Original Research Paper

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PSEUDOEXFOLIATION SYNDROME: A CASE REPORT

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ABSTRACT Pseudoexfoliation syndrome (PXF) is a common age-related systemic condition with prominent ocular manifestations, often posing significant challenges during cataract surgery due to associated zonular weakness and poor pupillary dilation. Not only is PXF associated with the formation of dense nuclear cataracts, it is also well known that those presenting with PXF are at a higher risk of developing complications during, and even after, cataract surgery (1). There is a growing number of genome-wide association studies in different populations around the world to identify genetic factors underlying exfoliation syndrome. Besides variants in LOXL1 and CACNA1A genes, new loci have been recently identified which are believed to be associated with exfoliation syndrome.(4) There is increasing evidence for an etiological association of pseudoexfoliation syndrome with cataract formation, and possibly with retinal vein occlusion.(5) We present a case of a 69-year-old male from Uttar Pradesh with unilateral gradual diminution of vision, diagnosed with PXF and nuclear sclerosis grade 3 cataract. The patient had undergone prior laser peripheral iridotomy and was on topical steroids and antibiotics. On examination, classical features of PXF were noted including a whitish-grey flaky material at the pupillary margin and phacodonesis. Intraocular pressure was within normal limits but corrected IOP indicated borderline elevation. The patient was planned for cataract extraction with intraocular lens (IOL) implantation. This case emphasizes the importance of recognizing PXF in preoperative assessment to anticipate surgical complications and optimize postoperative outcomes.

KEYWORDS : Pseudoexfoliation syndrome, Intraocular lens, Phacodonesis

INTRODUCTION

Pseudoexfoliation syndrome is a fibrillopathy characterized by the production and progressive accumulation of whitish-grey extracellular fibrillary material in ocular and extraocular tissues. It is a significant cause of secondary open-angle glaucoma and a known risk factor for complications during intraocular surgeries, especially cataract surgery. First described in 1917 by Lindberg, PXF has since been widely recognized due to its global prevalence and clinical significance. This condition is commonly observed in elderly individuals and can often be unilateral initially, though bilateral involvement usually follows. The hallmark of PXF in the eye is the deposition of pseudoexfoliative material on the anterior lens capsule, iris, pupillary margin, and trabecular meshwork. The surgical outcome of using phacoemulsification in the central zone, inducing minimal stress on the zonules, inserting a capsular tension ring in selected cases, and stretching the pupil mechanically in eyes with miotic pupils, may turn out to be uneventful in most cases. (2)

In this presentation, we report a case of a 69-year-old male with unilateral PXF and advanced nuclear sclerosis, highlighting the clinical features, diagnostic approach, and surgical consideration.

Figure 1: Shallow Anterior Chamber with Van Herick grading 2.

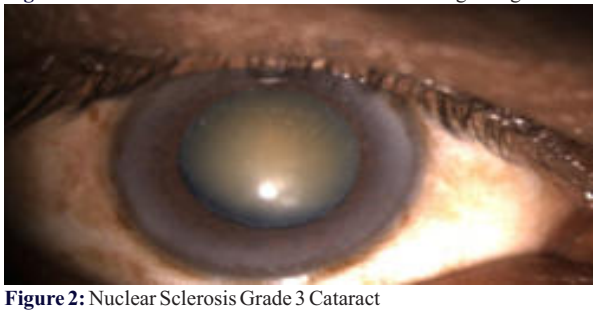

Figure 2: Nuclear Sclerosis Grade 3 Cataract

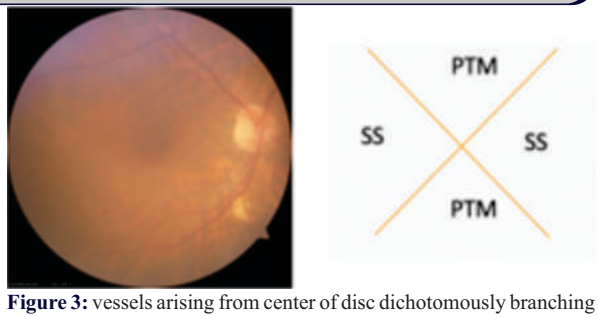

Figure 3: vessels arising from center of disc dichotomously branching maintaining arteriovenous ratio 2:3 and retinal pigment epithelial atrophy inferotemporal to disc.

Table – 1: Visual Acuity Of Both Eye Cross And Retinoscopy Value

VA	OD	OS
UCVA	2/60	2/60
with PH	6/24p	6/24
BCVA	6/18p	6/18
NEAR VISION	+2.50 DS	+2.50 DS

Table – 2: Ocular Examination

	UCVA	SPH	CYL	AXIS	BCVA
OD	2/60	+0.25	-		6/18p
OS	2/60	-3.00	-		6/18

Table - 3: OD

	OD
LIDS	Normal, no trichiasis or distichiasis noted.
CONJUNCTIVA	Normal, no congestion or chemosis
CORNEA	Dense arcus normal in size, shape, curvature transparency, lusture and intact sensation in all quadrant.
ANTERIOR CHAMBER	VH2
IRIS	Brown in colour, single, patent Laser PI at 10 o' clock
PUPIL	Single, central, circular, pharmacologically dilated
LENS IOP with GAT @ 11 am (mmHg)	Cataractous with nuclear sclerosis grade 3, mild phacodonesis, a ring of whitish grey flaky material present on periphery of lens14 mmHg

CCT (um)	509 um (corrected iop = 18mmhg)
Table – 4: Anterior Segment Finding Of OS	
	OS
IRIS	**Normal in colour and pattern**
PUPIL	**Single, central, circular, pharmacologically dilated**
LENS IOP GAT@ 11 am	**Cataractous with nuclear sclerosis grade 2 16 mmHg,**
CCT(um)	**510 um (corrected iop= 18mmhg)**
	OS
EYELIDS	Normal, no trichiasis or distichiasis noted.
CORNEA	Normal, no congestion or chemosis
CONJUNCTIVA	Dense arcus, normal in size, shape, curvature transparency, lusture and intact sensation in all quadrant.
ANTERIOR CHAMBER	VH3

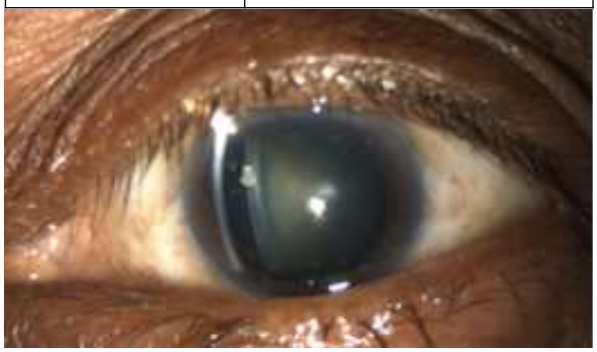

Figure 4: Anterior segment – shows VH grade 3, and nuclear sclerosis grade 2 cataract

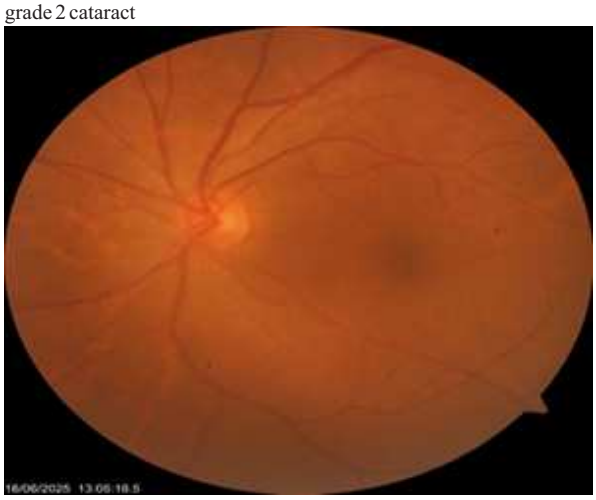

Figure 5: OS - cdr 0.3, mild pallor, the vessels arising from the center of the disc dichotomously branching maintain an arteriovenous ratio of 2:3. Foveal reflex- dull, drusens at macula

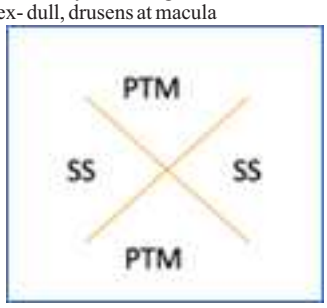

Figure 6: GONIOSCOPY FINDINDS-OS

INTERPRETATION

This case presents a 69-year-old male with unilateral gradual diminution of vision over the past year, eventually diagnosed as Pseudoexfoliation Syndrome (PXF) with nuclear sclerosis grade 3 cataract. The patient had previously undergone bilateral laser peripheral iridotomy, suggesting narrow angles or prophylactic treatment for angle-closure risk. However, slit lamp examination revealed classical signs of PXF, including a whitish-grey flaky material at the pupillary margin, nuclear sclerosis, and mild phacodonesis-indicating zonular weakness.

Despite a normal intraocular pressure on Goldmann applanation tonometry (14 mmHg), the corrected IOP (18 mmHg) and optic disc findings (CDR 0.3 with mild pallor) necessitate vigilance for potential glaucomatous damage. PXF is often underdiagnosed and can be misinterpreted as routine senile cataract unless detailed slit lamp evaluation is performed.

The presence of exfoliative material, shallow anterior chamber (VH grade 2), and zonular instability strongly influenced the surgical planning. Anticipating intraoperative challenges such as poor pupillary dilation and potential zonular dialysis, the patient was advised cataract extraction with IOL implantation under close intraoperative precautions. The importance of thorough preoperative assessment in such cases cannot be overstated.

CASE SUMMARY:

A 69-year-old male resident of Biswan, Uttar Pradesh, farmer by occupation of middle socio-economic status, came with diminution of vision in both eyes for 1 year. He was apparently asymptomatic 1 year back, when he noticed diminution of vision in both eyes for distance and near. It was gradual in onset and progressive in course. No history of any redness or pain. No history of coloured halos. No history of trauma. No history of diabetes, hypertension, tuberculosis, asthma, or any other systemic illness.

Personal History: Vegetarian by diet and no history of any addiction.

Family History: No history of such complaints in the family.

Surgical History: History of laser peripheral iridotomy in RE14 days back at Sitapur Eye Hospital, Sitapur.

Drug History:

- e/d Gatilox-DM (dexamethasone 0.1% + gatifloxacin 0.3%) – 4 times/day, 14 days back, in both eyes for 7 days, with tapering per week.
- T. Diamox (acetazolamide 250 mg) BD for 2 days.
- Management- the case was managed by. Phacoemsulsification with iol implantation.

CONCLUSION:

Pseudoexfoliation Syndrome is a significant cause of secondary open-angle glaucoma and surgical complications, especially in elderly patients presenting with cataract.

Classical features such as flaky deposits on the pupillary margin, phacodonesis, and shallow anterior chambers must alert the clinician to potential intraoperative difficulties.

Preoperative identification of PXF is crucial in tailoring the surgical approach, anticipating zonular instability, and ensuring safe cataract extraction.

The immunohistochemical demonstration of lysosomal enzymes within pseudoexfoliation aggregates indicates that proteolytic mechanisms facilitate zonular disintegration. Ophthalmologists treating eyes with pseudoexfoliation syndrome should be aware of these alterations.(3)

Regular follow-up post-surgery is essential to monitor intraocular pressure and detect early glaucomatous changes.

Comprehensive ocular evaluation, including gonioscopy and fundus examination, is vital in all elderly cataract patients to detect co-existing PXF.

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