

From Retina to Rhythm: Valsalva Retinopathy and Cardiac Sequelae Following Partial Hanging

Pulkit Kapoor¹, Debdip Gosh², Kanishka Verma³, Tiya Joby⁴, S Anton Charles⁵, Shaun Nevil^{6*} and Chaitra C.S⁷

¹Punjab Institute of Medical Sciences, Punjab, India

²Rajarajeshwari Medical College, Karnataka, India

³Sri Guru Ram Das Institute of Medical Sciences and Research, India

⁴Department of Internal Medicine, ESIC Medical College & PGIMSR, Karnataka, India

⁵Department of Internal Medicine, ESIC Medical College & PGIMSR, Karnataka, India

⁶Department of Internal Medicine, ESIC Medical College & PGIMSR, Karnataka, India

⁷Assistant Professor, Department of Internal Medicine, ESIC Medical College & PGIMSR, Karnataka, India

Citation: Pulkit Kapoor, Debdip Gosh, Kanishka Verma, Tiya Joby, S Anton Charles, Shaun Nevil, et al. From Retina to Rhythm: Valsalva Retinopathy and Cardiac Sequelae Following Partial Hanging. Ann Case Rep Clin Stud. 2026;5(4):1-4.

Received Date: 20 April 2026; **Accepted Date:** 24 April 2026; **Published Date:** 26 April 2026

***Corresponding author:** Shaun Nevil, Department of Internal Medicine, 41st Cross, 2nd block Rajajinagar, Bengaluru-560010, Karnataka, India

Copyright: © Shaun Nevil, Open Access 2026. This article, published in Ann Case Rep Clin Stud (ACRCS) (Attribution 4.0 International), as described by <http://creativecommons.org/licenses/by/4.0/>

ABSTRACT

Valsalva retinopathy is a recognized cause of pre-retinal hemorrhage resulting from sudden increases in intra-thoracic or intra-abdominal pressure, though its occurrence in the context of hanging is uncommon. A 44-year-old male presented following an episode of deliberate self-harm by partial hanging and was admitted in an intubated state. Clinical evaluation revealed no intracranial or cervical spine injury; however, ophthalmological examination demonstrated well-defined pre-retinal hemorrhages consistent with Valsalva retinopathy. The mechanism is likely related to acute jugular venous compression leading to venous congestion and elevated retinal venous pressure, further compounded by episodes of vomiting and underlying hypertension. The absence of other common causes of retinal hemorrhage supported a hemodynamic etiology. This case highlights the importance of considering retinal involvement in near-hanging patients and the role of fundoscopic examination in identifying otherwise overlooked complications.

Keywords: Valsalva retinopathy; Partial hanging; Retinal hemorrhage; Venous congestion; Fundoscopy

INTRODUCTION

Valsalva retinopathy is a well-recognized cause of pre-retinal hemorrhage resulting from a sudden increase in intra-thoracic or intra-abdominal pressure, which is transmitted to the ocular venous system, leading to rupture of superficial retinal capillaries [1,2]. It typically presents as acute, painless visual disturbance and is most commonly associated with activities such as coughing, vomiting, straining, or heavy exertion. The hemorrhage is usually located in the sub-hyaloid or sub-internal limiting membrane space and often involves the macula,

producing significant visual symptoms [1]. Although the condition is generally benign and self-limiting, identifying the precipitating factor is important, particularly in atypical presentations.

Partial hanging represents a rare and underreported precipitant of Valsalva retinopathy. Unlike complete hanging, partial hanging allows some degree of body support, leading to preferential compression of the low-pressure jugular veins while arterial inflow may be relatively preserved. This results in venous congestion, increased intracranial and retinal venous pressure, and subsequent capillary rupture [3]. Additional factors such as vomiting and poorly controlled hypertension may further increase susceptibility. The absence of intracranial or structural injury in such cases supports a predominantly hemodynamic mechanism. This case highlights the importance of considering retinal involvement and incorporating ophthalmological evaluation in the assessment of near-hanging patients.

CASE DESCRIPTION

A 44-year-old male auto-driver was brought to the emergency department in an intubated state following an alleged episode of deliberate self-harm by partial hanging. He was a known case of hypertension with poor adherence to medication and had a history of chronic alcohol use, with his last intake on the night of the incident.

According to attendants, he was found hanging from a ceiling fan using a saree, with the knot positioned laterally. His right foot was in contact with the floor and his left foot rested on the bed, consistent with partial hanging. The ligature was removed immediately, and he was taken to a nearby hospital. During transit, he had episodes of vomiting and progressive drowsiness, following which he was intubated and mechanically ventilated. He was later discharged against medical advice and referred to our center.

On arrival, he was intubated and sedated, with a pulse rate of 70 beats per minute, blood pressure of 105/60 mmHg, and oxygen saturation of 94% on ventilatory support. A twelve-lead electrocardiogram (Figure 1) demonstrated diffuse tall, peaked T waves, most prominent in the precordial leads (V2-V6), along with attenuation of P waves characteristic of hyperkalemia. In the context of partial hanging, this electrolyte disturbance can be attributed to underlying metabolic derangements, particularly metabolic acidosis and possible rhabdomyolysis resulting from hypoxic injury. Neurological examination revealed a Glasgow Coma Scale score of E2V3M2, with bilaterally reactive pupils and no focal deficits. A faint ligature mark was noted over the posterior neck without significant soft tissue injury.

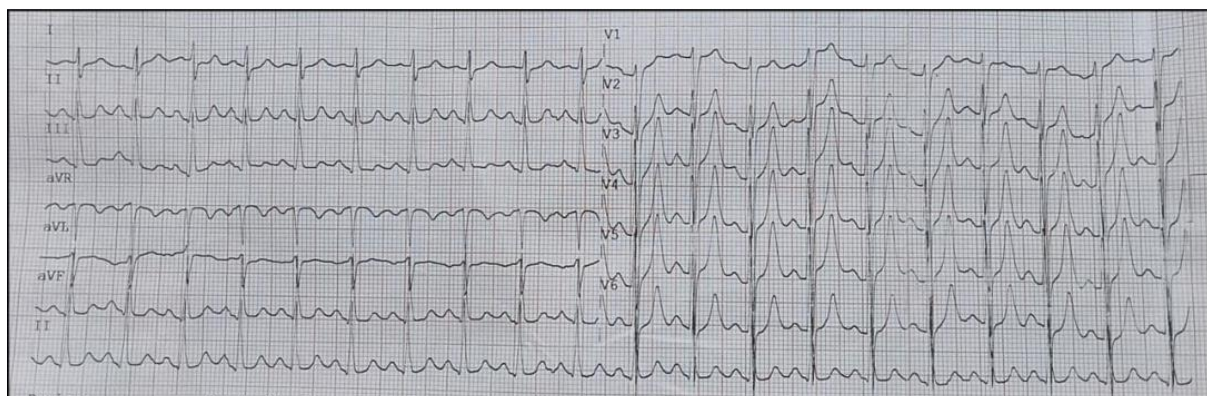


Figure 1: Twelve-lead electrocardiogram demonstrating diffuse tall, peaked T waves, most prominent in the precordial leads (V2–V6), with associated attenuation of P waves. These findings are characteristic of

hyperkalemia. In the present case of partial hanging, hyperkalemia may be attributed to metabolic acidosis and rhabdomyolysis.

Laboratory investigations and arterial blood gas analysis were within normal limits. Imaging, including computed tomography of the brain and cervical spine, showed no abnormalities. Ophthalmological evaluation revealed well-defined pre-retinal hemorrhages consistent with Valsalva retinopathy (Figure 2), without evidence of diabetic or hypertensive retinopathy, retinal tears, or detachment. Cardiovascular evaluation was unremarkable.

Based on clinical and investigative findings, a diagnosis of deliberate self-harm by partial hanging with Valsalva retinopathy secondary to acute venous pressure changes was made, along with comorbid hypertension and alcohol dependence.

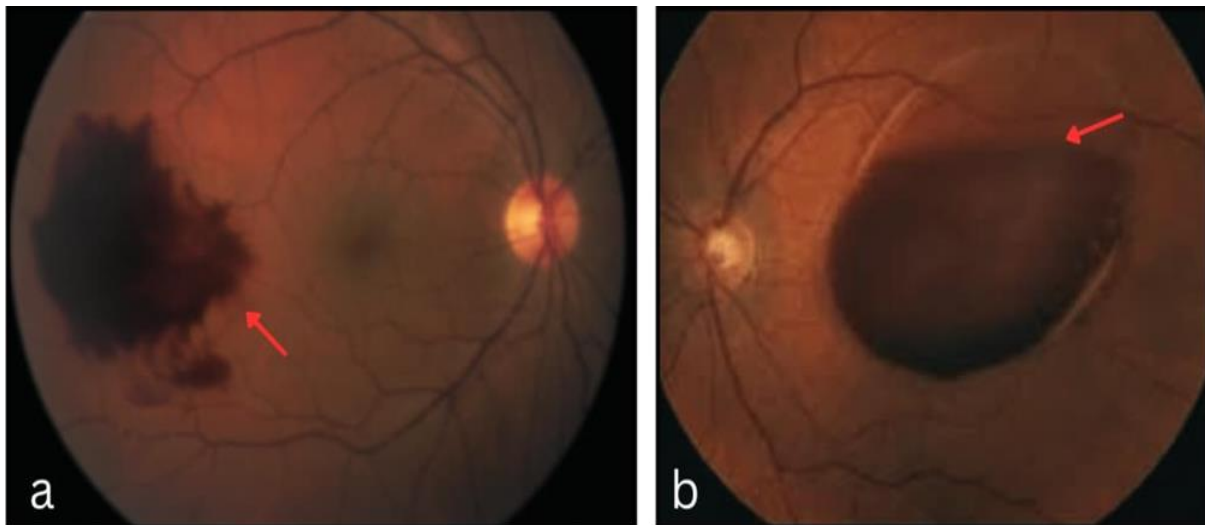


Figure 2: a): Color fundus photograph of the right eye showing a large, irregular, dark hemorrhagic area located temporal to the optic disc (arrow). The optic disc appears well defined, with surrounding retinal vessels of normal caliber and course. b). Color fundus photograph of the left eye demonstrating a well-circumscribed, boat-shaped premacular hemorrhage with a horizontal fluid level (arrow). The optic disc and retinal vessels are visualized adjacent to the lesion.

DISCUSSION

Hanging is a common method of deliberate self-harm, particularly among middle-aged men with psychosocial stressors, and is frequently associated with alcohol use, which increases impulsivity and risk-taking behaviour [1,7]. In partial hanging, even minimal pressure can occlude the jugular veins, leading to impaired venous return, cerebral congestion, and hypoxia, while structural injuries such as cervical spine damage are relatively uncommon [3]. Prognosis depends on factors such as initial Glasgow Coma Scale score and duration of hypoxia, with early airway stabilization and systematic evaluation being essential [1,2,4].

The key finding in this case was Valsalva retinopathy, likely resulting from acute venous congestion due to jugular venous obstruction, compounded by transient increases in intra-thoracic pressure [3,5,9]. Although hypertension was present, the absence of characteristic retinal changes suggests an acute hemodynamic etiology rather than chronic vascular disease [8]. Valsalva retinopathy is typically self-limiting, though intervention may

be required in persistent cases [6,10]. This case underscores the importance of recognizing retinal complications in near-hanging survivors and supports routine fundoscopic evaluation as part of multidisciplinary care.

CONCLUSION

This case demonstrates the role of acute venous congestion and hemodynamic changes in the development of retinal hemorrhage following partial hanging. It emphasizes the value of incorporating ophthalmological evaluation into the multidisciplinary assessment of near-hanging patients to ensure comprehensive care.

REFERENCES

1. Ramadoss R, Sekar D, Rameesh M, Saibaba J, Raman D. Clinical profile, corticosteroid usage and predictors of mortality in near-hanging patients: A five-year single-center retrospective study. Indian J Crit Care Med. 2023;27(6):403-10.
2. Parthiban M, Ramamoorthy G, Senthil S, Nithya Shree A. Outcome of near hanging - A prospective observational study in a tertiary care centre. Int J Med Pharm Res. 2025;6(6):476-82.
3. Kannamani B, Sahni N, Bandyopadhyay A, Saini V, Yaddanapudi LN. Insights into pathophysiology, management, and outcomes of near-hanging patients: A narrative review. J Anaesthesiol Clin Pharmacol. 2024;40(4):582-7.
4. Dorfman JD. Near hanging: evaluation and management. Chest. 2023;163(4):855-60.
5. Prabhu P, Amitha N, Reshma B, Unnikrishnan S. Valsalva retinopathy following an aborted attack of destructive self-harm by strangulation. Muller J Med Sci Res. 2017;8(2):94-6.
6. Silva LO, Oliveira LN, Oliveira MN, Oliveira Neto HL. Valsalva retinopathy in a young patient: A case report. Cureus. 2025;17(4):e83039.
7. Rahooof V, Cherian AV, Kandasamy A, Ezhumalai S, Pandian RD. Suicidal ideation among persons with alcohol use disorder: A cross-sectional study. J Psychosoc Well-being. 2021;2(2):30-41.
8. Tsukikawa M, Stacey AW. A review of hypertensive retinopathy and chorioretinopathy. Clin Optom. 2020;12:67-73.
9. Li M, Su C, Fan C, Chan CC, Bai C, Meng R. Internal jugular vein stenosis induced by tortuous internal carotid artery compression: Two case reports and literature review. J Int Med Res. 2019;47(8):3926-33.
10. Simakurthy S, Tripathy K. Valsalva retinopathy. StatPearls. Treasure Island (FL): StatPearls Publishing; 2023.