

Globe Rupture Secondary to a Spontaneous Suprachoroidal Hemorrhage in a Blind Glaucomatous Eye: A Case Report

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Abstract

Purpose: To report a rare case of globe rupture following a spontaneous expulsive suprachoroidal hemorrhage without a predisposing event.

Methods: Case report.

Results: A 40-year-old man presented with a 3-week history of episodic eye pain, likely associated with uncontrolled glaucoma, and a spontaneous clot exuding from his right eye without a predisposing event. Notably, the patient had a remote past ocular history of posttraumatic glaucoma and untreated retinal detachment from childhood. He underwent uncomplicated evisceration of the right eye with polymethyl methacrylate implantation.

Conclusions: Spontaneous expulsive suprachoroidal hemorrhage without a predisposing event is an exceedingly rare phenomenon, with only six previously reported cases. It is possible that eyes with a history of trauma, possibly diseased eyewalls, and eyes with high intraocular pressure may be the most susceptible to spontaneous suprachoroidal hemorrhage and consequent globe rupture.

Keywords: Glaucoma, Globe rupture, Retinal detachment, Suprachoroidal hemorrhage

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INTRODUCTION

Globe rupture is a devastating ocular emergency typically resulting from a significant rise in intraocular pressure in a short period of time.¹ Suprachoroidal hemorrhage is a rare, serious condition that can occur following trauma, surgery, or more rarely, occur spontaneously.² Expulsive suprachoroidal hemorrhage is exceedingly rare and is associated with very poor visual outcomes despite available surgical management options.³ Spontaneous suprachoroidal hemorrhage leading to globe rupture is not well documented, and the risk factors are not entirely understood. Here, we present a case of a 40-year-old male with a past ocular history of posttraumatic angle recession glaucoma and untreated retinal detachment who presented with a globe rupture secondary to a spontaneous suprachoroidal hemorrhage.

CASE REPORT

A 40-year-old male patient with a past ocular history of no light perception in the right eye since age 5 as a result of a traumatic retinal detachment secondary to a boxing injury, that was never treated surgically. His ocular history also included advanced posttraumatic angle recession glaucoma and recurrent iritis. He had no medical conditions and was taking no medications. Notably, the patient lived in a rural community with limited access to the healthcare system. The patient was using his laptop and felt significant pressure behind his eye with severe pain. He stated that he saw white discharge and a large clot exuding from the eye. He claims that he had been having issues with the eye in the previous 3 weeks, likely episodes of high intraocular pressure with corneal decompensation, however, did not present to the healthcare system. When he

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Table 1: Characteristics of previously published reports of spontaneous expulsive suprachoroidal hemorrhage leading to globe rupture without a predisposing ophthalmic event

Study	Age, sex, and laterality	Ocular conditions	Systemic conditions	History of trauma	History of surgeries	Medications	Baseline visual acuity	Outcome after globe rupture	Findings
Ting, 2019 ⁵	76 females, OS	Glaucoma	Hypertension	None	Cataract surgery OD	Amlodipine	NLP	Evisceration	Perforated cornea with prolapsed uveal tissues and fragile conjunctive. Histology and culture noted presence of <i>Pseudomonas aeruginosa</i>
Ophir, 2001 ⁶	90 males, OD	Corneal inflammatory disease and glaucoma	Diabetes mellitus, atherosclerosis	None	None	Timolol	Not reported	Evisceration	Clinicopathologic evaluation revealed acute corneal inflammation, intraocular inflammation, and inflammatory necrosis of choroidal vessels
Srikanth, 2013 ⁷	57 females, OD	Not reported	Decompensated liver cirrhosis	None	None	Timolol, acetazolamide	Not reported	Planned evisceration (unable due to bleeding)	Perforation inferior limbus with iris prolapse, total hyphema, peribulbar hemorrhage, lid edema, conjunctival congestion with chemosis, and mild proptosis
Oronsaye, 2018 ⁸	80 males, OD	Glaucoma	Hypertension	None	Trabeculectomy OU	Topical, intraocular pressure-lowering medications (unspecified)	Not reported	Evisceration	Mild lid edema, conjunctival injection, encysted nonfunctional bleb on superior limbus, and an opaque cornea uveal tissue protrusion from 3 to 9 o'clock
	75 females, OD	Glaucoma	Hypertension	None	None	Traditional eye medications (ground leaf extract)	NLP	Enucleation	Marked periorbital edema, conjunctival injection, uveal tissue protrusion from superior limbus, and an opaque cornea. The histology report showed corneoscleral, uveal, and retinal inflammation
	63 females, OD	Glaucoma	Hypertension	None	None	Topical betamethasone and traditional eye medications (ground leaf extract)	NLP	Evisceration	Periorbital edema, conjunctival injection and chemosis, uveal tissue protrusion through temporal limbus from 6 to 12 o'clock, and an opaque cornea
Sudhir, 2002 ⁹	54 males, OS	Not reported	Diabetes mellitus and anemia	None	None	Not reported	LP	Evisceration	Histopathologic evaluation revealed diffuse corneal inflammation, Descemet's membrane rupture, extensive uveal edema with exudation, and dilated choroidal vessels with some vessels showing thrombus in the lumen
Manton, 2021 ¹⁰	86 males, OS	Glaucoma, entropion, trichiasis, bacterial keratitis	Hypertension, atrial fibrillation, and diabetes	None	Cataract surgery OS and medial canthus basal cell carcinoma removal OS	Bimatoprost, timolol, dorzolamide, ramipril, atenolol, aspirin, insulin	HM	Evisceration	The expulsive suprachoroidal hemorrhage resulted in expulsion of retina, vitreous, lens, and uveal structures through corneal rupture

OD: Right eye, OS: Left eye, OU: Both eyes, HM: Hand motion, LP: Light perception, NLP: No LP

presented to the emergency department, he had severe right eye pain secondary to globe rupture. He was subsequently referred to us, and on examination, he was found to have a suprachoroidal expulsive hemorrhage and was scheduled for an urgent evisceration [Figure 1]. The cornea and uvea were inflamed, disrupted, and fragmented. There was no history of recent trauma or eye rubbing. He underwent uncomplicated evisceration of the right eye with polymethyl methacrylate implantation. During the evisceration surgery, we found the posterior globe intact, and the expulsive clot had erupted through the cornea. The pathology noted bullous keratopathy. The patient consent was obtained for case report submission and publication.

DISCUSSION

Most commonly, expulsive suprachoroidal hemorrhage is a result of a precipitating event such as surgery, trauma, or rarely the Valsalva maneuver.^{4,5} While spontaneous suprachoroidal hemorrhage is sparsely documented, the literature suggests age-related macular degeneration, high myopia, elevated intraocular pressure, thrombolytics, and glaucoma to be pertinent ocular risk factors.⁴ The possibility of spontaneous expulsive suprachoroidal hemorrhage, although rare, is worth noting particularly for comprehensive ophthalmologists with patients that have a positive history for the above-stated risk factors. To the best of our knowledge, there are only six reports of spontaneous expulsive suprachoroidal hemorrhage, leading to globe rupture without a predisposing ophthalmic event [Table 1].⁵⁻¹⁰ Here, we have presented a case of spontaneous suprachoroidal hemorrhage, leading to globe rupture where the patient had glaucoma with uncontrolled intraocular pressures alongside a past history of traumatic retinal detachment. Notably, this patient resided in a rural community and did not have regular eye examinations that could be referenced.

Previously, published case reports of spontaneous suprachoroidal hemorrhage have reported generally poor visual outcomes, and typically, the patients have preexisting ocular conditions that may impact the integrity of their ocular tissue.⁶ Our patient's history of traumatic retinal detachment coupled with his likely chronically elevated intraocular pressures may have contributed to a weakened cornea that was more susceptible to spontaneous rupture. All



Figure 1: Spontaneous, expulsive suprachoroidal hemorrhage of the right eye

the previous cases of spontaneous expulsive suprachoroidal hemorrhage have reported that the expulsion occurred through the cornea, and our case is consistent with this.⁵⁻¹⁰ Pathology noted bullous keratopathy which is consistent with our speculation of chronic episodes of high intraocular pressure episodes and corneal decompensation. As has been previously described, angle recession with posttraumatic glaucoma may also contribute to the poor prognosis associated with suprachoroidal hemorrhage.¹¹ Most previous reports that outlined cases of spontaneous expulsive suprachoroidal hemorrhage documented a history of advanced glaucoma.^{5,6,8,10} Our case supports this association. Furthermore, although there are two previously published reports which document cases with no previous history of glaucoma, both patients were noted to have intraocular pressures above 40 mmHg at, or immediately before, the time of presentation. The previous reports emphasize the relevance of systemic risk factors and medications, specifically anticoagulants, and our patient did not have any known systemic medical conditions.^{4,11,12} However, due to his limited healthcare access, it is possible that he had undiagnosed medical conditions. The previous publications demonstrate corneal sites for expulsive suprachoroidal hemorrhage, and our case is consistent with this. Possibly, this may be due to the sclera's relative strength compared to the cornea.

In conclusion, we present a case of a 40-year-old man who presented with spontaneous expulsive suprachoroidal hemorrhage, leading to globe rupture. Spontaneous expulsive suprachoroidal hemorrhage without a predisposing event is an exceedingly rare phenomenon, with only six previously reported cases. It is possible that patients with a history of traumatic eye injury, possibly diseased eyewalls, and eyes with high intraocular pressure may be the most susceptible to spontaneous suprachoroidal hemorrhage and consequent globe rupture. In addition to these clinical takeaways, our case highlights the importance of accessible ophthalmological care in the rural communities.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given his consent for his images and other clinical information to be reported in the journal. The patient understands 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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