

# A Case of Pupillary Block in Pseudophakia

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**Abstract:** Angle closure in the eye with posterior chamber IOL is relatively uncommon, due to deepening of anterior chamber. We report a case of 50 year old female with history of cataract surgery in RE 10 months back. On examination of right eye, her anterior segment showed uniformly shallow anterior chamber with presence of posterior chamber IOL. Nd:YAG peripheral iridotomy deepened the anterior chamber in this case. The probable cause for pupillary block in this case is due to position of IOL which is in the ciliary sulcus. Secondary angle closure due to pupillary block requires timely management with Nd:YAG peripheral iridotomy.

**Keywords:** Pupillary block, Posterior chamber IOL, Secondary angle closure

## 1. Introduction

Angle closure in the eye with a posterior chamber intraocular lens (IOL) is uncommon due to the deepening of the anterior chamber that occurs with posterior chamber IOL implantation [1]. However, this secondary angle closure is an important and dangerous complication that requires timely intervention to prevent irreversible vision loss. It occurs by 1 of the 2 primary mechanisms either pupillary block or aqueous misdirection, the latter is also known as malignant glaucoma.

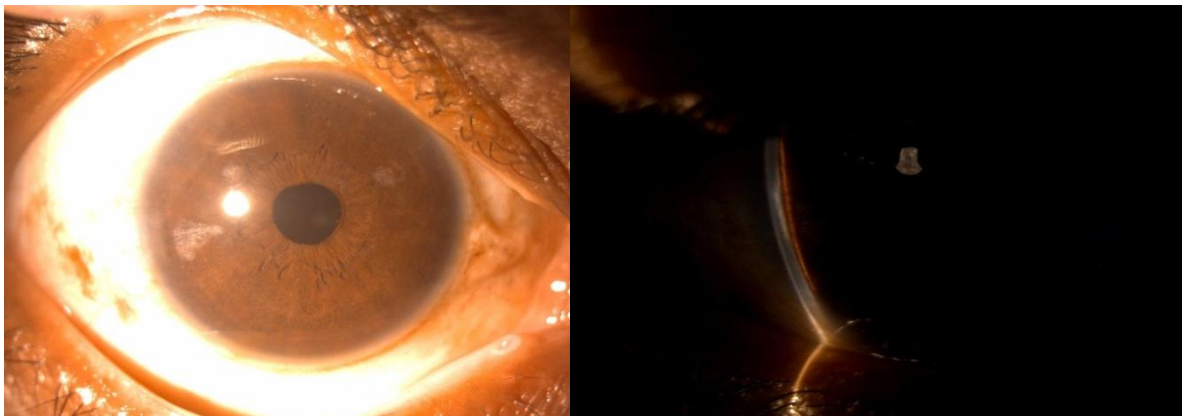
## 2. Case Report

A 50 - year - old female with medical history of diabetes mellitus for 2 years and history of cataract surgery in right eye 10 months back came for general check - up.

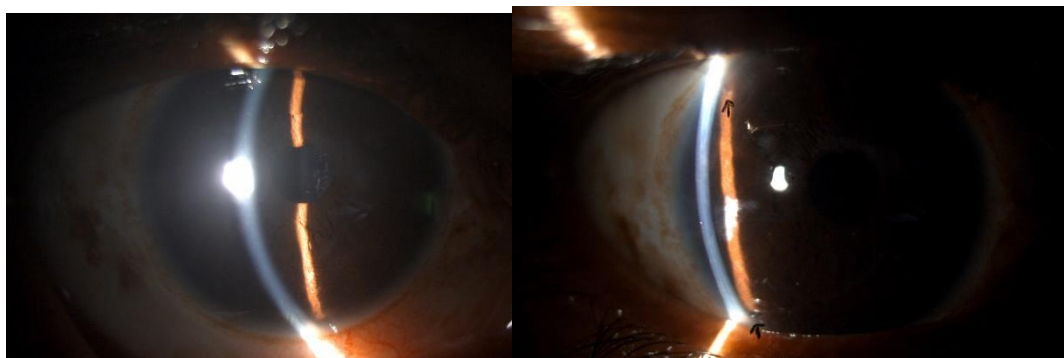
Her BCVA in RE: 6/18 with - 1.00sph 6/9, LE: 6/24.

On examination of anterior segment, her right eye showed uniformly shallow anterior chamber with posterior chamber IOL. Left eye has normal anterior chamber depth and cataractous lens. Intra ocular pressures were 18mmhg in RE and 16mmhg in LE. Gonioscopy showed closed angles in all quadrants in RE and Posterior trabecular meshwork in all quadrants in LE.

Nd: YAG peripheral iridotomy was done in RE, after which anterior chamber got deepened. Fundus examination in both eyes was within normal limits.



Anterior segment images showing Shallow peripheral anterior chamber depth (before Nd: YAG peripheral iridotomy)



Anterior segment images showing Deep anterior chamber after patent peripheral iridotomy

### 3. Discussion

It is relatively common when the pupil is occluded by the lens optic in eyes with anterior chamber intraocular lenses [2, 3], leading to peripheral iridectomy for all cases of anterior chamber IOL implantation. In posterior chamber IOL, the pupillary block may be due to excessive postoperative inflammation, with the formation of posterior synechiae and adhesions between pupillary margin and the anterior plane of IOL. It may be caused by aqueous accumulation between the posterior capsule and the anterior face of the vitreous, an alteration in the anatomy of the anterior chamber angle due to placement of the lens in the ciliary sulcus rather than in the capsular bag, or a wrong apposition, possibly due to incorrect inversed implantation of the IOL. The block can occur immediately after implantation of the posterior chamber IOL or years later. The risk is higher in diabetic patients, because of abnormal permeability of the blood - aqueous barrier and in glaucoma patients, especially those with the angle closure glaucoma [4]. The cause for the pupillary block in this case is probably due to position of the IOL which is in the ciliary sulcus. The treatment of choice is peripheral neodymium - YAG laser iridotomy which relieved the pupillary block in our case.

### 4. Conclusion

As the secondary angle closure is an important and dangerous complication it requires timely intervention to prevent irreversible vision loss. It is always preferable to place IOL in the capsular bag owing to more physiological location. But in conditions where IOL cannot be placed in bag, surgeon must create peripheral iridectomy to prevent pupillary block. Although pupillary block occurs in only a few patients after posterior chamber IOL implantation, timely management with Nd: YAG peripheral iridotomy is important to prevent further sequelae.

### References

- [1] Krawitz, Brian D. MD; Misra, Poonam MD; Bearely, Srilaxmi MD, MHS; Al - Aswad, Lama A. MD, MPH. Late - onset angle closure in pseudophakic eyes with posterior chamber intraocular lenses. *Journal of Cataract & Refractive Surgery*: December 2020 - Volume 46 - Issue 12 - p e48 - e51doi: 10.1097/j.jcrs.0000000000000442
- [2] Cohen JS, Osher RH, Weber P, Faulkner JD. Complications of extracapsular cataract surgery. The indications and risks of peripheral iridectomy. *Ophthalmology*.1984 Jul; 91 (7): 826 - 30. doi: 10.1016/s0161 - 6420 (84) 34231 - 2. PMID: 6472817.
- [3] Schulze RR, Copeland JR. Posterior chamber intraocular lens implantation without peripheral iridectomy - - a preliminary report. *Ophthalmic Surg*.1982 Jul; 13 (7): 567. PMID: 7110665.
- [4] Gaton DD, Mimouni K, Lusky M, Ehrlich R, Weinberger D. Pupillary block following posterior chamber intraocular lens implantation in adults. *Br J Ophthalmol*.2003 Sep; 87 (9): 1109 - 11. doi: 10.1136/bjo.87.9.1109. PMID: 12928277; PMCID: PMC1771845.