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, trauma, or miotics. Four cases of latanoprost-induced iris cysts have been reported in the literature. 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 as well as subsequent administration of topical bimatoprost led to recurrences of the iris cyst.

Report of a Case. In 1998, a 76-year-old woman with primary open-angle glaucoma had a latanoprost-induced iris cyst in her right eye. The cyst gradually resolved after substitution of latanoprost with topical timolol. During the following 2 years, the intraocular pressure increased to levels greater than 20 mm Hg. After obtaining informed consent, the right eye was rechallenged with latanoprost, 0.005%, at bedtime. At examination 7 months later, the iris cyst had recurred and led to anterior displacement of the iris in the inferotemporal quadrant. Due to lasting elevated intraocular pressure and the lack of any complications from the cyst, the patient continued to receive latanoprost therapy for approximately 2.5 years (until 2003). Then, an attempt to reduce the intraocular pressure was made by replacing latanoprost with bimatoprost, 0.03%, once every evening, which shortly thereafter resulted in a further increase in cyst size. The cyst bulged the iris forward between the 6- and 10-o’clock positions (Figure 1) and was visible as a slightly transilluminating, elongated, dark brown mass just posterior to the pupillary border. The color and pigmentation of the iris stroma were normal, and there were no signs of intraocular inflammation. Ultrasound biomicroscopy demonstrated a solitary, thin-walled cyst with clear intracavitary fluid posterior to the iris. The cyst, measuring 1.5 × 4 mm, extended from the iridociliary junction to the pupillary border (Figure 2A).

Owing to planned cataract surgery of the right eye, bimatoprost treatment was discontinued; periodic slitlamp examinations showed that the cyst gradually diminished and finally disappeared within the following 6 weeks. Despite normal configuration of the anterior chamber and iris surface, 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
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 eyedrops. 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, 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.

High-frequency ultrasonography revealed a mass centered in the ciliary body with low internal reflectivity. The tumor measured 12.0 × 7.9 mm in basal dimension with a height of 3.3 mm.

The patient was diagnosed with a ciliary body melanoma involving the iris and angle with secondary melanomalous 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. Even with treatment, the rate of metastasis at 5 years is 28%.

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.