

Unilateral Positional Convergence Spasm During Supine Roll Test - Not to be Confused with Benign Paroxysmal Positional Vertigo

Sir,

Vertigo of vestibular origin accounts for a quarter of the causes of dizziness.^[1] Vertigo can be spontaneous or triggered by positional changes. Positional vertigo can be caused by central or peripheral causes. The most common cause of positional vertigo is benign paroxysmal positional vertigo (BPPV),^[2] which is peripheral in origin. The central causes like vestibular migraine, stroke, multiple sclerosis are atypical causes of positional vertigo, and they can mimic like BPPV.^[3] The purpose of this study is to report a case of convergence spasm presenting with positional vertigo lasting for less than 1 minute and thereby mimicking like BPPV.

CASE HISTORY

A 21-year-old male presented to the Neurology clinic with a chief complaint of sudden onset of episodes of dizziness from 4 hours. Each attack of dizziness was lasting for less than a minute. The dizziness was vertiginous and triggered by concentrating on any near object or turning the neck to the left side. His general examination and the neurologic examination was normal. His neuro-otologic and ocular motor examinations were performed. The patient underwent a supine head roll test after the initial negative Dix-Hallpike maneuver. Supine head roll test or Pagnini-McClure maneuver to the left side triggered the symptoms and transient episodes of convergence spasm with miosis lasting for less than a minute [Video 1]. Supine roll test on the right side was negative for symptoms and eye signs. Lying down in bed and sitting up from the supine position also elicited the convergence spasm. Interictal ocular motor testing was normal. The Doll's eye maneuver showed a full range of movements. He reported symptoms of anxiety and restlessness. He did not undergo any specialized testing [video-oculography, caloric testing, magnetic resonance imaging (MRI) brain]. He was reassured and started on Promethazine 10 mg once daily for 5 days. He felt better within 24 hours, and there was complete recovery

of symptoms with no recurrence of the episode on 9 months of follow-up.

DISCUSSION

Frontal vision is crucial for focusing the object of interest on the fovea.^[4] The vergence eye movements move the eyes in opposite directions and help to keep the object of interest on homologous points of the retina. Near objects activate the convergence, and distant objects enable the divergence. Convergence is associated with the accommodation of lens and pupillary changes. It is called near triad.

The triad of sustained convergence, miosis, accommodation characterizes convergence spasm or spasm of the near reflex.^[5] Convergence spasm is one of the common disorders of binocular function apart from convergence insufficiency, divergence insufficiency, and divergence excess. Convergence spasm can be due to organic lesions or could be psychogenic in origin.^[6] The organic form localizes to the diencephalon-mesencephalic junction (Center for accommodation reflex) leading to thalamic esotropia characterized by eyes peeing at the nose.^[6]

The most common cause of convergence spasm is functional in origin. It can be misdiagnosed as bilateral sixth nerve palsy and can lead to inappropriate testing.^[5] Each eye should be examined for a full range of eye movements to exclude sixth nerve palsy. Patients with convergence spasm limit the abduction by imposing a strong voluntary convergence that induces the accommodation and the miosis. Usually, the spasm comes and goes except few patients who can sustain it for a long time. Sustained voluntary convergence can lead to ocular pain. The Doll's eye maneuver elicits a full range of movements. The attacks are usually spontaneous or evoked by lateral, vertical gaze, and convergence. There are very few descriptions of convergence spasm elicited by positional changes.^[7]

Positional testing forms an integral part of the examination in a patient presenting with positionally triggered vertigo.^[8] It includes Dix-Hallpike testing for the posterior canal and supine roll test for lateral canal BPPV. Supine roll test to the left showed jerky, disconjugate arrhythmic movement of eyeballs with either of the eyes converging and going into spasm for less than a minute. The convergence spasm was associated with vertigo. The eye movements were not rhythmic, rapid, and oscillatory to qualify as nystagmus. The convergence spasm was not elicited on rolling the patient to the right.

Supine roll test in lateral canal BPPV shows the horizontal nystagmus which either beats towards the ground (geotropic) or away from the ground (apogeotropic).^[8] Moreover, the nystagmus is elicited on both sides. The slow phase velocity difference of this bilateral nystagmus helps in the localization of the side involved. The fixation removal with Frenzel glasses or video-oculography was not performed in this patient due to the nonavailability of the equipment which might have further characterized the findings.

Lack of nystagmus and bilateral signs in this patient goes against the diagnosis of lateral semicircular canal BPPV. Hence, the patient was diagnosed as a case of 'positional convergence spasm'.

The cause of convergence spasm in the index case was diagnosed to be functional in origin. The patient was reassured, and he had a rapid recovery of symptoms with Promethazine^[7] mentioned in the literature.

The treatment of convergence spasm is directed towards the underlying psychological factors. Some patients might be helped with cycloplegic eye drops and refractive measures.^[7]

CONCLUSIONS

This case highlights that every case of positional dizziness is not due to BPPV and the possibility of this benign and self-limiting disorder of 'positional convergence spasm' should be kept in mind.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient (s) has/have

given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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