ECP an option to treat epithelial downgrowth

Endoscopic cyclophotocoagulation may offer a more precise and complete treatment while minimizing collateral structure damage.

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Although cornea specialists primarily treat epithelial downgrowth, glaucoma specialists may encounter this condition in patients who have undergone implantation of glaucoma drainage devices and, as a result, experienced the proliferation of conjunctival or corneal epithelium into the anterior chamber.

Epithelial downgrowth is recognized clinically by a translucent membrane on the corneal epithelium or iris surface, along with elevated IOP, an effaced iris contour, pupil irregularity and/or an iris cyst. Elevated IOP occurs when the epithelium grows over the angle system and obstructs aqueous drainage. Until now, traditional treatment modalities for epithelial downgrowth have been invasive and damaging to the anatomy of the eye, but my experience has shown that treating epithelial downgrowth with endoscopic cyclophotocoagulation (ECP) provides advantages over traditional treatment options.

**Traditional treatment options**

Traditional surgical treatment options include argon laser photocoagulation and en bloc excision of the involved cornea, uvea and sclera along with adjunct cryotherapy. These treatment modalities are invasive and can cause a dilemma for patients and surgeons because it is not uncommon that a large portion of the cornea or iris might have to be removed to eradicate the epithelial downgrowth. While the posterior iris and angle structures may be difficult or impossible to visualize during argon laser photocoagulation, the ECP endoscope (Endo Optiks) allows direct visualization of the tissue requiring ablation and direct application of photocoagulation to the affected iris surface, angle, posterior corneal surface or ciliary body. ECP has the potential for more precise and complete treatment of epithelial downgrowth and, most importantly, to minimize collateral structure damage.

**A unique case**

I was following a patient with raised IOP who had undergone prior glaucoma drainage implant surgery as well as two corneal graft implantations. Cornea specialists were following him closely after he had a second penetrating keratoplasty. The cornea
specialist noticed a small faint line on the posterior surface of the patient’s cornea that was suspicious of epithelial downgrowth, and it appeared to be progressing (Figure 1).

Considering one of the modalities to diagnose and treat epithelial downgrowth is argon laser photocoagulation, I recognized that I might be able to use the same method with ECP. I entered the eye with the ECP probe and applied the laser to the area thought to have epithelial downgrowth, and just as with argon laser photocoagulation, the characteristic whitening of the epithelium appeared. After using the ECP probe to visualize the angle system and locate the epithelium, I was able to see a sheet of tissue that had grown over the angle system and onto the iris. I treated the entire area and some of the cornea and, with the aid of a cornea specialist, took the corneal graft off and placed a new graft on. At 2 years postoperatively, the patient has not had any recurrence of epithelial downgrowth.

ECP for epithelial downgrowth is less invasive than the majority of treatment modalities and does not involve removing parts of the eye. When epithelial downgrowth is treated and diagnosed in its early stages, other invasive treatment modalities can do more damage than the condition itself. It is frustrating for an ophthalmologist to diagnose a patient with epithelial downgrowth and know that traditional treatment can lead to loss of vision.

**Conclusion**

Epithelial downgrowth can be devastating to the eye. It is now time to consider ECP as not only a method for lowering IOP, but also a treatment option for rare conditions. If we look outside of our current treatment bubble and realize the capabilities of the technology that we have at our fingertips, we can realize that we have visual access to parts of the eye that we would never be able to see during an office examination or intraoperatively. Now that we have a modality that is minimally invasive and can diagnose and treat these cases, we have an approach that will better aid in our diagnostic abilities and add another arm to our treatment paradigm for epithelial downgrowth.

**For more information:**

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