# CLINICAL CONSULTATION

The Clinical Consultation section is offered as an educational exercise under the direction of Etty Bitton, OD, MSc, École d'optométrie, Université de Montréal, Montreal, Quebec. It is intended to be a continuing forum wherein we as optometrists share our views and opinions with our colleagues. In this issue, Jules Plante, OD provided the case report and the questions that accompany it; Pierre Forcier, OD and Richard Trevino, OD commented on the case.

**CASE REPORT**

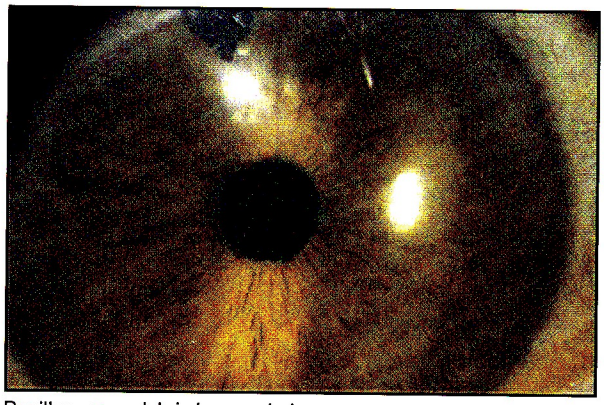
**Pupillary Zone Debris in an Aphake**

A 74-year-old patient is consulting for a routine eye examination. His last eye examination was performed five years ago at which time spectacles were prescribed (OD: +12.50-2.25 x 80 and OS: +11.50-1.75 x 100, add 2.50).

The systemic history is positive for systemic hypertension controlled with a diuretic and the patient reported that a bilateral intracapsular cataract extraction was performed 15 years ago.

Best corrected visual acuity is 6/9 OD and OS. Ophthalmoscopic findings are showing a 0.6 C/D ratio for both eyes, arteriolar narrowing and discrete pigmentary disturbance in both macular zones. Applanation tonometry indicates 23 and 27 mmHg on OD and OS, respectively.

Both anterior segments reveal peripheral iridectomy and dandruff-like material in the anterior chamber and on the pupillary margin, as seen in the accompanying photograph.



Pupillary zone debris in an aphake

**Questions**

1) What supplemental testing is necessary to manage this case?
2) What is your diagnosis?
3) Describe your clinical management?

**Pierre Forcier, OD, MSc**
École d'optométrie, Université de Montréal
Montreal, Quebec

The figure clearly shows an iridectomy following an intracapsular cataract extraction as well as many small grayish deposits with a fibrillar appearance in the pupillary zone. Some material also appears to be present along the border of the pupil.

A gonioscopic evaluation is recommended to determine if the debris has accumulated in the trabecular meshwork. A threshold central visual field would be important to detect any visual field loss. At this time, photodocumentation of the optic nerve head (ONH) would offer a baseline comparison for future visits. A stereoscopic evaluation of the ONH would be necessary to rule out any notching and/or palor of the ONH.

The tentative diagnosis at this time is Presumed Exfoliation Glaucoma in an aphakic patient. This diagnosis is based on the age of the patient since exfoliation is rarely seen before the age of 60. The elevated IOP with large cup-to-disc ratio invokes the possibility of glaucoma. A more detailed evaluation of the ONH as described above is essential for the diagnosis.

Due to the elevated IOP levels and the increased risk of developing glaucoma with a pseudoexfoliation syndrome, I would recommend that this patient be put on B-blocker medication and followed up every six months. Photodocumentation would be advisable in order to follow any structural changes in the ONH. If the IOP is not stabilized or if any structural changes become evident, pilocarpine can be included in the management regimen. If these options are unsuccessful, Argon Laser Trabeculoplasty can be envisioned.

It is evident that patient education is important in the management of this case.

## REFERENCES


Kaufmann PL, Mittag TW. Glaucoma: Textbook of ophthalmology, Vol 7. St.Louis: Mosby, 1994.

Fraunfelder FT, Roy FH. Current ocular therapy 4. Philadelphia: W.B. Saunders Company, 1995.


---


**Richard Trevino, OD**
Kaiser Permanente Woodbridge Medical Center
Woodbridge, Virginia


We are presented with a 74-year-old man with a 15-year history of bilateral aphakia and recently discovered elevated IOP. He has peripheral iridectomies and there is "dandruff-like" material in the anterior chambers of each eye. He has moderately large optic cups, mild hypertensive retinal vascular changes, and bilateral macular pigmentary disturbances.

At issue is whether this patient has glaucoma, and, if so, in what form. A perimetric examination will detect any glaucomatous visual field loss and determine the need for therapy; the reported pressures are not high enough to warrant treatment in the absence of field damage. Gonioscopy ought to be performed to rule out angle-closure secondary to peripheral anterior synechia. In the presence of a functioning peripheral iridectomy, angle-closure secondary to pupil block is extremely rare.[1] Open-angle mechanisms of glaucoma should be considered if gonioscopy reveals an open angle with normal landmarks.[1]

The dandruff-like material in the anterior chambers of this patient could represent free particles of lens cortex, postoperative inflammatory debris, or the grayish flecks associated with exfoliation syndrome; each of these may be responsible for elevated IOP. Lens particulate matter and inflammatory cells may block the pores of the trabecular meshwork and are common causes of postoperative pressure elevation.[1] However, if this patient underwent uneventful intracapsular cataract extraction, it is unlikely that there would be significant amounts of lens cortex or inflammatory debris in the anterior chambers. Therefore, this patient probably has exfoliation syndrome.

Exfoliation syndrome, rarely seen in patients younger than 60 years of age, is a fibrillopathy characterized by the production and deposition of glycoprotein fibers in the anterior segment of the eye. In addition to its location in ocular tissues, exfoliative material has been identified in the skin and visceral organs of patients with exfoliation syndrome suggesting that this disorder is an ocular manifestation of a systemic disease.[2] Exfoliation syndrome is diagnosed clinically by the presence of grayish flakes of exfoliative material on the lens, the iris, the corneal endothelium, and in the angle of the anterior chamber.[3]

Other signs of exfoliation syndrome include loss of the pupillary ruff, iris transillumination defects, particulate pigment deposition on the iris, corneal endothelium, and trabecular meshwork. The occurrence of exfoliation syndrome in aphakia and pseudophakia has been reported.[4,5] Exfoliation syndrome is of clinical significance because it is often accompanied by elevated IOP. A study of 100 consecutive patients with exfoliation syndrome found 22% had elevated IOP, one-third of whom had glaucomatous damage.[6] Patients with exfoliation glaucoma often have a more severe clinical course than patients with primary open-angle glaucoma.[7]

Provided that no glaucomatous optic nerve or visual field damage is present, this patient could be monitored biannually. Perimetry may be performed every 12 to 24 months and ophthalmoscopy through dilated pupils performed annually. Photographs of the optic discs are always valuable when monitoring patients with glaucoma or ocular hypertension. Exfoliative glaucoma is treated in the same fashion as primary open-angle glaucoma, but is usually more resistant to medical therapy.[7] Careful follow-up is mandatory.

## REFERENCES


1. Tomey KF, Traverso CE. The glaucomas in aphakia and pseudophakia. Surv Ophthalmol 1991; 36: 79-112.
2. Schlotzer-Schrehardt UM, Koca MR, Naumann GOH, Volkholz H. Pseudoexfoliation syndrome: Ocular manifestation of a systemic disorder? Arch Ophthalmol 1992; 110: 1752-1756.
3. Prince AM, Ritch R. Clinical signs of the pseudoexfoliation syndrome. Ophthalmology 1986; 93: 803-807.
4. Chen V, Blumenthal M. Exfoliation syndrome after cataract extraction. Ophthalmology 1992; 99: 445-447.
5. Caccamise WC. The exfoliation syndrome in aphakic eyes. Am J Ophthalmol 1981; 91: 111-112.
6. Kozart DM, Yanoff M. Intraocular pressure status in 100 consecutive patients with exfoliation syndrome. Ophthalmology 1982; 89: 214-218.
7. Tarkkanen A. Exfoliation syndrome. In: Fraunfelder FT, Roy FH, eds. Current ocular therapy, 3rd ed. Philadelphia: W. B. Saunders, 1990.