

Anterior chamber depth in eyes with pseudoexfoliation

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SUMMARY The depth of the anterior chamber was measured in 34 eyes with pseudoexfoliation but without glaucoma and in 334 normal controls. No significant difference was found.

Angle-closure glaucoma is likely to develop in eyes with shallow anterior chambers and narrow angles.¹ Primary angle-closure glaucoma is thought to be rare and to occur by chance association in eyes with pseudoexfoliation.²⁻⁶ Glaucoma with pseudoexfoliation may, however, present with symptoms suggesting angle closure,⁷ have a high incidence of narrow angles⁸—perhaps caused by phospholine iodide—or be associated with pupil block⁹ or iridocapsular block.^{10 11}

The anterior chamber depth is similar in eyes with primary open-angle glaucoma and glaucoma associated with pseudoexfoliation^{12 13} and in eyes with and without pseudoexfoliation¹⁴—in an admittedly small sample.

This paper presents the results of comparisons between the anterior chamber depths of non-glaucomatous eyes with and without pseudoexfoliation.

Material and methods

The anterior chamber depth of 334 normal eyes and 34 eyes with pseudoexfoliation was measured on a randomly chosen sample during an epidemiological survey of the Negroes of Pondoland, South Africa (this survey is fully reported by Bartholomew¹⁵). Measurements were made with the Goldmann pachymeter attached to the Haag-Streit slit-lamp on right eyes only and excluded those with glaucoma. The corneal thickness and the combined depth of cornea and anterior chamber were measured. The anterior chamber depth was then obtained by subtracting the corneal thickness from the combined measurement. The mean of 3 readings was recorded.

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Table 1 *Anterior chamber depths in 334 normal eyes without pseudoexfoliation by age and sex*

Age group	Males			Females			Significance levels	
	No.	Mean (mm)	SD	No.	Mean (mm)	SD	t	2P
40-49	44	2.74	0.29	44	2.61	0.24	2.17	<0.05
50-59	48	2.73	0.23	40	2.49	0.28	4.00	<0.001
60-69	39	2.61	0.30	36	2.52	0.29	1.32	>0.05
70+	44	2.60	0.32	39	2.51	0.32	1.31	>0.05

Table 2 *Anterior chamber depths in 158 normal eyes and 34 eyes with pseudoexfoliation*

	Pseudoexfoliation			Normal			Significance levels	
	No.	Mean (mm)	SD	No.	Mean (mm)	SD	t	2P
Males	17	2.58	0.36	83	2.60	0.30	0.21	>0.8
Females	17	2.46	0.32	75	2.51	0.30	0.59	>0.5

Results

The anterior chamber depths of the control sample are shown in Table 1.

There was a decrease in anterior chamber depth with increasing age for men ($t=2.15$, $P<0.05$) and for women ($t=1.6$, $P>0.05$). The chamber depth was greater in men than women for those between 40 and 59 years of age but was not significantly different in those over 60 years of age.

The anterior chamber depths in eyes with pseudoexfoliation were all measured in persons over 60 years of age and are shown separately for men and women in Table 2. The measurements are compared with those from controls over 60 years of age.

The observed differences were very small and not statistically significant.

Discussion

There was no significant difference in the depth of the anterior chamber of eyes with or without pseudoexfoliation. This confirmed the findings of Forsius *et al.*¹⁴ It is unlikely that eyes with pseudoexfoliation have the anatomical predisposition of a shallow anterior chamber, which is common in primary angle-closure glaucoma.

If angle closure does develop in association with pseudoexfoliation, some other mechanism must be responsible, as suggested by Herbst,⁹ Bartholomew,¹⁰ and Dark.¹¹

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