



ORIGINAL RESEARCH PAPER

Ophthalmology

PSEUDOPHAKIC PUPILLARY BLOCK GLAUCOMA IN A DIABETIC PATIENT MIMICKING POSTOPERATIVE ENDOPHTHALMITIS

KEY WORDS: pseudophakia, pupillary block glaucoma, endophthalmitis, postoperative inflammation, Nd:YAG laser

Dr Rakhi Raj* IOL Fellow, Sankara Eye Hospital, Krishnankoil, Tamil Nadu. *Corresponding Author
Dr. N. Sudha CMO, Sankara Eye Hospital, Krishnankoil, Tamilnadu.

ABSTRACT **Background:** Pseudophakic pupillary block glaucoma (PPBG) is a rare postoperative complication after cataract surgery, often overlooked due to its resemblance to other postoperative inflammatory conditions such as endophthalmitis. **Case Presentation:** A 45-year-old diabetic female presented with sudden-onset headache, severe ocular pain, and loss of vision one month following uncomplicated phacoemulsification with posterior chamber intraocular lens (PCIOL) implantation. Clinical findings showed a fixed, dilated pupil with occlusion pupillae, corneal edema, elevated intraocular pressure (IOP), and a dense inflammatory membrane over the IOL. B-scan revealed few vitreous echoes without signs of endophthalmitis or malignant glaucoma. She was diagnosed with pseudophakic pupillary block glaucoma secondary to postoperative inflammation. Medical therapy with corticosteroids and IOP-lowering agents provided minimal relief. Nd:YAG peripheral iridotomy with membranectomy resulted in deepening of the anterior chamber, normalization of IOP, and improvement of vision to 6/24. **Conclusion:** PPBG may mimic endophthalmitis in the early postoperative period. A thorough slit-lamp examination and recognition of characteristic features can help differentiate these entities, preventing unnecessary interventions and facilitating timely management.

INTRODUCTION

Pseudophakic pupillary block glaucoma (PPBG) is an uncommon but serious postoperative complication following cataract surgery. Although the use of posterior chamber intraocular lenses (PCIOL) has reduced its incidence, it may still occur due to postoperative inflammation, posterior synechiae formation, or occlusion of the pupil by fibrinous membranes.

Early postoperative ocular pain and reduced vision are alarming symptoms that may indicate infectious endophthalmitis, toxic anterior segment syndrome (TASS), or secondary glaucoma. Distinguishing these entities is crucial, as the management and prognosis differ considerably. This report highlights the significance of careful clinical evaluation in differentiating PPBG from endophthalmitis.

Case Report

A 45-year-old female with a 15-year history of diabetes mellitus on irregular medication presented with sudden-onset right-sided headache, severe ocular pain, and diminution of vision in the right eye for two days, one month after undergoing cataract surgery.

She had undergone right-eye cataract extraction with PCIOL implantation one month earlier. Preoperatively, IOP was 58 mmhg, vision was 1/60, with nuclear sclerosis grade 1 and a thick posterior subcapsular cataract. Fundus view was hazy, and details were not documented. Postoperatively, vision improved to 6/18 (pinhole 6/12). The anterior segment revealed a clear cornea, quiet anterior chamber with grade 1 cells, and a well-centered IOL. Fundus examination showed a cup-disc ratio of 0.4:1 with dull foveal reflex. The patient was discharged on standard postoperative medications. Systemically, she was a known diabetic for 15 years with a history of left leg amputation three years earlier due to diabetic foot.

At one-month follow-up, vision in the right eye had reduced to hand movements close to face (HM). The patient complained of severe pain and headache. Examination revealed mild lid edema, diffuse microcystic epithelial edema with stromal haze, a shallow but quiet anterior chamber, and a fixed dilated pupil with occlusio pupillae. The PCIOL was well centered with a thick inflammatory membrane over it, and IOP was markedly elevated. The fellow eye was pseudophakic and normal. B-scan ultrasonography of the right eye revealed few vitreous dot echoes without exudates, ruling out endophthalmitis and malignant glaucoma.

A provisional diagnosis of pseudophakic pupillary block glaucoma secondary to postoperative inflammation was made. The patient received intravenous mannitol, intracameral corticosteroids, topical steroids, antibiotics, atropine, and oral steroids. Due to poor response, Nd:YAG peripheral iridotomy with membranectomy was performed. After 24 hours, the anterior chamber deepened, the membrane over the IOL retracted, corneal edema subsided, and vision improved to 6/24 with normalization of IOP.

Management And Outcome

The patient was treated with intravenous mannitol, topical and systemic corticosteroids, cycloplegics, and broad-spectrum antibiotics. Despite medical management, intraocular pressure remained high, and corneal edema persisted. Laser intervention was performed-Nd:YAG peripheral iridotomy combined with membranectomy.

Following the procedure, the anterior chamber deepened, the inflammatory membrane retracted, post Yag PI IOP was recorded as 24 mmhg and visual acuity improved to 6/24 within 24 hours. Subsequent follow-up showed resolution of inflammation and normalization of intraocular pressure.

DISCUSSION

Pseudophakic pupillary block is rare in the current era of posterior chamber IOLs but may occur due to postoperative inflammation, residual cortical matter, fibrin formation, or synechiae.

In this case, persistent inflammation in a diabetic patient predisposed to fibrin membrane formation, resulting in complete pupillary block.

Table 1: Differentiating Features Between Pseudophakic Pupillary Block Glaucoma And Postoperative Endophthalmitis

Feature	Pseudophakic Pupillary Block Glaucoma	Postoperative Endophthalmitis
Onset	Days to weeks post-surgery	Within few days post-surgery
Pain	Severe ocular and headache	Moderate to severe with photophobia
Vision	Sudden drop due to high IOP	Progressive loss due to infection
Cornea	Microcystic edema	Hazy due to exudates and inflammation

Pupil	Fixed, mid-dilated	Variable, often sluggish
AC Reaction	Mild to moderate cells, no hypopyon	Severe, with hypopyon
Vitreous	Clear or few echoes	Dense vitreous echoes
IOP	Markedly raised	Variable, often low to normal

Clinically, it can mimic endophthalmitis due to overlapping features such as pain, redness, corneal edema, and decreased vision. However, certain distinguishing features aid differentiation pseudophakic pupillary block typically presents with a quiet anterior chamber initially, a mid-dilated fixed pupil, shallow anterior chamber, and elevated IOP without hypopyon or vitreous exudates. In contrast, endophthalmitis is characterized by severe anterior chamber reaction, hypopyon, and dense vitreous echoes on B-scan.

Clinical Photographs And Imaging

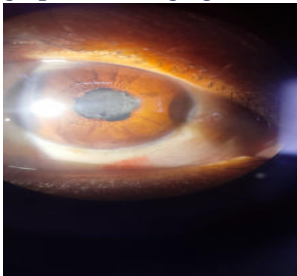


Figure 1: Slit-lamp photograph showing fixed mid-dilated pupil with inflammatory membrane over IOL.

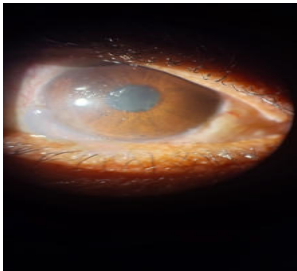


Figure 2: Post-laser photograph showing retraction of the membrane and deepening of anterior chamber.

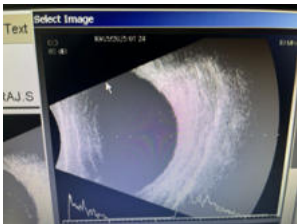


Figure 3: B-scan ultrasonography showing few vitreous echoes and no posterior pushing mechanism.

CONCLUSION

Pseudophakic pupillary block glaucoma, though uncommon, remains a critical differential diagnosis for postoperative pain and vision loss. It can closely resemble endophthalmitis, but distinct clinical features especially high IOP, quiet anterior chamber, and lack of vitreous involvement aid differentiation. Awareness of this entity, particularly in diabetic patients with exaggerated inflammatory responses, is essential to prevent irreversible damage.

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