these retained implants must show the same microscopic findings.

The authors wonder why procedures such as early repair and scleral patches are successful in a certain percentage of cases. I believe they are successful because extra tissue is supplied, tension is removed from the wound edges, meticulous closure is obtained, and all pressure is removed from the implant.

While I would agree with the authors that implant extrusion is directly related to wound separation, I disagree that epithelialization of the structures surrounding the implant produces the extrusion.

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In Reply.—In regard to the letter by Dr Ellis concerning our article on implant extrusion, we have the following comments.

There are multiple clinical observations supporting the impression that epithelial downgrowths contribute to implant extrusion. Patients with exposure or loss of an implant have frequently presented long-standing problems to their physicians. Either replacement of the implant into the pocket with closure of the defect, or primary closure if the implant is still in place, regularly fail. Patch grafts with sclera or other materials do occasionally succeed. Implant replacement procedures have used scleral covers, mesh, alternate routes to the orbit, suturing to the periostium, placement behind Tenon's capsule, and others. These varied difficulties and variably successful approaches to the problem indicate our previous lack of understanding of the pathology.

The surgical success of our procedure of removing the downgrowth is strong evidence in support of our hypothesis. No failures have occurred in our experience to date.

The appearance of the epithelial pouch around an extruding implant is different than that around an intact implant. The extruding implant has the appearance of a slightly gray to pink membrane as contrasted with the shiny white intact pouch. Similarly, the surface rigidity of the intact pouch appears greater.

Dr Ellis mentions that "pseudoconjunctiva . . . is invariably present over the full surface of the implant pouch." He presumes that it is a metaplasia of Tenon's capsule forming the "pseudoconjunctiva." He is "sure" that "retained implants must show the same microscopic findings." However, the membrane lining the intact implants is, histologically, fibrous connective tissue without epithelium, as contrasted with the epithelial downgrowth with extrusion.

Dr Ellis fails to substantiate his opinion with any proof. We do appreciate his question, however, as it allows us to present the histology of the intact pouch. We continue to believe that epithelial downgrowths are involved in the difficulties of managing extruding implants.

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JOEL LEIBSOHN, MD
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Panretinal Cryotherapy for Diabetic Rubeosis

To the Editor.—Several recent articles have called attention to the value of panretinal photocoagulation for treatment of rubeosis. We also have noted a gratifying response to this treatment. But what does one do if the media are too hazy for photocoagulation? We have used panretinal cryotherapy for six eyes and each patient has been followed up for more than one year postoperatively. This was done in an attempt to prevent intractable pain and enucleation.

We administered from 90 to 120 applications of cryotherapy covering the entire retina except the posterior pole and a narrow sector of retina from the disc to the nasal periphery. The nasal area was not treated, in an attempt to preserve some temporal visual field as well as central vision. The cryolesions were spaced with a lesion-sized area of untreated retina between lesions. The treatment was applied in two sessions seven to ten days apart. During the first session, treatment was applied transconjunctivally between ora and equator. In the second session, the patient was taken to the operating room, a 360° peritomy was performed, and treatment was applied from the equator to the arcades.

Three of the patients had diabetic rubeosis but did not yet have elevation of the intraocular pressure. In all three patients the rubeosis was eradicated and the tension remained normal.

There were three patients with rubeosis and associated neovascular glaucoma. One patient responded well with eradication of the rubeosis and normalization of the intraocular pressure. The other two had very prominent glaucoma and their panretinal cryotherapy was supplemented with cyclocryotherapy. The rubeosis was markedly reduced in one eye and eradicated in the other, but unfortunately, both eyes went into phthisis.

Complications included hyphemia (two eyes), macular edema (one eye), and increase of the preoperative vitreous hemorrhage (two eyes). The vision, both preoperatively and postoperatively, was poor in all eyes due to far-advanced proliferative diabetic retinopathy.

It is felt that this mode of treatment warrants further consideration for rubeosis without glaucoma, but we have serious doubts about its usefulness in far-advanced neovascular glaucoma.

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Spread of Hepatitis B Virus Antigen

To the Editor.—I wish to thank Drs Richard W. Darrell and Ginette B. Jacob for confirming my 1975 research results[1] in their recent article in the ARCHIVES (96:674-676, 1978). Both articles point to the possibility of spread of hepatitis B surface (HB_s) virus antigen by the ophthalmologist.

The possibility of spreading hepatitis virus from patients undergoing dialysis or blood transfusions and addicts is quite real. Slit-lamp examinations, tonometry, cataract extractions, and contact lens fittings are endangered with the risk of hepatitis virus antigen spread. Dialyzed patients often require ophthalmic treatment, and the history of use of dialysis is easy to obtain. Even the history of positive hepatitis B antigenemia may be known to the patient. Office examinations of patients with a history of positive antigenemia should be performed with great care so as not to contaminate office equipment. Office equipment is extremely difficult to sterilize completely after direct viral exposure. Furthermore, the older methods of sterilization, such as ultraviolet light sterilization of Schiötz tonometers, are absolutely ineffective against hepatitis B virus. Finally, the ophthalmologist would be wise to obtain current blood studies for hepatitis virus antigen before performing cataract extraction on dialyzed patients, who may remain antigenemic for months at a time.

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1. Epstein R, Leevy CM: Hepatitis B_s antigen and antibody in tears, abstracted. *Gastroenterology* 69:A20/820, 1975.