

channel: estimates of differential pressure between the anterior and posterior chambers. *J Glaucoma* 2004;13:100–7.

- Pierscionek BK, Asejczyk-Widlicka M, Schachar RA. The effect of changing intraocular pressure on the corneal and scleral curvatures in the fresh porcine eye. *Br J Ophthalmol* 2007;91:801–3.

Keratoprosthesis Sterile Vitritis

Dear Editor:

We had previously reported the visual rehabilitation and complications after the implantation of MICO F keratoprosthesis (The keratoprosthesis used in our hospital was developed by the Moscow Eye Microsurgery complex in Russia, hence it is called the MICO F keratoprosthesis).¹ Retroprothetic membrane formation and glaucoma were the most common and risk factors for the visual function. In addition, we observed the particular phenomenon of sudden sterile vitritis without the other signs of bacterial endophthalmitis. The major presenting symptom in sterile vitritis was a rapid and painless visual decline. All symptoms happened with no warning and obvious presentations. Visual function was almost completely recovered in most patients within a few weeks. Here we report our experience of 6 patients with a discussion of etiology and treatment of sudden sterile vitritis.

The study protocol conformed to the tenets of the Declaration of Helsinki, and it received ethical approval from the China Eye Research Institute Review Board.

A total of 96 MICO F keratoprostheses were implanted in 96 eyes of 96 patients between April 1, 2000, and May 1, 2010 in our hospital. Sterile vitritis occurred in 6 patients, 1 to 30 months postoperatively. The preoperative corneal diagnosis was alkali burn (3 eyes), Stevens-Johnson syndrome (SJS, 2 eyes), and acid burn (1 eyes). Four eyes had a history of 1–3 prior penetrating keratoplasty (PKP) surgeries. All patients presented with sudden, marked decrease in vision with little or no pain. The recovery of vision was complete in 2 to 6 weeks. The first 2 cases were treated like bacterial endophthalmitis. Both patients underwent pars plana vitrectomy as soon as the diagnosis was confirmed. Samples of vitreous cultures revealed no bacterial or fungal growth. Peribulbar injection of dexamethasone 2.5 mg, tobramycin 20 000 units, and 1% lidocaine 0.2 ml (DG mixture) and antibiotics were used in the first 3 days of the other 4 patients. Triamcinolone (40 mg) and intensive topical steroid therapy were applied then after. The recovery of vision almost to the pre-episode level was seen in the other 4 patients. Iodized-lecithin was usually a supplementary treatment to reduce the vitritis.

Differential diagnosis of endophthalmitis and sterile vitritis is of much importance. Endophthalmitis is an inflammatory reaction of intraocular fluids or tissues. Since the MICO F optical cylinder is only 2.2–2.5 mm in diameter,¹ it was difficult to find flocculent “snow flake” vitritis with slit lamp or funduscopy in sterile vitritis. The patients always had externally quiet eyes and minor ocular complaints in association with anterior chamber cells and a dense cellular reaction in the vitreous.²

Sterile vitritis developed in 6.25% (6/96) of the eyes in our hospital, as compared with 5% (7/136) of the eyes in the multicenter series and 10% (5/50) in a series of patients who

received the Boston type 1 keratoprosthesis between 2004 and 2008.^{3,4}

Visual acuity (VA) came back in the 4 patients with peribulbar injection of DG mixture and triamcinolone (40 mg) in 2 to 6 weeks. Because of the concern for possible bacterial endophthalmitis, pars plana vitrectomy, and anti-bacterial therapy were used in the first 2 patients. Sequelae of the pars plana vitrectomy might explain the subsequent VA decline.

Although sterile vitritis is a well-recognized complication after keratoprosthesis surgery,^{3–5} the pathogenesis is still unknown. Since the same keratoprosthesis and techniques were used in all 96 patients, it seems not to be any device-related factors contributing to this phenomenon. Considering the unlikely relationship between sterile vitritis and bacterial, this complication might be an immune phenomenon. Because of the uncertain etiology, systemic antibiotics were still recommended. However, peribulbar injection of DG mixture, triamcinolone, and intensive topical steroid might be a proper therapy in our series. Despite most patients regaining VA, sterile endophthalmitis in MICO F patients is not harmless and could threaten prosthesis retention or function. More research needed to understand the reason for what appears to be sterile vitritis in this setting.

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References

- Huang Y, Yu J, Liu L, et al. Moscow Eye Microsurgery Complex in Russia Keratoprosthesis in Beijing. *Ophthalmology* 2011;118:41–6.
- Khan BF, Harissi-Dagher M, Khan DM, Dohlman CH. Advances in Boston keratoprosthesis: enhancing retention and prevention of infection and inflammation. *Int Ophthalmol Clin* 2007;47:61–71.
- Aldave AJ, Kamal KM, Vo RC, Yu F. The Boston type I keratoprosthesis: improving outcomes and expanding indications. *Ophthalmology* 2009;116:640–51.
- Zerbe BL, Belin MW, Ciolino JB, Boston Type 1 Keratoprosthesis Study Group. Results from the multicenter Boston Type 1 keratoprosthesis study. *Ophthalmology* 2006;113:1779–84.
- Aquavella JV, Qian Y, McCormick GJ, Palakuru JR. Keratoprosthesis: the Dohlman-Doane device. *Am J Ophthalmol* 2005;140:1032–8.

Iris Melanoma



Dear Editor:

We herein describe a novel surgical technique for resection of an iris tumor entitled “small incision internal resection and gentle Healon (AMO, Abbott Park, IL) aspiration of iris melanoma.” A 17-year-old boy presented to the ophthalmic oncology clinic for evaluation of an asymptomatic iris lesion left eye (OS). Visual acuity was 20/15 in each eye (OU). Examination of the left eye revealed a circumscribed 2.1 × 1.6 mm pigmented inferior iris lesion with indistinct borders and pigment dusting (Figure 1A; available at <http://>

aaojournal.org). Subtle corectopia was present. Localized intrinsic or feeder vessels were absent. Comparison to slit lamp photographs taken 5 years previously demonstrated growth (Figure 1B; available at <http://aaojournal.org>). Ultrasound biomicroscopy confirmed isolated iris involvement with total lesion thickness of 1.3 mm (Figure 1C; available at <http://aaojournal.org>). The remainder of the ocular examination was within normal limits. Informed consent from both the patient and his mother was obtained for resection of presumed iris melanoma.

A 3.0-mm beveled clear corneal incision was made superiorly at 2 o'clock. A paracentesis incision was made at 10 o'clock. Sodium hyaluronate (Healon) was instilled into the anterior chamber (Video 1; available at <http://aaojournal.org>). Using 25-gauge horizontal vitrectomy scissors and vitrectomy forceps, the lesion was excised en bloc with a visible tumor-free margin (Video 2; available at <http://aaojournal.org>). A segment of clear plastic tubing (diameter 3.5 mm) that had been primed with Healon was inserted into the anterior chamber after the corneal incision was enlarged. Withdrawal of a 3.0-ml syringe attached to the tube allowed gentle and controlled aspiration of the entire iris lesion into the viscoelastic-primed tube (Video 3; available at <http://aaojournal.org>). The tube was withdrawn from the anterior chamber and the lesion was expressed and unfolded onto filter paper and subjected to routine histopathologic processing. After Healon washout, the iris defect was closed using 2 interrupted 10-0 prolene sutures placed through paracentesis incisions at 4 and 8 o'clock using a modified Siepser slip-knot technique.¹ The larger corneal incision was closed with 3 interrupted 10-0 nylon sutures while the paracentesis was closed with one (Video 4; available at <http://aaojournal.org>). On postoperative day 1, the visual acuity was 20/15⁻², with minimal anterior segment inflammation and without hyphema (Figure 1D). The corneal wounds were well-opposed and intraocular pressure was 20 mmHg.

Histopathologic examination of the resected lesion demonstrated melanoma involving almost the entire specimen (Figure 2A; available at <http://aaojournal.org>). Melanocytic cells, possibly benign nevus cells, were present at the non-pupillary edge of the specimen. The morphology of the malignant population was approximately 95% spindle B cells (Figure 2B; available at <http://aaojournal.org>) and 5% epithelioid cells (Figure 2C; available at <http://aaojournal.org>). Mitotic activity was not observed. Immunohistochemistry was positive for melanA, and negative for smooth muscle actin (Figure 2D; available at <http://aaojournal.org>). The neoplastic growth present in this case, which effaces the architecture of the iris, as well as the small epithelioid cells with nucleoli precludes the diagnosis of a benign nevus, even without finding mitoses.

At 2 months postoperative, visual acuity remains 20/15 and the iris defect is well-opposed without evidence of recurrence of the tumor.

Minimally invasive techniques have been adopted in many areas of surgery to reduce patient morbidity, allowing for faster recovery following surgical procedures.² A recent analysis of data from the Nationwide Inpatient Sample (the largest nationwide all-payer database) from 1993 to 2007 demonstrated a major increase in minimally invasive sur-

gery with a corresponding sharp decline in the open counterpart over 14 years.³ Iridectomy may be indicated for excision of suspected malignant iris tumors that are circumscribed (less than 4 clock hours) but necessitates a large corneoscleral incision.⁴ Failure to adequately close the iris defect can result in a cosmetic defect and photophobia.⁵ We describe a novel surgical technique for internal resection of a circumscribed iris tumor through a small corneal incision combined with gentle Healon aspiration. Small incision removal of a malignant lesion does carry an increased theoretical risk of tumor dissemination and seeding of the anterior chamber if increased tissue manipulation is required; however, the technique may avoid the potential morbidity associated with a large corneoscleral incision allowing for rapid visual recovery.

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References

1. Osher RH, Snyder ME, Cionni RJ. Modification of the Siepser slip-knot technique. *J Cataract Refract Surg* 2005;31:1098–100.
2. Goh HK, Ng YH, Teo DT. Minimally invasive surgery for head and neck cancer. *Lancet Oncol* 2010;11:281–6.
3. Eckert M, Cuadrado D, Steele S, et al. The changing face of the general surgeon: national and local trends in resident operative experience. *Am J Surg* 2010;199:652–6.
4. Damato B, Groenewald C. Uveal malignant melanoma: management options - resection techniques. In: Singh AD, Damato BE, Pe'er J, et al, eds. *Clinical Ophthalmic Oncology*. Philadelphia, PA: Saunders Elsevier; 2007:259–66.
5. Conway RM, Chua WC, Qureshi C, Billson FA. Primary iris melanoma: diagnostic features and outcome of conservative surgical treatment. *Br J Ophthalmol* 2001;85:848–54.

Artifacts Associated with Spectral-domain OCT



Dear Editor:

We read with much interest the article of Han and Jaffe¹ on the evaluation of artifacts associated with macular spectral-domain optical coherence tomography (SD-OCT). In their article, the authors characterized the types and frequencies of image artifacts associated with macular scanning using Cirrus high-definition (HD)-OCT (Carl Zeiss Meditec, Dublin, CA), and Spectralis Heidelberg Retina Angiograph (HRA)-OCT (Heidelberg Engineering, Heidelberg, Germany), and found that image artifacts frequently involve segmentation errors. Most of these artifacts have been already reported for the most commonly used time-domain (TD)-OCT, Stratus OCT (Carl Zeiss Meditec). Recent studies demonstrated a lower frequency of artifacts in SD-OCT instruments compared with Stratus TD-OCT.^{2,3} Interestingly, the authors identified several types of clinically important artifacts generated by SD-OCT, including those previously seen in TD-OCT and those new with SD-OCT.¹ We have recently performed a similar analysis by compar-