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A Case of Phacolytic Glaucoma with Pseudoexfoliation

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Abstract: ***A 65 year old male presented with progressive diminution of vision of left eye for 1 year and mild redness and pain of left eye for 7 days. Visual acuity was FC+ve with whitish deposits in anterior chamber, pupillary margin and anterior lens capsule with cataractous lens and raised IOP. He was treated with topical steroids and IOP lowering drugs followed by cataract extraction.. Patient was improved symptomatically with VA 6/24 and 6/12 at 1 week and 1 month and normal IOP.***

Keywords: phacolytic glaucoma, pseudoexfoliation

1. Introduction

Phacolytic glaucoma is open-angle glaucoma induced by mature or hypermature cataract. During this condition, the soluble contents of the lens leak into the anterior chamber and obstruct trabecular outflow. The lens capsule in phacolytic glaucoma appears grossly intact or occasionally shows spontaneous non-traumatic defects [1, 2, 3]

Pseudoexfoliation syndrome (PES) is an age-related systemic microfibrillopathy, caused by progressive accumulation and gradual deposition of extracellular grey and white material over various tissues [4]. It is the most identifiable cause of secondary open-angle glaucoma.

2. Case Report

- A 65 years old male Patient came in OPD with chief complains of progressive diminution of vision left eye for 1 year and mild redness and pain of left eye since 7 days. There was no H/O hupertension, diabetes, trauma, any medication or surgery.

Figure 1: Reduced palpebral aperture with congestion of left eye

Examination of left eye

- Palpebral fissure of left eye was reduced (Figure 1)
- Visual acuity was FC +ve at 1m
- Conjunctiva was congested
- Pupil was mid-dilated and sluggishly reacting, not dilated fully after application of topical mydriatics
- Whitish fibrillar material found, at pupillary margins and over anterior lens capsule (Figure 2, 3)
- Lens was opaque
- Deposition of white material at the bottom of anterior chamber was found (Figure 4)

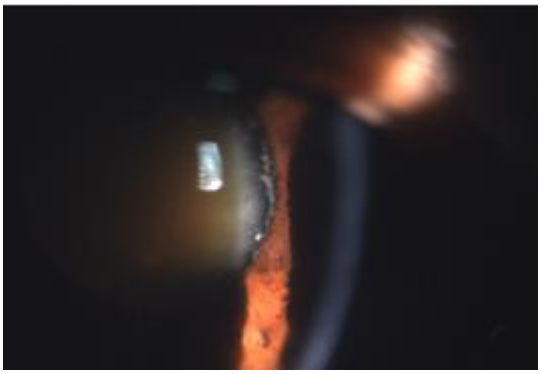

Figure 2: whitish deposit at pupillary margin

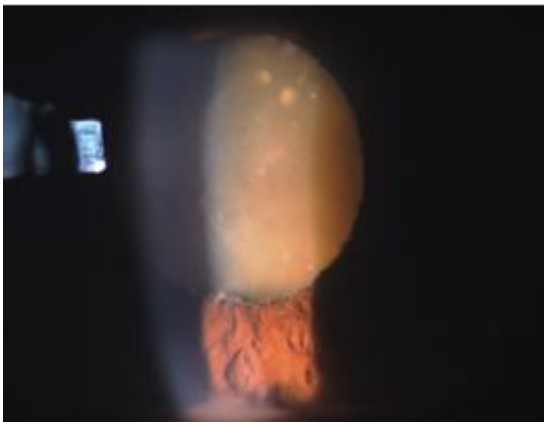

Figure 3: whitish deposit at anterior lens capsule

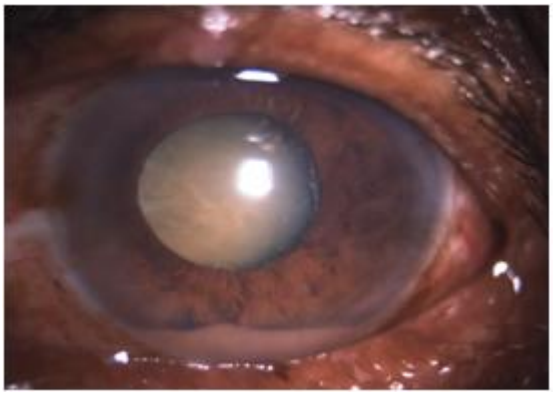

Figure 4: pseudohypopyon

- IOP was 37.2 mm of Hg at presentation
- On gonioscopy, Open angle found in 360 degree

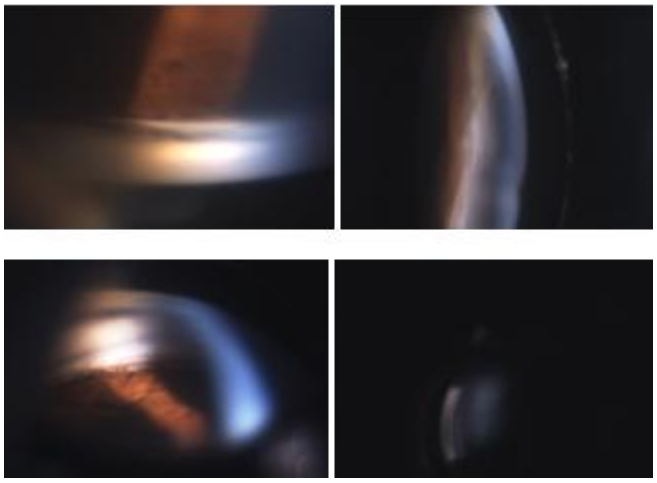

Figure 6: Open anterior chamber angle

Patient was treated medically with;

- Topical timolol maleate 0.5%, twice daily
- Topical prednisolone acetate 1%, 6 times daily
- Topical atropine sulphate 1%, thrice daily
- Tab acetazolamide 250 mg, orally, thrice daily
- Infusion mannitol 1g/kg body wt over 20-30 minutes, before surgery

Phacoimulsification with PCIOL implantation was done after lowering the IOP below 30 mm/hg and controlling the inflammation.

Visual acuity improved to 6/24 & 6/12 post-operatively at 1 week and 1 month and IOP was reduced to 14.6 mm/hg. (Figure 7)

Figure 7: post operative at 1 month

3. Discussion

- Phacolytic glaucoma (PG) is characterized by an acute rise in intraocular pressure (IOP) in eyes with advanced cataracts, associated with aqueous flare and cells. The pathogenic mechanism is microleakage of high molecular weight lens proteins through an intact anterior lens capsule causing an inflammatory response and leading to obstruction of the aqueous drainage channels by proteins, protein-laden macrophages, and inflammatory debris.[5,6,7,8] One theory suggests that after leakage of its soluble contents, the aqueous humor becomes saturated with calcium oxalate and cholesterol crystals, which are found as hyperrefringent particles in the anterior chamber. At the same time, the obstruction of the trabecular meshwork with heavy molecular weight proteins from the lens and phagocytic macrophages leads to a characteristically severe elevation in IOP [9]. Phacolytic glaucoma occurs more frequently in underdeveloped countries .Most cases resolve after cataract extraction with excellent improvement in vision .
- PEX glaucoma was first described in 1917 by Lindberg in Finland.In 2007,[10] Thorliefsson and Magnusson et al. reported that, single nucleotide polymorphisms (SNPs) in the lysyl oxidase-like protein 1 (LOXL1) gene conferred risk for PEX glaucoma.PEX syndrome is associated with deposition of abnormal fibrillary material on both ocular and nonocular tissues. PES is considered to be one of the most common causes of secondary open-angle glaucoma or ocular hypertension and early cataract development, because of its characteristics, including poor and impaired pupillary dilation, posterior synechiae, subluxation or dislocation of the lens and presence of weakened zonule[11]. Eyes with pseudoexfoliation (PXF) were shown to have a significantly greater IOP reduction than the fellow eyes without PXF after bilateral cataract surgery (Shingleton et al., 2009).A 3.5-mmHg reduction in IOP in eyes with PXF versus a 0.48-mmHg reduction in controls at 1-year postoperative endpoint, shown by Cimetta and Cimetta, in 2008.
- The definitive treatment of phacolytic glaucoma (PG) is cataract extraction. Extracapsular cataract extraction (eg, phacoemulsification) with an intraocular lens implant has largely replaced intracapsular cataract extraction as the procedure of choice.(Kayoung Yi et al., 2015)

4. Conclusion

- This case was unique in respect to that, there was pseudo-exfoliated material along with mature cataract and elevated IOP and the patient presented with a short history of 7 days of pain and redness. So, conclusion is that this type of cases should be managed surgically with cataract extraction and follow-up. If IOP is not decreased in post-operative period and vision deteriorates further then we should go for trabeculectomy.

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