

## Case Report

# Interesting case of sudden unilateral blindness in a teenager: role of psychological intervention in psychogenic visual loss

Motssim S. Halawani\*

Department of Family Medicine, University of Jeddah, Kingdom of Saudi Arabia

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### \*Correspondence:

Dr. Motssim S. Halawani,

E-mail: mhalawani@uj.edu.sa

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### ABSTRACT

Visual loss complaints are commonly encountered by treating physicians, neurologist and ophthalmologists. More specifically a presentation of non-organic (psychogenic) blindness is less frequently seen but does exist and requires proper evaluation and specific skills for it to be properly managed. This case is of a 19 years old male who presented with acute monocular blindness post trauma whom he also had past psychiatric history. Post thorough assessment, no organic cause was identified, and a diagnosis of psychogenic blindness was made. Psychological therapy was beneficial in aiding return of his vision.

**Keywords:** Monocular blindness, Non organic, Psychogenic blindness

## INTRODUCTION

Sudden onset unilateral blindness usually implies an underlying serious cause and yields to a prompt medical assessment. Common causes of monocular visual loss can anatomically arise from the ocular component (cornea, lens, anterior chamber), retina or neurological structures including optic nerve/chiasm.<sup>1</sup> There is a wide range of differential diagnosis causing vision loss. Factors to think about to guide narrow this list include age, timing of blindness (acute, transient, subacute or chronic), description of "blindness", trauma, associated symptoms and many more.<sup>2</sup>

Diagnostic clues from the history (associated features other than blindness) include "Ocular pain" which may be related to acute angle-closure glaucoma, optic neuritis, or keratitis. "Red eye" on the other hand can also be related to keratitis, acute angle-closure glaucoma or even uveitis. Headache is an important feature that may imply recent trauma, space occupying lesion, giant cell arteritis,

or migraine. History of trauma specifically can cause keratitis, uveitis, and lens dislocation. Lastly, history of photopsia (flashes of bright light) may be related to retinal detachment. It is also important to note, in aging patients and/or the presence of other multiple medical comorbidities (e.g. Diabetes, smoking etc.), vascular pathology and neoplasms may be a potential cause of visual loss.<sup>1,3</sup>

Apart from organic causes as mentioned above, there are also non-organic causes of blindness that need to be considered. This is classified as symptomatic loss of vision which is not due to any ocular or non-ocular pathology of the visual pathway. Other terms used for non-organic blindness include functional, psychogenic, hysteria, malingering, non-physiological visual loss, and conversion syndrome.<sup>4</sup> Psychogenic blindness is more common among younger age groups and females.<sup>5,6</sup> It is estimated that up to 1% of blindness cases presenting to ophthalmologists are due to non-organic causes. The most reported non organic visual complaint presenting to

ophthalmologists is reduction of visual acuity (36-80%).<sup>7</sup> Psychogenic blindness can occur in various psychiatric conditions. Its pathogenesis is not well understood. Signs result from a disturbance to higher cortical structures that yield neurological messages.<sup>4</sup> There are implications of a conversion reaction by which a physical symptom is used to express emotional or psychological distress.<sup>5</sup> Post

careful examination to exclude organic causes, failure to identify any pathology is the first step in considering non-organic causes. Other findings that may suggest a non-organic rather than organic causes include smooth entrance into consultation room, failure to direct eyes towards own hands during tasks, and intact menace reflex.<sup>5</sup>

**Table 1: Strategies to evaluate non-organic monocular visual loss.**

Test	Technique
Fogging test	This is performed by placement of plus lenses of increasing power behind the normal eye while testing the vision. Once visual acuity is reached, the affected eye is occluded, and the patient is asked to read the chart again. A fogging effect of the plus lens will lead to reduced acuity in the normal eye implying that the patient was actually reading from his affected eye.
*A. Polaroid test	The patient wears polarized glasses while looking at letters that the examiner can selectively make visible to either or both eyes.
Pupil splitting prism test	Use of a 5 diopter prism base down to split the pupil in the normal eye. The vision in the affected eye is initially blocked by a finger and patient is asked to start reading letters from the bottom of the chart while slowly moving the prism downwards till its midportion is centred on the pupil and simultaneously removing the finger blocking the affected eye. <sup>8</sup> The patient then will be reading from his affected eye.
Duochrome test	The use of spectacles- green in one eye and red in the other. The patient is asked to look at a screen that has letters visible in one eye and invisible in another.
B. Pupillary reactions test	Test by swinging light method to assess if there is asymmetric optic neuropathy/a relative afferent pupil defect. Positive test is when pupils of both eyes constrict to light stimulation to either eye.
Stereopsis test	Assessment of binocular vision and stereopsis through a Titmus stereo test by showing series of images to each eye through polarized glasses.
C. Visual evoked potential test	Assessment of the visual pathways by placing electrodes to the occipital area and measuring the time taken for a visual stimulus to reach the occipital cortex.
Electroretinography	Assessment of retinopathies by measuring electrical activity in response to light stimulus through electrodes in corneal contact lenses.

\*Table illustrates the techniques of the different tests that could be conducted in an assessment of monocular nonfunctional visual loss. A. achieving visual acuity without patient's being aware, B. Demonstrating inconsistency and C. using objective measures.<sup>5,8</sup>

Few strategies can be used to further evaluate monocular non-organic visual loss and demonstrate if the patient has better vision than described. The "Gotcha" manoeuvres aim to get the patient to see normally without noticing it by having them believe that only their good eye is being tested.<sup>8</sup> This is done by the use of fogging test, polaroid test, Duochrome test or pupil-splitting prism test.<sup>4</sup> Demonstrating inconsistency can be achieved by performing pupillary reactions, stereopsis tests or ophthalmoscopy. Lastly, the use of objective measures to invalidate patient's responses such as swinging light pupil test, visual evoked potentials (VEP) or Electroretinography (Table 1).<sup>8</sup> It is important to note that not all of these tests are required for an assessment but familiarity with them is essential.<sup>5</sup>

This report is on a young male who presented with acute monocular blindness preceded by trauma and had known underlying psychiatric illness. The purpose of this case is

to demonstrate the approach to such presentation, provide insight on non-organic (psychogenic) blindness and the role of psychological intervention. Informed consent has been obtained from the patient to conduct this case report.

## CASE REPORT

Nineteen years old male presented with sudden, painless unilateral blindness in his right eye. "I can't see out of my right eye at all". Further history revealed, he had a mechanical fall at work two weeks prior, landing on his left side and injuring his left forearm and shoulder with nil head or eye injury. He had ongoing worries that he may have had more serious injury somehow. Few days prior to his presentation with eye complaints, he experienced "pressure sensation" in his head accompanied by neck stiffness and nausea. It lasted for less than 24 hrs and self-resolved. He denied active headache nor neck stiffness at time of presentation with

his visual complaint. He denied diplopia, tunnel vision, vomiting or other neurological symptoms.

He had no significant past medical or surgical history. However, he did have past psychiatric history of generalised anxiety disorder. Upon further history, although his anxiety has been stable prior to this presentation, he has noticed that he was more anxious since the fall and had a few panic episodes since, all evolving around the excessive worry that he may have had an injury to his head, and he is in “danger”. He denied depressive symptoms and hallucinations. Moreover, he also denied any alcohol or illicit drug use. There were no self-harm or suicidal thoughts.

There was no intrafamilial or other social conflicts. He was living with his parents and had a girlfriend whom they shared a plan to get married within a year or two. Had good interpersonal relationship with family and friends. He was working full time and had no financial hardship. He had no previous episodes of visual loss, no other major trauma or stressors. Childhood development was unremarkable.

On Examination, he looked comfortable, slightly anxious but not to the extent expected with a visual loss presentation. He mobilized freely into the clinic. His GCS was 15. Vitals (Temp, HR, BP) were all within normal limits. Systemic examination was unremarkable. There were no signs of head or limb injury from the fall. No neck stiffness, rash, and no focal neurological signs apart from his vision. Initial eye examination revealed normal eye movements and visual fields in his left eye compared to the right. Visual acuity of perception to light in the right was established and 6/12 in his left eye. Moreover, evidence of vision acuity of 6/24 in the right eye was established while the patient was unaware the left vision was blurred.

All routine laboratory tests were unremarkable. Due to his recent trauma and headache preceding his visual loss, CT and MRI brain were requested and both were unremarkable. He was referred urgently for ophthalmological assessment which concluded no serious/organic cause was identified. He underwent a fundal examination demonstrating a healthy-looking disc, normal macular and retinal periphery, Optic Coherence Tomography (OCT) scan showing healthy looking optic nerve anatomy and normal retinal thickness bilaterally. He also had a computerized visual field test that demonstrated right hemianopic field loss. Findings were inconsistent with any organic cause and a diagnosis of psychogenic blindness was suggested.

Treatment consisted of psychoeducation, reassurance and regular follow up with both the treating ophthalmologist and patient’s family physician. Moreover, the patient was evaluated and given psychology sessions to further evaluate and manage his complaint. This was primarily by repetitive reassurance, relaxation techniques, and

cognitive behavioural therapy (CBT) for his underlying anxiety disorder. He showed visual improvement within a few weeks of therapy.

## DISCUSSION

The above case represented a non-organic (psychogenic) cause of blindness which is typically suspected in patients with no history of trauma. In this specific case however, the history was interesting and challenging as there was preceding history of trauma. There were also other features in the patient’s history that suggested a possible neurological cause such as migraine having headaches prior to his visual loss.

His underlying history of generalized anxiety and voicing repetitive thoughts/worries of having an underlying serious pathology made a non-organic cause a potential differential (i.e. conversion or somatization disorder). Yet, such history may be overlooked initially and attributed to the significance of his physical symptom. Furthermore, clinical findings upon initial presentation that also supported non organic blindness was his presentation walking calmly and having smooth entrance into the consultation.

Monocular blindness is a symptom that require prompt and thorough evaluation. Regardless of the history or the differential diagnosis (organic or non-organic), a step wise approach is required to ensure no serious pathology is evident. A full ophthalmological and neurological assessment is required in all cases. Only after such evaluation and with findings demonstrating visual acuity is better than subjectively claimed and no apparent pathology, a non-organic visual loss is diagnosed.<sup>9</sup>

The foundations of treatment of psychogenic blindness is education and reassurance. Time should be spent on explaining the non-organic nature, time course, and reassurance of expected complete visual recovery.<sup>10</sup> Moreover, regular follow up and reassessment of vision by an ophthalmologist is also recommended. Use of placebo treatments such as eye drops is discouraged as it may overshadow the reassurance.<sup>5</sup>

Psychogenic blindness is considered a rare presentation. Blindness is a symptom that always requires prompt medical assessment even if a non-organic cause is suspected. As discussed, a step wise approach is indicated for all cases. Psychological factors need to be explored in cases of suspicion with thorough psychiatric history. It is important to note that having non-organic visual loss does not usually necessitate a psychological or psychiatric intervention.<sup>5,7</sup> In this specific case however, psychological intervention for symptom control was shown to be useful as there was already a history of psychiatric illness. Despite this, we can argue the aid of psychological intervention in psychogenic blindness as there may be an association with conversion disorder, but it cannot be generalized to all cases.

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