

Clinical profile of cataract patients with pseudoexfoliation

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Abstract

Introduction: Pseudoexfoliation (PEX) syndrome is an idiopathic, generalized disorder that is characterized by the accumulation of fibrillar extracellular material in ocular tissues.¹ PEX predisposes to a number of ocular co-morbidities, the most severe being glaucoma. **Aims:** To study the clinical profile of cataract patients with pseudoexfoliation. **Materials and methods:** It is Cross sectional observational study in department at tertiary care centre, for a period 24 months. patients who are attending the ophthalmology out patient diagnosed as pseudoexfoliation with cataract who fulfilled the inclusion criteria were included in the study. **Results:** In this study of clinical profile of cataract patients with pseudoexfoliation have shown incidence in PXF mostly seen in 7th decade in age group of 61-70years. PXF incidence seen predominantly in male in comparison to female gender. Bilaterality is predominant occurrence seen in comparison to unilateral involvement of PXF. Most of eyes have shown IOP in normal range of 14-21 mm of Hg with 27 % of eyes showing raised IOP (more than > 21mm of Hg) . Open angle status was the predominant type in observed eyes in this study followed by occludable angles. In this study only 19% of eyes have shown association with glaucoma, remaining eyes were without glaucoma . Nuclear sclerotic cataract with 63% of eyes was found to be predominant in this study in which 47% were NS Gr 2 to 3 followed by 23% mixed cataract. **Conclusion:**The early detection and effective management can reduce the morbidities associated with pseudoexfoliation.

Keywords: cataract, pseudoexfoliation, glaucoma.

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Introduction

Pseudoexfoliation (PXF) syndrome is an age-related systemic disease with primarily ocular manifestations characterized by deposition of whitish grey, fibrogranular amyloid like material on the anterior lens capsule, zonules, ciliary body, pupillary margin of the iris, corneal endothelium, anterior vitreous and trabecular meshwork[1]. The prevalence of exfoliation increases dramatically with age and varies considerably among populations worldwide. The tremendous variation in prevalence of exfoliation syndrome is caused by true differences in the populations studied, but it may also vary because of other factors such as differences in age, environmental influences, definition of exfoliation syndrome, and examination techniques[2]. Exfoliation syndrome is more common in older age-groups, with most cases occurring in the late 60s and early 70s. The condition may be unilateral or bilateral, and over half of unilateral cases become bilateral over a 20-year period . Geographic distribution patterns may be explained by regional gene pools or by environmental influences. Differences in altitude and ultraviolet light exposure have been suggested, but the evidence to date for either factor is marginal . There is no clear relation between exfoliation syndrome prevalence and sex. The percentage of exfoliation syndrome patients with glaucoma is different for every population. The prevalence may range from 0.4% to 3.8% in south India[3]. Nuclear cataract and secondarily subcapsular cataract are more frequently found in eyes with PXF than in eyes without PXF. Overall, studies indicate about

40% of exfoliation syndrome patients will develop glaucoma . The reported prevalence of exfoliation syndrome among patients with open-angle glaucoma also shows considerable geographic variation. PXF is often associated with cataract and glaucoma . Cataract surgery in these cases is prone to intra and post operative complications. More large-scale, population-based studies need to be conducted to evaluate the various factors associated with pseudoexfoliation. The purpose of the current study was to document the ocular clinical profile of cataract patients with pseudoexfoliation .

Materials and methods

It is Cross sectional observational study in department at tertiary care centre, Sarojini Devi Eye Hospital, Hyderabad, Telangana for a period 24 months. patients who are attending the ophthalmology out patient diagnosed as pseudoexfoliation with cataract who fulfilled the inclusion criteria were included in the study.

Inclusion Criteria: Patients diagnosed as pseudoexfoliation with cataract.

Exclusion Criteria: Traumatic cataract patients, Patients with dislocated and subluxated lens, Ocular disorders other than pseudoexfoliation and Patients already taking anti glaucoma medications.

The study population consists of 50 patients and Informed consent of all patients was taken. Detailed history of all patients was taken including chief complaints, history of present illness, family history, ocular history, personal history, drug history, systemic history. Visual acuity was measured using Snellen's chart. Detailed anterior segment examination was done using slit lamp biomicroscope. IOP was measured using Goldmann applanation tonometer. Gonioscopy was done using Goldmann 4 mirror lens. Disc evaluation was done using 90D lens and slit lamp biomicroscope.

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Results

The data was collected from 50 patients who attended ophthalmology out patient department at tertiary care centre with a complaint of

diminution of vision and on examination who had cataract and pseudoexfoliation.

Table 1 : Demographic Distribution

Age Group(Yrs)	No.Of Patients	Percentage
<50	3	6
51-60	14	28
61-70	27	54
71-80	6	12
TOTAL	50	100
Gender		
Male	28	56
Female	22	44
Laterality of PXF		
Bilateral	30	60
Unilateral	11	22
	9	18

In this study the highest prevalence of PXF was in 7th decade 54%(n=27) in cataract patients . In our study prevalence of PXF with cataract was more in males 56%(n=28) than females 44% (n=22). In our study PXF with cataract was found to be more in bilateral 60%(n=30) than unilateral 40%(n=20), out of which 11 were right eye and 9 were left eye.

Table 2: IOP and angle measurement in PXF with cataract

IOP Range (mmof Hg)	No.Of Eyes	Percentage
14-21	56	56
<14	17	17
>21	27	27
TOTAL	100	100
Angle status		
Wide open	6	6
Open	66	66
Occludable	25	25
Closed	3	3

In this study it was observed that most of measured IOP in the range of 14-21 with 56%. In our study , open angle eyes were observed to be 66% followed by occludable and least was closed angle eyes.

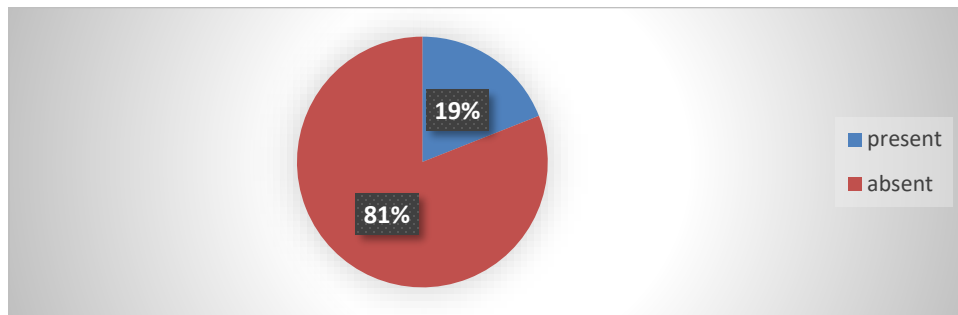


Fig 1: Incidence of glaucoma in PXF with cataract eyes

It was observed that incidence of glaucoma was 19% in 100 eyes of PXF with cataract patients.

Table 3: Stage of cataract in PXF patients

Grades Of Cataract	No.Of Eyes	Percentage
NS GR-1	08	8
NS GR-2	29	29
NS GR-3	18	18

NS GR-4	08	8
Mature	04	4
Hyper Mature	02	2
Psco	03	3
Mixed	24	24
Total	100	100

In this study, incidence of nuclear sclerosis cataract was found to be more with highest prevalence of grade -2 noticed in 100 eyes of PXF.

Discussion

The prevalence of exfoliation increases dramatically with age and varies considerably among populations world wide. The variation in prevalence is caused by true differences in the populations studied, but it may also vary because of other factors such as differences in age, environmental influences and examination techniques. There is no clear relation between exfoliation syndrome prevalence and sex according to shields et al. The percentage of exfoliation syndrome patients with glaucoma is different for every population. 50 cataract Patients with PXF were included based on inclusion & exclusion criteria. PXF in cataract patients was observed more common in age group of 61-70yrs with incidence of 54% followed by 28%, 12%, 6% in age group of 51-60yrs, 71- 80yrs, < 50 yrs respectively. This finding was comparable with findings of study done by MB Dongre et al. who found incidence of PXF patients between the age group 60-69 yr was 57.6% [1]. C.N. Guptha et al[4]found the peak incidence of PXF in cataract patients was 47.5% in age group of 61-70yrs. Yeshigeta et al[5] found incidence of PXF patients above the age of 60 yrs was 68.8%. Mohamed jawed et al[6]studied in 200 eyes, was found the incidence of PXF was more in age group of 60-69 yrs (37%). In this study, 56% (n=28) were male and 44%(n=22) were females this findings were comparable with results of MB Dongre et al[1] who found 59% males, 41% females, CN Guptha et al⁷ found 55% males and 45% females. B.C Hemalatha et al[8] concluded that 64% males and 36% females. While Aravind et al[3]reported no sex predilection. Mohammed jawadet al[6]found 84% males 16% females. In our study, incidence of PXF was predominantly seen in males compared with females as similar to other studies. This might be due to the fact that males seek medical attention (due to cataract) more than females.

In this study laterality of PXF was found 60% bilaterally and 40% unilaterally, out of which 22% were RE and 18% were LE. Aravind H et al³ concluded 50.9% bilateral 49.9% unilateral involvement. Ahmed F Gabr et al⁹ found 53.13% bilateral 46.5% unilateral PXF incidence in cataract patients. Many studies have reported bilateral to be more common than unilateral while CN Guptha et al⁷. have reported unilateral involvement to be predominant(59.2%) than bilateral involvement (40.8%).

In this study 56% of eyes measured IOP was in the range of 14-21 mm of Hg, which comparable with the study of MB Dongre et al¹ 86%. while 27% had increased IOP(>21 mm of hg) in our study which was comparable to Yeshigeta and yemariamwork T[5], found Increased IOP in 28.5% of their patients. Aravind H et al reported 16.7% pseudoexfoliation had high intraocular pressure (>21 mm Hg). In our study average IOP was 18.58 mm of Hg, which was comparable to CN Guptha et al[7] in which average IOP was 17.38 mm of Hg and Thomas et al found mean IOP in 10293 subjects was 24.14mm of Hg. Open Angle status in this study was 66% followed by 25% occludable angle, 6% wide open angle, 3% closed angle, in comaparision to Layden and Schaffer, who reported a 23% prevalence of narrow angles in 100 patients with PXF. Wishart et al[10]reported 18% occludable angles in their 76 patients with PXF and Ahmed F Gabr et al⁹ concluded naarow angle 11.98% in PXF patients. Swetha s Philip et al[11] found open angles in 98.1% of eyes and 1.9 % occludable angles. Nirmalkumarsasmal et al[12] reported in West Bengal, 92.0% of the eyes showed open angle and rest 8.0% had occludable angles. Aravind et al reported 14.8%

prevalence of narrow angles in with PXF, which is twice the prevalence in our population without PXF. Many studies did not include gonioscopy routinely on all subjects. In addition to differences in study design and target populations, variations between previous studies and our study may have been the result of differences in the definition of narrow angles, miotic use in the earlier days when these studies were reported, and true differences in the prevalence of angle closure between the populations. PXF is associated with cataract and glaucoma, is the most common identifiable form of secondary open-angle glaucoma worldwide. In this study 19% of eyes were associated with glaucoma, 81% eyes not associated with glaucoma. BC Hemalatha et al[8] concluded out of 50 PXF patients 5 people found to have glaucoma. Navinsoni et al[13]found 10.42% incidence of glaucoma in patients with PXF, according to Thomas R et al[14] reported incidence of 5.5% of glaucomain PXF patients. Krisnamadas et al[15]concluded 26.7 % of PXF in glaucoma patients and 7.5% glaucoma in PXF patients. Aravind H et al[13] reported 13% had pseudoexfoliation glaucoma. PXF syndrome has been known to be associated with a greater prevalence of cataract though the exact aetiology of this association is not known. Nuclear sclerotic cataract with 63% of eyes was found to be predominant in this study, in which 47% were NS Gr 2 to 3, followed by 23% mixed cataract. These findings comparable with BC Hemalatha et al⁸ who reported 80% had nuclear sclerosis. Most of them had grade 2 to 3, 20% had cortical cataract and both changes were seen in 30% of cases. Sandeep k et al found 4% of the patients had nuclear sclerosis grade1, 24% had NS grade 2 cataract, 30% had NS grade 3, 38% had mature cataract and 4% had hypermature cataract[16]. MB Dongre et al 38% eyes nuclear cataract, Navinsoni et al 73.93% eyes were nuclear cataract[13], Ahmed F Gabr et al[9]found 23% as nuclear cataract. However, Pranathi et al. observed that combined form of cataract was the most common form occurring in PXF syndrome[17].

Conclusion

The study concluded the need for early diagnosis and various complications involved in pseudoexfoliation. The prevalence and complications of pseudoexfoliation are increasing in the population. It is common in older people hence the need for awareness of pseudoexfoliation is more. Delay in seeking medical attention leads to various comorbidities. The early detection and effective management can reduce the morbidities associated with pseudoexfoliation.

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