CASE REPORT

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Spontaneous globe rupture in an eye with long-standing vision loss: a case report

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ABSTRACT

Introduction: Globe rupture is a form of open-globe injury commonly caused by blunt force. Spontaneous presentations are uncommon and easily overlooked.

Case description: A 62-year-old man was admitted with acute, painful bleeding from his right eye without a history of trauma. He had a history of uncontrolled hypertension. He reported cataract surgery on the right eye in 2008, but vision in that eye did not improve following the procedure. Presenting visual acuity was no light perception. Examination showed blepharospasm, conjunctival and pericorneal injection, and diffuse corneal opacity. A large hyphema obscured the iris and posterior segment. Evisceration was performed as the definitive management of this case.

Conclusion: Spontaneous globe rupture is a rare, vision-threatening ophthalmologic emergency. Early identification and urgent operative management are essential for pain control and complication prevention.

Keywords: corneal rupture, open-globe injury, spontaneous globe rupture.
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INTRODUCTION

Open-globe injuries are full-thickness defects of the eyewall with exposure of intraocular contents, caused by blunt trauma, sharp trauma, or shock waves.[1,2] According to the Birmingham Eye Trauma Terminology (BETT) System, globe rupture is a form of open-globe injury caused by blunt force via an inside-out mechanism.[3]

Spontaneous globe rupture refers to a rupture that occurs without significant antecedent trauma. This condition is relatively rare and is considered as an ophthalmologic emergency that needs rapid recognition and urgent intervention.[4] A sudden rise in intraocular pressure can cause disruption at the weakest point of the eyewall. In the sclera, the weakest region lies near the equator, directly posterior to the rectus muscles insertions, where the sclera is thinnest.

Other vulnerable sites include the limbus, the optic nerve insertion, and prior surgical wound.[5] In this case report, we aimed to present our experience with spontaneous globe rupture in the long-standing blind eye of an elderly patient. This case adds to the limited literature and highlights the need for timely recognition and appropriate surgical management.

CASE PRESENTATION

A 62-year-old man presented to our emergency department with acute pain and spontaneous bleeding from the right eye that began approximately three hours earlier. Over the prior week, he experienced intermittent episodes of severe pain in the right eye with headache but did not seek care. After the bleeding began, the ocular pain decreased slightly but persisted.

He denied recent trauma or other systemic symptoms. Past medical history included uncontrolled hypertension, and he underwent cataract surgery at other hospitals, the right eye in 2008 and the left eye in 2012. The right eye remained nonfunctional after surgery, and he relied on the left eye from then on.

At presentation he was alert. Vital signs were blood pressure of 160/90 mmHg, pulse of 93 beats per minute, respiratory rate of 24 breaths per minute, and temperature of 36.3 °C.

Pain was rated 6 to 7 on a visual analog scale. Visual acuity of the right eye was no light perception. Examination of the right eye showed active bleeding, blepharospasm, conjunctival and pericorneal injection, and diffuse corneal opacity (**Figure 1**). Details of the iris and posterior segment were obscured by a large hyphema. The left eye was unremarkable with, visual acuity of 6/6, intraocular pressure 16 mmHg, and a stable intraocular lens. Fundus examination of the left eye showed a cup-to-disc ratio of approximately 0.3 to 0.4, clear optic disc margins, and a flat macula.

Initial management included pain control and systemic antibiotic prophylaxis. The patient was scheduled for urgent evisceration under general anesthesia. Intraoperative findings included a full-thickness corneal rupture adjacent to the limbus, extending circumferentially clockwise from 7 to 1 o'clock, with partial extrusion of the intraocular lens (**Figure 2**). The posterior globe was intact. The procedure was uneventful, and no complications occurred during the hospital stay. Written informed consent was obtained from the patient for publication of this case report.

DISCUSSION

Globe rupture is most often the result of trauma.[3] However, in our case, neither the patient nor the family recalled any recent injury or eye procedure. On examination, there were no signs of trauma. A spontaneous etiology was therefore considered. Previous case reports have documented this occurrence in eyes with uncontrolled glaucoma.[4,6] In such eyes, it has been proposed that rupture is due to suprachoroidal haemorrhage in a structurally vulnerable globe.[6] Spontaneous globe rupture has also been reported in endophthalmitis[7], dengue fever/dengue hemorrhagic shock syndrome[8,9], in an eye previously treated with pneumatic retinopexy[10], in an eye with an extensive ocular surgical history[5], and in an infant with retinoblastoma.[11]

The patient's initial symptoms were acute pain and bleeding from his right eye, along with recent episodes of severe ocular pain and headache that slightly lessened after the bleeding began. This pattern is similar to reported symptoms of spontaneous globe rupture in glaucomatous eyes with uncontrolled intraocular pressure.[4,6] However, as this was his first visit to our facility, prior medical records were unavailable. Consequently, longitudinal data such as serial intraocular pressure measurements, optic nerve assessments, and fundus findings could not be reviewed. The rural setting of our facility also limited access to advanced diagnostic modalities and further constrained ancillary evaluation. Given the absence of historical data and a complete evaluation, glaucoma was suspected but could not be confirmed in this eye.

Visual outcomes after open-globe injuries, including globe rupture, are often limited despite advances in technique and equipment.[3] Eyes that present with no light perception consistently have a poor prognosis across prognostic scoring systems.[12] In this case, the eye presented with no light perception and there was no realistic prospect of visual recovery.

Evisceration was performed for pain management and infection risk reduction. Removal of uveal tissue may also lower the theoretical risk of sympathetic ophthalmia in the fellow eye.[4]

Figure 1. A 62-year-old male with right eye spontaneous globe rupture.

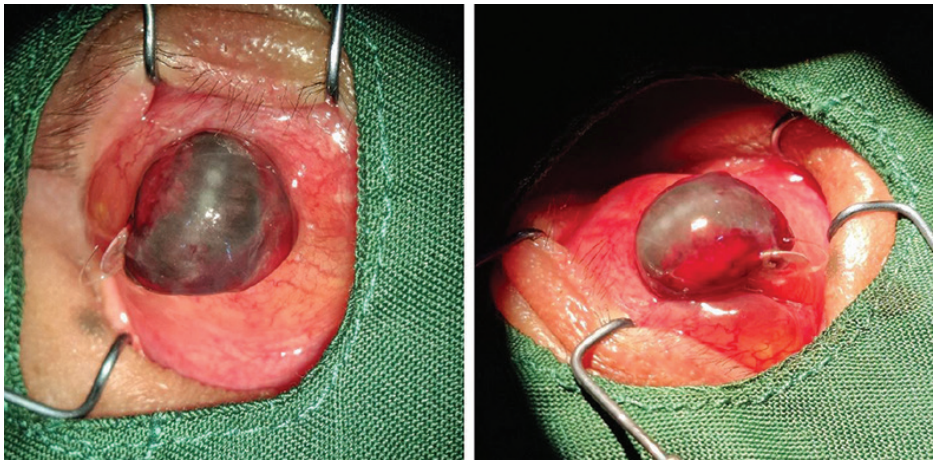

Figure 2. Intraoperative photographs of the right eye: (A) frontal view; (B) temporal view.

When asked about the long interval without care for his right eye, the patient reported several barriers to care despite coverage for visits and procedures through government-subsidized health insurance. He resides in a rural subdistrict without ophthalmology services, and the nearest provider is in our subdistrict, approximately 43 km away. Routine follow-up required substantial travel time, out-of-pocket costs for transport and accommodation, and a companion for hospital visits. These circumstances highlight the need for more equitable

distribution of ophthalmology services in underserved, resource-limited rural communities.

CONCLUSION

We described a case of globe rupture without antecedent trauma. Early stabilization followed by urgent evisceration was undertaken to relieve pain and reduce infection risk. Although the visual prognosis is poor once rupture occurs, prompt recognition and decisive management remain essential to patient safety and comfort. This case also highlights the importance of accessible ophthalmology services in rural communities to help prevent delayed presentations.

DISCLOSURES

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Conflict of Interest

The authors declared no conflict of interest.

Author Contribution

All authors contributed equally to the study, from conception to the final reporting.

REFERENCES

1. Zhou Y, DiSclafani M, Jeang L, Shah AA. Open Globe Injuries: Review of Evaluation, Management, and Surgical Pearls. Clin Ophthalmol. 2022 Aug 10;16:2545–59.
2. Wang S, Li F, Jin S, Zhang Y, Yang N, Zhao J. Biomechanics of open-globe injury: a review. Biomed Eng OnLine. 2023 May 25;22(1):53.
3. Alnahdi A, Alajmi AA, Alsaadi K, Alqazlan Z, Alkandari K, Alkhatib M, et al. Etiology, Epidemiology, Assessment and Prognosis of Globe Rupture. J Healthc Sci. 2022;02(06):118–23.
4. Aina AS, Adeleke OT, Aina I. Spontaneous Globe Rupture following Prolonged Uncontrolled Elevated Intraocular Pressure. Middle East Afr J Ophthalmol. 2023 June;30(2):125.
5. Kolosionek T, Sultan DA, Tsay K, Schultz KL, MacKenzie RS, Elliott NC. Spontaneous globe rupture in a patient with extensive ocular surgical history. Am J Emerg Med. 2023 May 1;67:195.e1-195.e3.
6. Oronsaye DA, Kayoma DH. Spontaneous Globe Rupture in a Blind Glaucomatous Eye: A Report of Three Cases. Niger Postgrad Med J. 2018 Dec;25(4):264.
7. Wood EH, Powers MA, Moshfeghi DM. Spontaneous Globe Rupture Due to Rapidly Evolving Endogenous Hypermucoid Klebsiella Pneumoniae Endophthalmitis. Ophthalmic Surg Lasers Imaging Retina. 2017 July;48(7):600–1.
8. Jyothi PT, Farseenamol AP, Subi AS, George AE. Spontaneous globe rupture in dengue: A case series. Kerala J Ophthalmol. 2018 Aug;30(2):117.
9. Kaur R, Singh H, Sehgal A, Singh J. Spontaneous globe rupture: Unusual ophthalmic manifestation with dengue hemorrhagic shock syndrome. Am J Ophthalmol Case Rep. 2022 Jan 23;25:101297.
10. Soumaya R, Bassma H, Reda B, Adil M, Leila B, Abderrahim C, et al. Spontaneous Globe Rupture as Complication of Pneumatic Retinopexy: Case Report.
11. Ng H, Sloan B, Sp Y, Chong CF. Spontaneous Globe Rupture in Infant with Retinoblastoma. [cited 2025 Sept 18]; Available from: https://www.authorea.com/users/588478/articles/625660-spontaneous-globe-rupture-in-infant-with-retinoblastoma
12. Blanch RJ, McMaster D, Patterson TJ. Management of open globe injury: a narrative review. Eye. 2024 Nov;38(16):3047–51.