adequate rinsing and drying to have been performed.

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Congenital Iris Bombe\'e Induced by Large Iris Cysts

Primary cysts of the iris pigment epithelium (IPE) are uncommon and usually cause no ocular symptoms. We describe an infant with large congenital IPE cysts surrounding the entire pupillary area, which required surgical treatment. Based on an extensive MEDLINE search, we believe that this is the first report of a case of total posterior synchiae causing secondary angle-closure glaucoma from birth.

Report of a Case. A 2-month-old Japanese boy was first seen at our hospital for a corneal opacity in his right eye. It had been present since birth and seemed to be getting worse. The patient's birth was normal, and his mother reported no remarkable history for the infant or his family. He could not fix or follow with his right eye, but his left eye was normal. The horizontal corneal diameters were approximately 12.5 mm OD and 10.5 mm OS. Slitlamp examination of his right eye revealed a corneal stromal opacity (Figure 1A). The peripheral anterior chamber was collapsed, suggesting the existence of iris bombe\'e. B-mode ultrasonography and computed tomography (CT) revealed no remarkable abnormalities in the posterior and pericocular lesions in both eyes. In the 0.5-mm slice of the CT scan, the axial lengths were estimated to be 20 mm OD and 17 mm OS.

At age 2.5 months, the infant underwent examination and surgical intervention under general anesthesia. Intraocular pressure was 35 mm Hg OD (by pneumotonometer). Ultrasound biomicroscopy revealed a large iris cyst surrounding the pupillary area (Figure 1B). The pupillary margin adhered posteriorly to the lens. After the examination, the cysts were surgically resected. A small incision was made at the corneal limbus, and peripheral iridotomy was performed to form the peripheral anterior chamber. Viscoelastics were introduced, and the iris was cut circumferentially around the posterior synchiae with Zaldiar iridectomy scissors (American Surgical Instruments Corp, Westmont, Ill). Adherent cyst tissue was gently removed from the lens surface with microforceps. The pupil was reconstructed with a suture. Histopathological analysis of the removed tissue confirmed the presence of IPE cysts. (Figure 2)

Three months postoperatively, intraocular pressure was 20 mm Hg OD without medication. The corneal opacity had diminished, and the angle was open with scattered peripheral anterior synchiae. The corneal diameter was 12 mm OU. No remarkable abnormalities were observed in the lens, vitreous body, and fundus, including the optic nerve head. The patient could fix and follow with the involved eye. One year after normalization of intraocular pressure, the axial lengths of the eyes showed no apparent bilateral difference by estimation from a CT scan.

Comment. Among the primary iris cysts of childhood, stromal (nonpigmented epithelial) cysts are reported to be progressive and to cause complications. On the other hand, IPE cysts, which are more commonly found, rarely cause severe complications.\(^2\)\(^1\) Although Bron et al\(^1\)\(^2\) described a 28-year-old woman who

Figure 1. A. Slitlamp examination revealed a corneal opacity. B. A cross-sectional ultrasound biomicroscopy image of iris cysts at the 3-o’clock and 9-o’clock positions on the meridian. The cysts surround the whole pupillary area and appear to be thin walled, with no internal reflectivity. The margin of the anteriorly bowed iris adheres to the lens surface.
suffered from acute angle-closure glaucoma caused by an IPE cyst around the pupillary margin. This is the first reported case of secondary angle-closure glaucoma present from birth and caused by primary IPE cysts.

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Optic Neuropathy Secondary to Sub-Tenon Anesthetic Injection in Cataract Surgery

Direct optic nerve injury secondary to retrobulbar injection is a relatively uncommon but significant cause of blindness following cataract surgery.1 Believed to be safer than retrobulbar or peribulbar anesthe-

sia, sub-Tenon anesthesia nonetheless provides equally effective anesthesia and akinesia.2-4 Use of shorter, blunt-tipped needles with a more anterior site of injection are thought to reduce or eliminate the risk of optic nerve injury.2-4 To our knowledge, we report herein the first case of traumatic optic neuropathy secondary to sub-Tenon anesthesia and provide evidence of the mechanism of injury.

Report of a Case. A healthy 78-year-old man noted “total blindness” in his right eye just after an “uncomplicated” cataract extraction in that eye. Preoperatively, the patient had a Snellen visual acuity of 20/200 OD with macular fibrosis, and a 3+ nuclear sclerosis cataract on the right. Potential acuity meter readings showed a visual acuity of 20/60 OD and the axial length was 23.97 mm. Phacoemulsification had been performed with a scleral-tunnel approach, with implantation of a posterior chamber intraocular lens. Anesthesia was provided as a 2-mL sub-Tenon injection of 4% lidocaine hydrochloride, 3 mm posterior to the inferonasal limbus4 using a Masket cannula. Supplemental anesthesia was provided by 4% topical and 1% intracameral lidocaine.

Results of postoperative anterior segment examination on the 3 days after surgery were unremarkable including the applanation tonometry that measured between 16 and 20 mm Hg. Postoperative vision, first recorded on postoperative day 3, was light perception OD and 20/40 OS. Fundus examination showed previously noted macular fibrosis. Pupillary function was not tested. Subspecialty referral was made because of the concern of an optic neuropathy. Peripapillary hemorrhage and late staining of the disc by fluorescein angiography were evident 1 week later in the right eye. A magnetic resonance imaging (MRI) scan of the head and orbits was interpreted as being normal. Neuroophthalmic examination 2 weeks later showed no light perception OD and an afferent pupillary defect on the right. The right optic nerve was pale; peripapillary hemorrhage was not evident. Review of the MRI scan revealed 2 cuts suggestive of an abnormal signal in the immediate retrobulbar segment of the right optic nerve. Repeated MRI showed an increased T2-weighted signal of the right optic nerve with mild gadolinium enhancement (Figure 1). A diagnosis of optic neuropathy secondary to direct trauma from the sub-Tenon injection of anesthetic was made.

An Experiment With Sub-Tenon Cannulas. The average axial length of 7 cadaver eyes obtained from the New England Eye Tissue Bank, Boston, Mass, was 23 mm (range, 20-25 mm). The lengths of 3 commercially available cannulas (Masket, Eagle, and Visitec) were measured to be 23, 22, and 26 mm. The correct in situ orientation of an eye was made by considering the locations of the insertions of the extraocular muscles. Each of the cannula was ad-

Figure 2. Light microscopy of a part of the iris cysts resected. A, The cyst wall (arrows) consists of iris pigment epithelial cells (hematoxylin-eosin, original magnification ×40). B, The cyst wall (arrow) is pigmented and monolayered (hematoxylin-eosin, original magnification ×400).