Nonorganic visual loss in a child

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Abstract:
Nonorganic visual loss (NOVL) is a rare presentation of visual conversion disorder. It may be suspected when the visual symptoms do not commensurate with the clinical signs on examination and in the absence of any organic etiology. We report a 10-year-old male child presenting with recurrent episodes of sudden-onset ptosis associated with a decrease in vision and diplopia. He was initially diagnosed and treated as juvenile myasthenia gravis elsewhere. However, as extensive investigations were negative, he underwent a psychological evaluation and was found to have a NOVL. There was a spontaneous resolution of symptoms following therapy. NOVL is a rare but important differential diagnosis in children with vision loss in the absence of ocular pathology.

Keywords:
Non-organic visual loss; visual conversion disorder; psychogenic ptosis

Introduction
Nonorganic visual loss (NOVL), according to the Diagnostic and Statistical Manual of Mental Disorders-5, is part of functional neurological symptom disorder and is characterized by disturbance in visual functions without any underlying organic cause. NOVL can affect motor functions as well as the sensory system. Symptoms commonly include blurred vision, visual field defects, and double vision. The report adhered to the ethical principles outlined in the Declaration of Helsinki. Signed consent was obtained from the parents for clinical photography.

Case Report
A 10-year-old male presented to us with a history of sudden-onset drooping of the right upper eyelid for the past 2 months along with decreased vision in both eyes and occasional double vision. He was diagnosed with juvenile myasthenia gravis elsewhere and started on pyridostigmine and steroids. On examination, his best-corrected visual acuity (BCVA) in the right eye was 6/48, N6 and that in the left eye was 6/18, N6 (Snellen) with cycloplegic refraction revealing −0.50 DSph in either eye. The patient had a left face turn with complete right eye closure with a depressed brow position [Figure 1a]. However, on repeat testing, the child could keep his both eyes open [Figure 1b]. Ocular movements were full. The rest of the ocular examinations were within normal limits. Diplopia charting revealed double vision in the primary and left gaze. However, fusion was noted in the Worth Four Dot Test. Magnetic resonance imaging of the brain and orbit was normal. Serum ach receptor antibodies and repetitive nerve stimulation were within the normal range. Humphrey visual fields showed excessive false-positive responses. In view of variable symptoms, normal clinical examination, and investigations, NOVL was suspected and the patient was referred to a child psychologist for assessment. Psychologist evaluation suggested an average functioning intelligence quotient (IQ) of 105 according to the Binet Kamat Intelligence Test. The Child Behavior Checklist (CBCL) revealed a dependent behavior. While talking to the parents, the child denied any recent stress and was compliant during the visit. The child was referred back to the treating pediatric ophthalmologist for further management. No eyelid surgery was done.

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counselor, the child told that he felt unloved by his parents. There were no other psychotic or depressive disorders. Parental interviews revealed that his mother suffered from anxiety and his father was absent from home most of the time. The parents were advised to spend quality time with the child every day and to encourage him to indulge in outdoor activities. The patient was reviewed after 1 week, showing dramatic improvement. He was able to keep both eyes open. BCVA of both eyes was 6/6, N6 with −0.5DS. The patient and the parents were reassured and were advised to review periodically.

**DISCUSSION**

NOVL accounts for 1%–5% of patients in general ophthalmic practice.[2] Child psychiatrists have reported a prevalence of 5.5%.[3] NOVL occurs most commonly during pre-pubertal and early teenage (8–15) years and is seen more often in girls.[4] Environmental triggers which may precipitate NOVL include domestic stress, feelings of parental rejection, unresolved grief, and unhappiness at school.[5]

The common symptoms include vision loss, visual field defects, photophobia, double vision, painful eye movements, and altered color vision.[6] The decrease in visual acuity may vary from mild blurriness to complete blindness. Despite apparent blindness, collisions and injuries do not occur. The visual field defects may affect one or both eyes. Classic visual defects suggestive of NOVL are tunnel (rather than funnel) configuration on confrontation and cloverleaf pattern on automated visual fields.[7] In children, NOVL is frequently bilateral and symmetric.[8] The diagnosis of a possible NOVL should be considered when the signs and symptoms do not correlate with clinical findings or investigations. A high index of suspicion is important because early diagnosis of NOVL minimizes unnecessary investigations and interventions.[7]

However, it is important to rule out any organic pathology as 16%–53% of patients of NOVL may have abnormal neuro-ophthalmologic findings.[8] The Binet–Kamat Test of Intelligence assesses the child’s skills in six areas: memory, language, thinking, reasoning, visuomotor coordination, and social intelligence. An IQ <70 indicates a subnormal level of intelligence.[9] The CBCL is a widely used questionnaire to assess emotional, behavioral, and social problems.[10]

Ptosis or blepharospasm is a relatively rare manifestation of NOVL. Ipsilateral eyebrow depression is usually seen in patients with psychogenic ptosis due to the overactivity of orbicularis oculi.[7] Good results have been achieved by behavioral management.[11] Favorable prognostic features are recent onset, younger age, monosymptomatic presentation, and absence of personality disorders. Reassurance alone may improve the clinical features as we experienced with this patient. Recurrences are common when multiple long-standing symptoms, anxiety or clinical depression, personality disorders, or history of sexual abuse are present.[9] Psychiatric disorders may be present in over 50% of patients with NOVL.[12] Antidepressant and/or anxiolytic medication may be prescribed when indicated.[14] Follow-up studies indicate an eventual full recovery in most of the children, usually within a few weeks or even days.

**CONCLUSION**

Early recognition and prompt intervention gives gratifying results in terms of resolution of symptoms in NOVL.

**Declaration of patient consent**

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient’s parents have given their consent for images and other clinical information to be reported in the journal. The patient’s parents understand that name and initials will not be published and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

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**Conflicts of interest**

There are no conflicts of interest.

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