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Traumatic Vitreous Hemorrhage Following Cow Horn Injury: A Case Report

Haziel Rynjah[1*]

[1*] Assistant Professor, Department of Optometry, Royal Global University, Assam, India.

*** Correspondence:** Haziel Rynjah

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ABSTRACT: Background: Traumatic vitreous haemorrhage is a vision-threatening complication that may arise following blunt or penetrating ocular injury. Early diagnosis and appropriate management are crucial in preventing permanent visual impairment. This report presents a case of vitreous haemorrhage associated with blunt trauma by a cow horn, highlighting the clinical features, investigations, and initial management. Case Presentation: A 51-year-old female presented with redness, pain, swelling, and sudden loss of vision in the right eye after a cow horn injury. Examination revealed conjunctival chemosis, subconjunctival haemorrhage, Descemet's folds, vitreous haemorrhage, and associated choroidal detachment, with visual acuity reduced to counting fingers. Management: The patient was treated with Homide eye drops twice daily and Prednisolone eye drops three times daily, and advised close follow-up to monitor for delayed retinal complications. Conclusion: Early diagnosis, careful retinal evaluation, and timely management are essential in traumatic vitreous haemorrhage to prevent permanent visual impairment, with ultrasonography playing a key role when media opacity limits fundus view.

Keywords: *Traumatic vitreous haemorrhage, Choroidal detachment, Cow horn injury, Blunt ocular trauma*

Introduction

Vitreous haemorrhage refers to the presence of blood within the vitreous cavity and may result from diverse ocular or systemic conditions [(1)]. Its timely diagnosis and appropriate management are essential to minimize vision loss and associated complications. Anatomically, vitreous haemorrhage may occur in the preretinal space, such as subhyaloid or sub–internal limiting membrane (sub-ILM) haemorrhages or within the vitreous gel [(2)]. Subhyaloid haemorrhage, typically boat-shaped and immobile, often occurs in proliferative diabetic retinopathy, whereas sub-ILM haemorrhage, which does not shift with posture, is more commonly associated with Terson syndrome, retinal arterial macroaneurysm (RAM), and Valsalva retinopathy. In intravitreal haemorrhage, the blood disperses within the gel and may settle inferiorly with time.

Vitreous hemorrhage may occur due to retinal vascular disorders, neovascular processes, posterior vitreous detachment (PVD), trauma, intracranial bleeding, malignancies, blood dyscrasias, or surgical complications [(3)]. Traumatic instances may encompass blunt, penetrating, or perforating lesions, occasionally linked to a retained intraocular foreign body. The treatment depends on what caused the problem. It could be cautious observation, laser photocoagulation, cryotherapy, posterior hyaloidotomy, intravitreal anti-VEGF therapy, or pars plana vitrectomy [(4)].

Case presentation

A 51-year-old female presented to the emergency department with complaints of redness, swelling, pain, and sudden loss of vision in the right eye following blunt trauma from a cow horn two days earlier. She reported no significant past ocular history, medical conditions, allergies, or relevant family history. On examination, unaided visual acuity in the right eye was counting fingers close to the face, while the left eye measured 6/6. Near vision was not seen in the right eye, and was N24 at 40 cm in the left eye. Refraction showed a BCVA of Close Fingers Counting (CFC) in the right eye and 6/6 in the left eye, with an additional +2.50D for near. Ocular

motility was full in both eyes, and the cover test demonstrated orthophoria. External examination revealed normal facial symmetry and proper ocular alignment.

Slit-lamp examination of the right eye showed conjunctival chemosis with subconjunctival haemorrhage, Descemet's membrane folds, a quiet anterior chamber, a clear lens, and a reactive round pupil. The left eye was normal. Intraocular pressure measurement could not be obtained in the right eye, while the left eye recorded 13 mmHg. Fundus examination of the right eye, though limited due to hazy media, revealed a healthy optic disc, attached retina, and superotemporal quadrant retinal incarceration. The left fundus appeared normal. Based on these findings, a diagnosis of traumatic vitreous haemorrhage with associated choroidal detachment in the right eye was made.

The patient was prescribed Homide eye drops twice daily for 3 days and Prednisolone acetate eye drops three times daily for one week, with advice to return for follow-up after 3 days. Traumatic vitreous haemorrhage occurs due to disruption of ocular blood vessels following blunt impact and may be associated with retinal tears or choroidal involvement. Early fundus examination is essential, as visualization may worsen later with blood dispersion. If the view becomes obscured, B-scan ultrasonography becomes critical to rule out retinal detachment or occult globe rupture. In this case, initial assessment did not reveal retinal detachment; however, close follow-up was emphasized due to the possibility of delayed complications. Prompt diagnosis and early intervention are crucial to preserve visual function and reduce long-term morbidity.

Medical History

The patient had no known systemic medical conditions such as diabetes, hypertension, cardiovascular disease, or bleeding disorders.

Family History

There was no family history of ocular diseases, trauma, hereditary retinal conditions, or systemic illnesses associated with ocular manifestations.

Allergy History

The patient reported no known drug allergies and denied any allergic reactions to medications, food, or environmental agents.

Ocular Examination

Visual Acuity

Test	**OD**	**OS**
Unaided	CFC	6/6
Pinhole	NI	–
Near	Not seen @40 cm	N24 @40 cm

Refraction

Eye	Distance BCVA	Add	Near
OD	+0.00 → CFC	+2.50	Not seen
OS	+0.00 → 6/6	+2.50	N6

Slit Lamp Examination

Structure	**OD**	**OS**
Eyelids/Adnexa	–	–
Conjunctiva	Chemosis, SCH	Normal
Cornea	DM folds	Clear
Anterior chamber	Quiet	Normal
Lens	Clear	Clear
Iris	Normal	Normal
Pupil	RRR	RRR
Vitreous	*Hazy view due to VH*	Normal
IOP (NCT)	Not recorded	13 mmHg

Fundus Examination

Eye	Findings
OD	Disc normal, FR present, retina attached, superotemporal quadrant (STQ) retinal incarceration
OS	Disc and retina normal, FR present

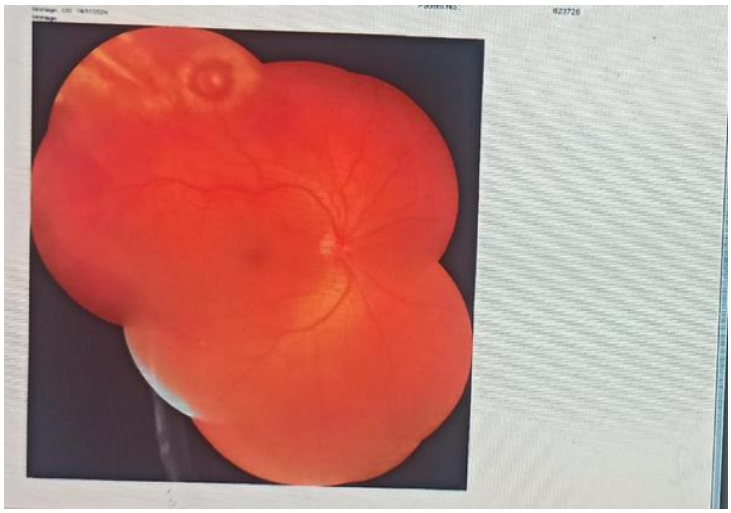

Figure 1: Montage Fundus Photograph of the Right Eye Showing Vitreous Hemorrhage with Supertemporal Retinal Incarceration.
Sources Images Capture Realme 8s 5G

Discussion

This patient presented with acute visual loss following blunt ocular trauma from a cow horn. The presence of conjunctival chemosis, subconjunctival hemorrhage, vitreous hemorrhage, and choroidal detachment correspond with high-impact trauma.

In traumatic cases, VH may be associated with

- Retinal tears
- Retinal incarceration
- Choroidal detachment
- Occult globe rupture

The initial fundus view is often best immediately after injury because blood later diffuses through the vitreous. If media opacity limits visualization, B-scan ultrasonography becomes critical for detecting retinal breaks or detachment. In this case, the retina was partially visible, and no retinal detachment was detected on initial evaluation. The patient was advised to follow-up due to the risk of delayed retinal breaks.

Conclusion

Vitreous haemorrhage secondary to blunt trauma requires urgent evaluation to rule out retinal or choroidal complications. Early diagnosis and management are crucial in preventing permanent visual sequelae. When fundus examination is limited, ultrasonography should be used to assess retinal integrity. Continuous monitoring is crucial, as delayed complications may occur following traumatic injuries.

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