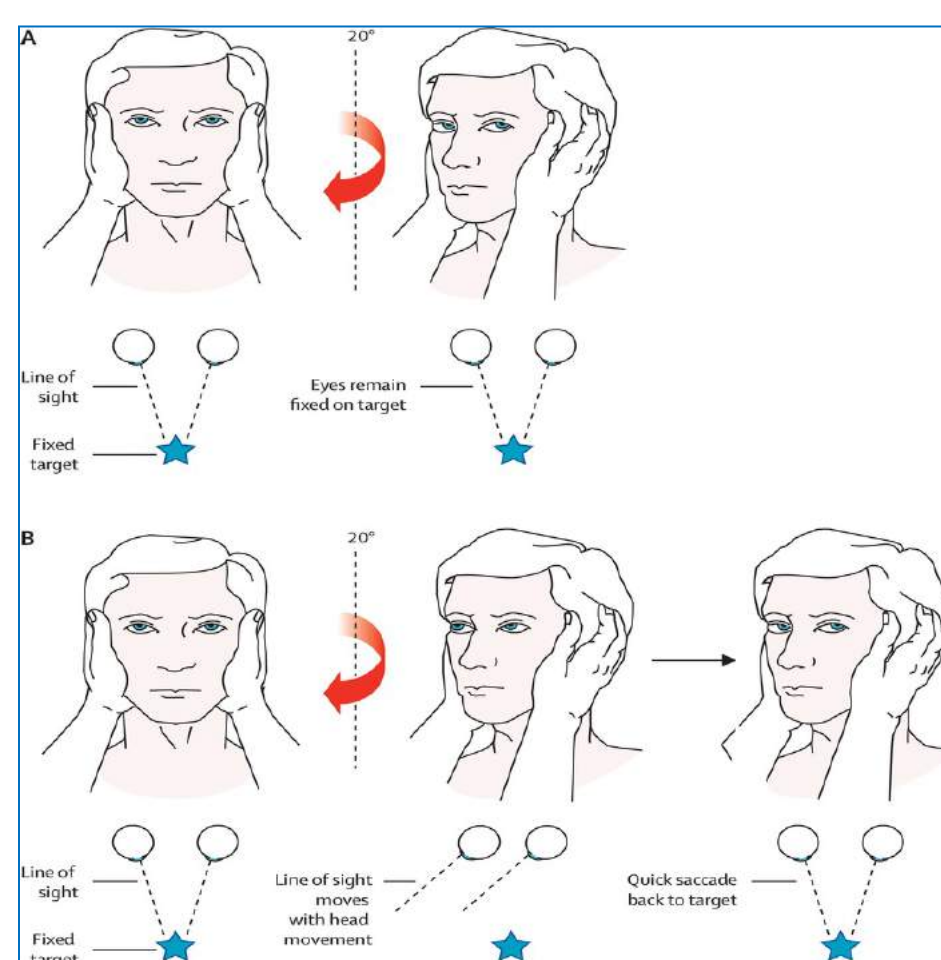


Figure 1: Head impulse test

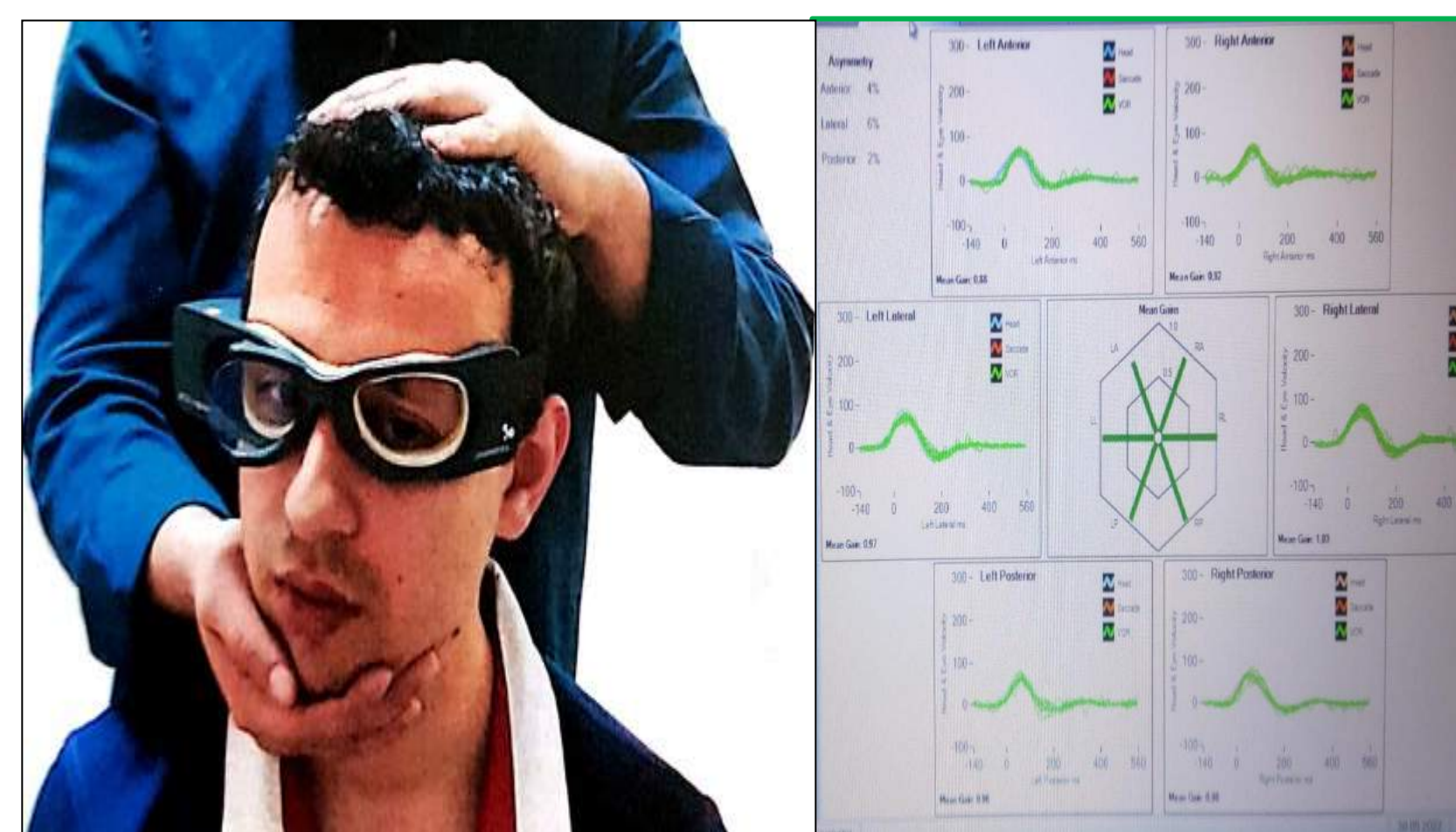


Figure 2: vHIT test and chart of a PVM patient showing vHIT gains in normal range (with the patient's consent)