Case Report

# Management of a Case of Phacoanaphylactic Glaucoma – Case Report

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## Abstract

Phacoanaphylactic glaucoma is a rare type of lens-induced glaucoma that mimics the clinical presentation of acute congestive glaucoma but with an open angle and raised intraocular pressure (IOP). A middle-aged male patient presented with cloudiness of the cornea and pain in the left eye with visual acuity limited to hand movements and raised IOP for 1 day. Slit lamp examination revealed corneal epithelial edema and a turbid anterior chamber (AC). Prompt diagnosis and management with anti-glaucoma medication and cataract extraction helped restore good visual acuity.

**Keywords**: Lens-induced glaucoma, Phacolytic glaucoma, Phacoanaphylactic glaucoma, Cataract surgery, Case report.

## Introduction

Phacoanaphylactic glaucoma, a secondary open-angle glaucoma, presents with a cloudy and painful eye, decreased vision, hypermature cataract and raised IOP. It is a rare complication of long-standing mature/hypermature and has diagnostic difficulty due to its atypical presentation.[1] There is a release of lenticular protein in the anterior chamber due to long-standing intra-lenticular pressure. It is important to keep in mind the potential vision-threatening complications arising from neglected cataract. Recognizing these entities in time would ensure appropriate management.[2]

## Case report

A 56-year-old male presented to the ophthalmology OPD with diminution of vision in the left eye (LE) for 3 months, pain and redness in the LE for 1 day and headache and vomiting since morning.

Patient was apparently alright 3 months back when he started having diminution of vision in LE gradual onset, slowly progressing over a period of 3 months for distance and near vision. Pain in the LE was acute in onset, gradually progressive, dull aching type, not relieved with oral medication. Headache was acute in onset, in the forehead region, severe, squeezing type, not relieved with oral medication and was associated with one episode of vomiting, which was non-projectile and associated with nausea.

On examination, he had visual acuity of only hand movements in the left eye and 6/6 in the right eye; ocular movements were full and free with lid edema on the left side (Figure 1A). Slit lamp examination revealed conjunctival congestion, diffuse corneal haze and AC filled with whitish material; the rest of the details of iris, pupil and lens were not visible (Figure 1B and 1C). There was no fundal view; hence, an ultrasound B Scan was done, showing a cataractous lens and a few vitreous opacities (Figure 2). The IOP was 42 mmHg by Goldmann applanation tonometry (GAT). The other eye was within normal limits. This presentation suggested a diagnosis of phacolytic/ phacoanaphylactic glaucoma.

Other differentials could be endophthalmitis, severe anterior uveitis and acute congestive glaucoma. The definitive treatment of phacoanaphylactic glaucoma is cataract extraction. Pre-operatively, he was started on anti-glaucoma medications for IOP control - topical brimonidine, topical Timolol, oral acetazolamide and mannitol infusion with topical prednisolone acetate to reduce the AC inflammatory reaction and subsequently underwent phacoemulsification with guarded visual prognosis (GVP) under topical anaesthesia.

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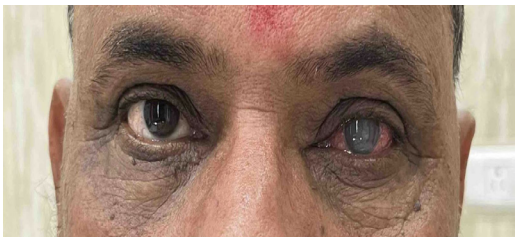

**Figure 1A:** ocular movements were full and free with lid edema on the left side

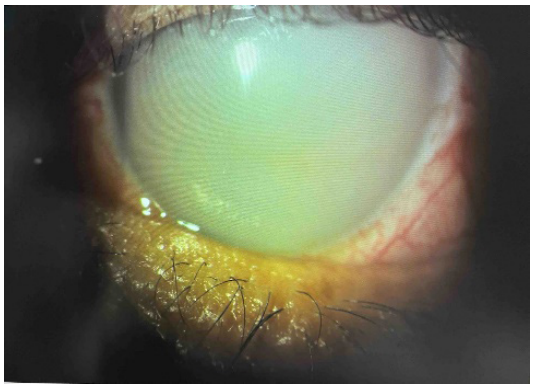

**Figure 1B:** Details of iris, pupil were not visible

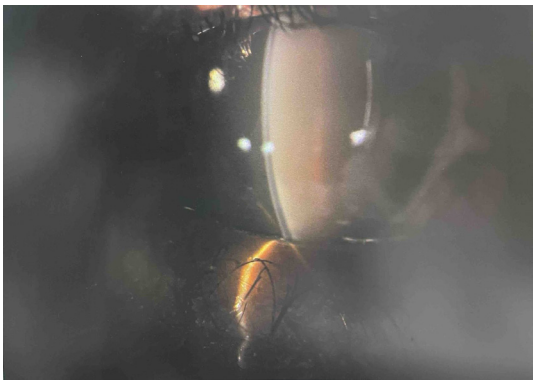

**Figure 1C:** Anterior chamber filled with whitish material

Intra-operatively, following AC wash, whitish material was seen to drain from the AC and the hypermature morgagnian cataract could be visualised through the clear cornea (Figure 3). Thus, the diagnosis of phacoanaphylactic glaucoma was confirmed. On initiating capsulorhexis, phacodonesis and a lax capsular bag were noted; however, a successful continuous curvilinear capsulorhexis was managed, phaco-chop was done, and foldable IOL was implanted in the bag. Corneal incisions were hydrated and intracameral moxifloxacin-dexamethasone was injected.

On post-op day 1, the patient had a few Descemet membrane folds, normal AC with quiet AC and IOL in the capsular bag (Figure 4). The uncorrected visual acuity (UCVA) and best corrected visual acuity (BCVA) were 6/24 and 6/18, respectively and IOP was reduced to 18 mmHg by GAT. He was discharged with post-operative topical steroids - Prednisolone acetate, topical antibiotic – Gatifloxacin and oral anti-glaucoma medication – Acetazolamide.

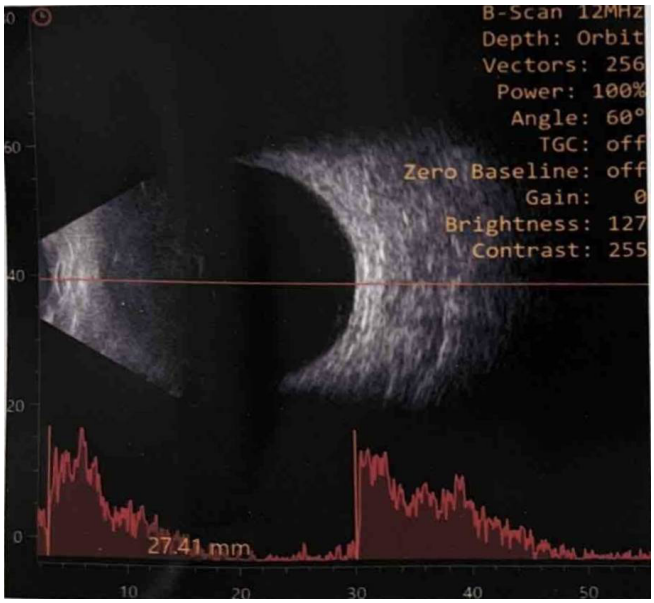


**Figure 2:** Ultrasound B Scan was done, showing a cataractous lens and a few vitreous opacities

On post-op day 7, the cornea became clear, the IOL was stable (Figure 5), UCVA and BCVA were 6/18 and 6/12-2, respectively, and 6/6 with pinhole, and IOP was further reduced to 16 mmHg by GAT.

## Discussion

Lens-induced glaucoma (LIG) is a significant cause of secondary glaucoma. It can be classified into two types: secondary angle-closure glaucoma and secondary open-angle glaucoma. The angle-closure can occur due to pupillary block (Pupillary block glaucoma), plateau iris configuration and lens (Phacomorphic glaucoma, Ectopia lentis).

In contrast, open-angle form involves blockage of the trabecular meshwork. This may be due to leakage of lens proteins (Phacolytic glaucoma), retained lens fragments following capsular rupture during cataract surgery or trauma (Lens particle glaucoma), or an immune response against lens proteins (Phacoanaphylactic glaucoma).[3]

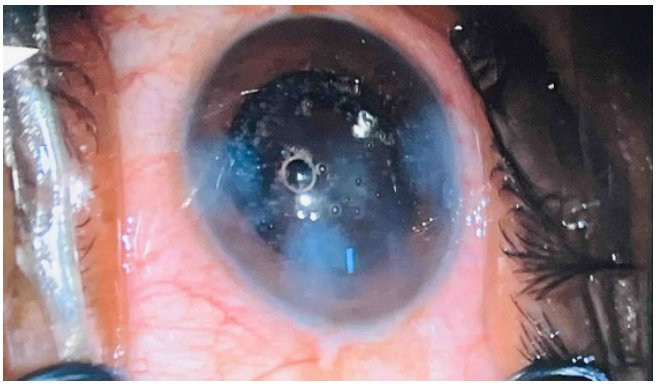

**Figure 3:** A Hypermature morgagnian cataract could be visualised through the clear cornea

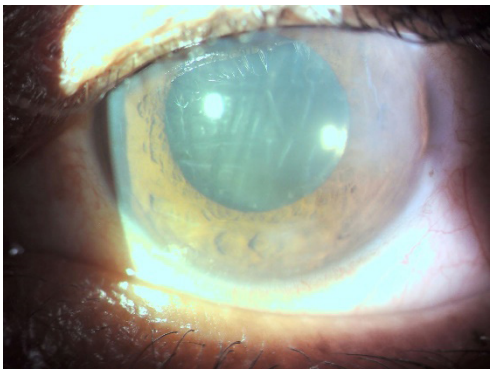

**Figure 4:** Post-op day 1

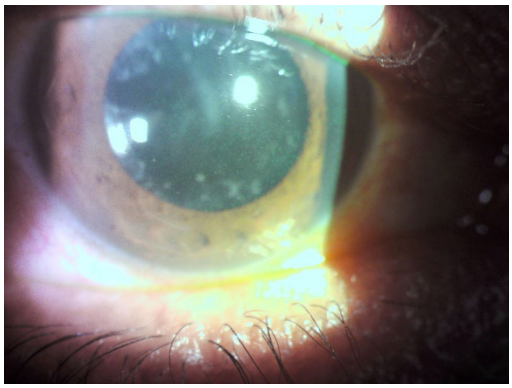

**Figure 5:** Post-op day 7

Phacolytic glaucoma is a type of secondary open-angle glaucoma in which there are microscopic defects in the capsule of a senile hypermature or Morgagnian lens, which releases lens proteins into the AC, blocking the trabecular meshwork and outflow of aqueous, leading to raised IOP. Phacoanaphylactic glaucoma is a severe form of Phacolytic glaucoma with a compromised lens capsule. It typically presents with a red, painful eye with a history of progressive vision loss, reflecting the development of a mature cataract. Key clinical features include corneal edema, elevated IOP, an open angle, a pronounced aqueous flare, and large inflammatory cells in the AC.[4]

Diagnostic evaluation should include IOP measurement using GAT, gonioscopy, and B-scan ultrasonography.[5]

Initial management involves the use of topical cycloplegics to relieve ciliary spasms and decrease the pain, topical antibiotics and topical corticosteroids to reduce inflammation, and aqueous suppressants to control IOP. Definitive treatment involves cataract extraction by phacoemulsification, manual small-incision cataract surgery (MSICS), or extracapsular cataract extraction (ECCE).

If left untreated, chronic intraocular inflammation carries a poor prognosis due to multiple complications, including corneal edema, endothelial cell damage secondary to uveitis, rubeosis iridis, cystoid macular edema, vitreous traction bands, retinal vasculitis and progression to phthisis bulbi.[6]

## Conclusion

Phacoanaphylactic/ Phacolytic glaucoma is a rare complication of mature/ hypermature cataracts that presents with ocular pain, decreased vision, cloudy cornea, and raised IOP, but it can be easily treated with proper medical and surgical management. An early presentation and prompt management may allow a good visual prognosis. Early lens extraction under adequate IOP control is the cornerstone of management.

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