Recurring Iris Pigment Epithelial Cyst Induced by Topical Prostaglandin F₂α, Analogues

Iris cysts are usually classified as primary or secondary. Secondary cysts may be caused by uveitis, surgery, trauma, or miotics. Four cases of latanoprost-induced iris cysts have been reported in the literature.1-4

In the original article,1 we described a patient who developed a large iris pigment epithelial cyst in association with topical administration of latanoprost. Latanoprost treatment was discontinued and periodic examinations revealed that the cyst disappeared within 3 weeks. We proposed that this rare adverse effect was related to increased uveoscleral outflow caused by latanoprost. Herein, we describe the follow-up of our initial patient in whom rechallenge with latanoprost. Eventually, repeated ultrasound biomicroscopy revealed a small cystic structure persisting close to the junction between the iris and ciliary body (Figure 2B).

Comment. Both latanoprost and bimatoprost are topically applied prostaglandin F₂α analogues that lower intraocular pressure by improving uveoscleral outflow. In the reported case, the capability of latanoprost to induce iris cysts is confirmed by the recurrence of the cyst after discontinuation of bimatoprost treatment, a small residual cyst, not seen clinically, persisted in the region of the iridociliary sulcus (arrow). Note the normal configuration of the anterior chamber and iris surface.

Figure 1. Slitlamp photograph of the patient’s right eye after topical administration of bimatoprost. A large iris pigment epithelial cyst led to anterior displacement of the iris surface in the inferotemporal quadrant.

Figure 2. Ultrasound biomicroscopic images of the patient’s right eye. A, After initiation of bimatoprost treatment, an iris pigment epithelial cyst extended from the iridociliary junction to the pupillary border. Note the thin cyst wall and the anterior displacement of the iris stroma. B, Three months after discontinuation of bimatoprost treatment, a small residual cyst, not seen clinically, persisted in the region of the iridociliary sulcus (arrow). Note the normal configuration of the anterior chamber and iris.
rechallenge with the drug. The fluctuations in cyst size following initiation and discontinuation of bimatoprost strongly indicate that this adverse effect can be caused by other topical prostaglandin F₂α analogues as well.

Ultrasound biomicroscopy demonstrated that the patient had a large iris pigment epithelial cyst. However, the small residual cyst at the iridociliary junction raises the question of whether this was a secondary iris cyst arising de novo after administration of latanoprost or a preexisting primary cyst where only its volume was influenced by the eye drops. In both circumstances, the increased uveoscleral outflow may have contributed to cyst formation by changing the fluid dynamics through the interepithelial space of the posterior iris. In theory, the drugs could also have acted directly on the cyst-lining epithelial cells and thereby increased intracavitary fluid secretion. As anterior uveitis has been associated with the use of prostaglandin F₂α analogues,³⁰ an alternative mechanism of induction of the cyst could be inflammation due to subclinical uveitis.

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Uveal Melanoma Masquerading as Pigment Dispersion Glaucoma

A 64-year-old white woman from an outside ophthalmologist had a history of pigment dispersion glaucoma unresponsive to medical therapy in the right eye. She was subsequently found to have a ciliary body melanoma and was sent to our ocular oncology clinic for further evaluation. The clinical course and outcome are described.

Report of a Case. The visual acuity in the affected eye was 20/60 OD with an intraocular pressure of 38 mm Hg and an elevated lesion beneath the peripheral iris at the 2-o’clock position. The left eye was normal. In the right eye, the peripheral iris and anterior lens capsule were covered by a fine dusting of pigment (Figure 1). There was a small amount of corectopia superonasally. On gonioscopy, the angle was narrowed superonasally and there was intense, homogeneous pigmentation of the trabecular meshwork for 360°. Her contralateral eye had a small iris nevus but was otherwise normal.

Dilated examination of the right eye revealed a mass involving the ciliary body and posterior iris at the 2-o’clock position. There was evidence of direct tumor extension into the angle in the area of narrowing. Transillumination revealed no evidence of a ring melanoma. The vitreous was clear and the posterior pole was otherwise normal.

The patient was diagnosed with a ciliary body melanoma involving the iris and angle with secondary melanomalignant glaucoma. The systemic workup results were normal. The eye was enucleated based on patient preference. Histopathological analysis revealed a ciliary body melanoma of the mixed cell type. The tumor involved the iris root and angle with tumor seeding of the anterior segment. There was posterior extension of the tumor as well (Figure 2).

Comment. Although ciliary body melanomas are less common than their more posterior counterparts, the prognosis for metastases is worse. This is likely owing to the larger average size of the tumor at detection as well as the association with more malignant cell types.¹ Even with treatment, the rate of metastasis at 5 years is 28%.²

Ciliary body melanomas can remain hidden from the eye care provider owing to their location posterior to the iris. Patients often become symptomatic only after the tumor becomes large enough to cause cataract formation or lenticular astigmatism or to displace the crystalline lens.

Figure 1. Slitlamp photographs of the right (A) and left (B) eyes showing the pigment on the anterior surface of the iris in the right eye. The arrow denotes the location of the tumor.

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