potential portal of entry for epithelial cells to grow inside the intact scleral pouch. While the scleral defect was repaired promptly after implant exposure was noted, the repeated recurrence of implant exposure suggests that the downgrowth had likely already occurred. This patient also had a history of previous penetrating ocular trauma, which may also be associated with epithelial downgrowth. However, the corneal specimen obtained during the original evisceration revealed no histologic evidence of epithelial downgrowth. Additionally, alcohol, a known epithelial toxic agent, was used to swab the sclera during the evisceration. Regardless of the cause of epithelial downgrowth in this patient, it should be recognized that such a process can occur, albeit infrequently, following evisceration, and it should be considered a possibility in unusual cases of implant exposure. Surgical correction of implant exposure in such cases should include attention to treatment of epithelial downgrowth, if suspected, to allow successful socket reconstruction and ocular prosthesis retention. In this case, removal of the implant and scleral pouch followed by placement of a dermis-fat graft was ultimately effective. Other treatment options described for ocular epithelial downgrowth have included irradiation, cryotherapy, laser photocoagulation, surgical excision, and, more recently, 5-fluorouracil.

A larger study analyzing the excised sclera of patients who have developed recurrent implant exposure following evisceration may be useful in determining a more accurate incidence of epithelial downgrowth following evisceration. While only 2 cases have been described in the peer-reviewed English-language literature prior to ours, the actual incidence may be higher. Awareness of the potential complication of epithelial downgrowth following evisceration is important, especially considering the implications discussed in this article.

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Figure 4. Higher-power microscopical examination of the scleral pouch showed that the inner surface of the sclera was completely lined by nonkeratinized squamous epithelium (hematoxylin-eosin, original magnification ×100).

Trauma-Induced Extrusion of an Ex-PRESS Glaucoma Shunt Presenting as an Intraocular Foreign Body

A 61-year-old non–English-speaking woman went to an outside emergency department after falling and hitting her head on the edge of a piece of furniture. She complained of decreased vision and pain in the left eye. A computed tomographic scan demonstrated intraocular air with a metallic foreign body in the left eye (Figure 1). The woman was referred to our institution for further evaluation.

We were unable to obtain additional history from the patient owing to a language barrier. Visual acuity was 20/80 OD and 20/200 OS. Intraocular pressure was 10 mm Hg OD and 12 mm Hg OS. The anterior segment examination revealed inferonasal loss of the iris stroma in both eyes, which was consistent with iris colobomas. Two millimeters above the left superior limbus, there was a Seidel-positive wound through which a smooth piece of metal was protruding through both conjunctiva and sclera. On further inspection, a dislocated Ex-PRESS shunt (marketed by Optonol Ltd, Zug, Switzerland; and in the United States by CIBA Vision, Duluth, Ga) was suspected (Figure 2A). The posterior segment examination revealed bilateral inferonasal colobomas.
After informed consent was obtained, the patient was taken to the operating room. A limbus-based conjunctival flap was created. The metallic shunt was removed and confirmed to be an Ex-PRESS shunt (Figure 2B). A small scleral track was present; this was not sutured closed. Both the conjunctival wound and flap were reapposed with sutures. One month postoperatively, the patient’s eye pain had resolved, the visual acuity had improved to 20/80, and the intraocular pressure increased to 14 mm Hg. There were no postoperative complications.

The Ex-PRESS miniature glaucoma implant is a small, stainless steel shunt that is implanted beneath the conjunctiva through a full-thickness sclerotomy and into the anterior chamber for treatment of open-angle glaucoma. Several studies suggest that the shunt is effective at reducing intraocular pressure. There have been no reports of shunt dislocation; however, a potential complication is spontaneous shunt exposure. One study documented conjunctival erosion in 4 of 36 cases whereas another study reported none in 11 cases. In 24 patients in whom the shunt was implanted under a scleral flap treated with mitomycin C, there were no reports of conjunctival erosion. However, as our case illustrates, blunt trauma to the eye can cause the shunt to become dislocated and exposed.

In contrast to many of the current glaucoma shunt devices currently available, the Ex-PRESS shunt is metallic. On a computed tomographic scan or plain radiograph, the Ex-PRESS shunt will appear as a radio-opaque object, and if individuals are not familiar with this device, it may cause undue concern. In the setting of trauma, the Ex-PRESS shunt may dislocate and partially extrude. This extrusion, combined with the presence of intraocular air and...
metal on imaging, may simulate an intraocular foreign body. Differentiating the Ex-PRESS shunt from an intraocular foreign body may allow for better counseling the patient for surgery and aid in planning the surgical repair.

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Large Spot Transpupillary Thermotherapy for Occult Choroidal Neovascularization

Reichel et al1 reported the visual results of 16 eyes of 15 patients treated with transpupillary thermotherapy (TTT) with spot sizes of 1.2 mm to 3 mm, and found that 75% of patients had either stabilization or improvement of acuity over a mean follow-up of 13 months. Most patients with occult choroidal neovascularization (CNV), however, have lesions larger than 3 mm, which is the largest size lesion that can be treated using delivery systems with unitary magnification. Thach et al3 used a lens capable of nearly doubling the treatment spot size for transpupillary thermotherapy, and after 1 year of follow-up, attained by less than half of their patients, most had stable or improved acuity. We examined data from a series of patients with occult subfoveal CNV ranging from greater than 3 mm to less than 4.5 mm in size using a lens providing treatment spot size magnification × 1.5. Our results do not mirror those of Thach et al.3

Methods. The patients examined in this study had occult subfoveal CNV as demonstrated during fluorescein angiography, a lesion size greater than 3000 µm but less than 4500 µm, 20/40 or less Snellen equivalent of the Early Treatment Diabetic Retinopathy Study visual acuity, and a history of declining visual acuity. Patients could not have blood represent more than 25% of the total lesion; concurrent eye disease associated with decreased acuity; a serous pigment epithelial detachment; or use any anticoagulant medications. After giving informed written consent, they were treated with an 810-nm diode laser (IRIS Medical OcclLight laser; Iridex Corp, Mountain View, Calif) using a power of 800 mW for 90 seconds using a lens providing a spot size magnification × 1.5. This provided a uniform spot size of 4500 µm. The patients were reexamined 2 to 3 months after their first treatment and re-treated using the same parameters if they showed signs of continued leakage during fluorescein angiography. All 45 patients in this study were treated over a 10-month period and had at least a 3-month follow up. Six patients developed predominantly classic CNV during the follow-up period and were treated with photodynamic therapy using verteporfin (Visudyne; Novartis Pharmaceutical Corp, East Hanover, NJ). The acuity results of the patients treated with photodynamic therapy were included in the final data set in an intent-to-treat basis. Of the 45 patients in this study, 10 returned to their referring physicians and no additional follow-up was available.

Patients were considered to have a moderate visual acuity loss or improvement if they had a 3-line or more decrease or improvement, respectively, in their Early Treatment Diabetic Retinopathy Study acuity. A patient experiencing a change of less than 3 lines in either direction was considered to be stable. The baseline characteristics and change in visual acuity was evaluated with categorical and descriptive statistics. Pearson correlation coefficients were calculated to examine the relationships among baseline variables and visual acuity change (SPSS statistical software, version 11.01; SPSS Inc, Chicago, Ill).

Results. Of the 45 patients initially treated, 35 (77.8%) were available for follow-up and were composed of a group of 12 men (34.3%) and 23 women (65.7%). The patients had a mean age (SD) of 77.9 (7.3) years. A total of 18 patients (51.4%) required retreatment. No patient had a complication from treatment. The follow-up ranged from 3 to 21 months. At the end of the mean follow-up of 13.5 months, visual acuity had improved in 4 patients (11.4%), remained stable in 10 (28.6%), and decreased in 21 (60%) (Figure 1). The mean change in acuity was a loss of 3.8 lines (Figure 2). The mean change in acuity was not correlated with sex (P = .2); age (P = .4); the presence of subfoveal blood (P = .33) or subreti-