

Uveitis-Glaucoma-Hyphema Syndrome After Posterior Chamber Intraocular Lens Implantation

Hidemi Aonuma, Hirofumi Matsushita, Kunihiro Nakajima,
Masayosi Watase, Kazuaki Tsushima and Ikuo Watanabe

*Department of Ophthalmology, Hamamatsu University School of Medicine, Hamamatsu,
Shizuoka, Japan*

Abstract: This article describes uveitis-glaucoma-hyphema (UGH) syndrome following posterior chamber intraocular lens (PCIOL) implantation in a 51-year-old male patient who had had intermittent blurred vision for 2 years prior to cataract surgery. We found the lens haptics fixed in the sulcus and the lens rotated. The lens was extracted and a new implant inserted with a transscleral suture. Etiology of the syndrome in this patient was an unstable sulcus fixation. *Jpn J Ophthalmol* 1997;41:98-100 © 1997 Japanese Ophthalmological Society

Key Words: Posterior chamber intraocular lens, scanning electron microscopy, transscleral suture, uveitis-glaucoma-hyphema syndrome.

Introduction

The uveitis-glaucoma-hyphema (UGH) syndrome is a complication usually associated with the implantation of an anterior chamber or iris-supported lens. This article describes a rare occurrence following posterior chamber intraocular lens implantation^{1,2} that was treated by implantation of a new lens with a transscleral suture.

Case Report

A 51-year-old male patient was referred to our department in February 1993 with complaint of intermittent blurred vision of the left eye. He had undergone an extracapsular cataract extraction with a posterior chamber intraocular lens (AMO PC85NB™, Irvine, CA, USA) implantation and peripheral iridectomy of the left eye in 1989. There had been no postoperative difficulty until 1991, when episodes of hyphema and increased intraocular pressure (IOP) developed. At his initial visit to our department, vi-

sual acuity was 0.4 (1.5 × cyl -1.0D A120°) OD and 0.4 (1.5 × -0.5D cyl -1.5D A50°) OS. IOP was 14 mm Hg OD and 22 mm Hg OS. A topical beta-blocking agent was applied to the left eye. Slit-lamp examination revealed many cells and flare in the left anterior chamber. There was heavy pigmentation and a peripheral anterior synechia around the iridectomy in the left anterior chamber angle, but there was no neovascularization seen. Corneal diameter was 11.5 mm in both eyes. After dilation of the pupil, the intraocular lens was fixed in the ciliary sulcus and positioned temporally (Figure 1). The left fundus was normal, but neovascularization of unknown etiology was seen in the peripheral inferior nasal retina of the right eye. This lesion was treated with laser photocoagulation. The patient's general health was good; hematology and chest x-ray results were normal.

In spite of treatment with topical corticosteroids and a hemostatic agent, the hyphema and elevated IOP recurred. Left visual acuity decreased intermittently, sometimes limited only to hand motion, and IOP occasionally reached 50 mm Hg. In May 1993, the superior haptic of the lens extruded through the iridectomy into the anterior chamber (Figure 2a), but had returned to the posterior chamber at the next visit (Figure 2b). Rocking of the intraocular lens, apparently from unstable fixation, was noted and the

Received: May 7, 1996

Address correspondence and reprint requests to: Hidemi AONUMA, MD, Department of Ophthalmology, Hamamatsu University School of Medicine, 3600 Handa-cho, Hamamatsu, Shizuoka 431-31, Japan



Figure 1. First visit: intraocular lens fixated in ciliary sulcus toward temporal side.

patient was hospitalized for surgery on October 3, 1994. (He had been treated unexpectedly, at another hospital, by Nd-YAG laser postcapsulotomy 2 weeks previously.) On admission, left visual acuity was 0.2 ($1.5 \times -0.5D$ cyl $-1.0D$ A45°); IOP was 22 mm Hg.

At surgery on October 6, the intraocular lens floated as soon as viscoelastic material was injected into the anterior chamber after the corneoscleral incision, and was easily extracted with forceps. The vitreous prolapsed into the anterior chamber through the posterior capsulotomy, necessitating an anterior vitrectomy. A single-piece intraocular lens was implanted, using a transscleral suture. The postoperative course was uneventful and the patient has had no further episodes of hyphema or ocular hypertension.

The extracted lens, AMO PC85NB™, is a 3-piece polymethylmethacrylate lens, originally 13.5 mm, with modified C-polypropylene loop haptics. When removed, the lens size had contracted to 12.5 mm.

The lens was fixed in 2% glutaraldehyde, dehydrated in a graded alcohol series, dried in a critical-point dryer, then coated with gold for examination by scanning electron microscope (Hitachi S-800).

Results

Electron microscopy showed that the optic and haptics had not deteriorated; however, the haptic sur-

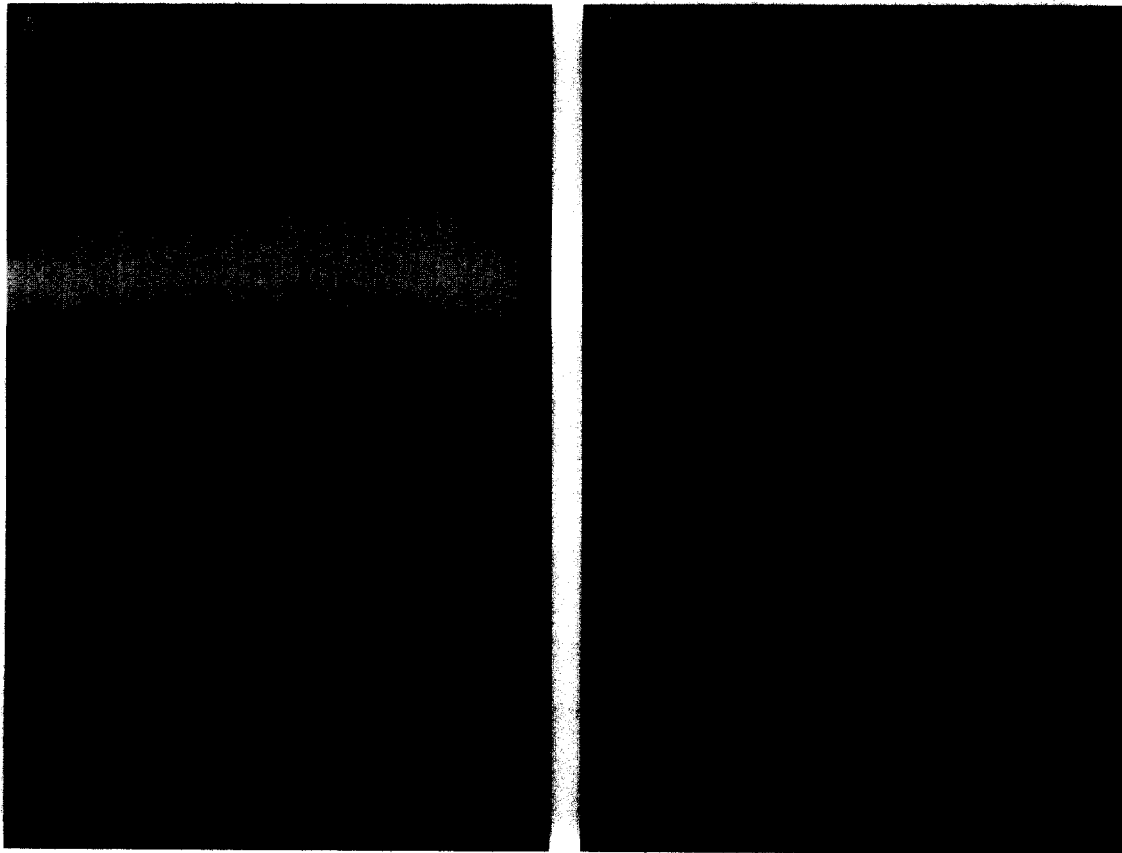


Figure 2. (A). Gonioscopic photograph: superior haptic (asterisk) extruding through iridectomy into anterior chamber, May 1993. (B). Haptic returned to posterior chamber at next visit (arrow: peripheral iridectomy).



Figure 3. Scanning electron micrograph of mushroom-shaped haptic tip (bar: 100 μ m).

faces were rougher than the optic surface. The caliber of the haptic tip was larger and shaped like a mushroom (Figure 3). A few cells were attached to the lens surface, but no foreign-body giant cells were seen.

Discussion

UGH syndrome is an infrequent complication of posterior chamber lens implantation. Percival¹ described 1 case following implantation of a Rayner-Pearce tripod lens; Van Liefferinge² described 2 cases that occurred following implantation of an Anis-type lens. Some cases reported as delayed hyphema^{3,4} or recurring hyphema,⁵⁻⁸ associated with ocular hypertension or uveitis, seem to be similar to the uveitis-glaucoma-hyphema syndrome. In most of these cases, the implanted lenses were modern single-piece or 3-piece lenses. In all cases, sulcus fixation of one or both haptics apparently caused mechanical irritation and trauma to surrounding tissues and vessels. In our case, the unstable sulcus fixation was confirmed by the rocking of the intraocular lens and the extrusion of the haptic, evidently leading to the hyphema. Although electron microscopy did not show deterioration of the haptic material, it is possible that decreased size of the lens may have caused the rotation. The

mushroom-shaped haptic tips, designed to provide stability of the intraocular lens, may have increased the trauma to the surrounding tissues from the lens rotation.

Medical treatment for these complications includes topical miotic and mydriatic agents² and laser photocoagulation of the bleeding site.^{5,6} Surgical treatment may involve rotation,⁷ removal,⁸ or McCannel suturing¹ of the intraocular lens. If the intraocular lens adheres to the iris or ciliary body, removal of the lens could cause severe hemorrhage.

In the present case, with a large rotation of the lens, the risk was low. Transscleral suture is a more invasive but a more reliable technique; an earlier (large) Nd-YAG laser posterior capsulotomy had resulted in extrusion of the lens into the anterior chamber.

Posterior chamber lenses are now designed for intracapsular implantation: if small or foldable lenses with more flexible haptics are not fixed securely in the capsule, there is potential for development of the uveitis-glaucoma-syndrome.

The authors thank the staff of the Central Laboratory for Ultrastructure Research, Hamamatsu University School of Medicine, for their support and suggestions.

References

1. Percival SPB, Das SK. UGH syndrome after posterior chamber lens implantation. *Am Intra-ocular Implant Soc J* 1983; 9:200-1.
2. Van Liefferinge T, Van Oye R, Kestelyn P. Uveitis-glaucoma-hyphema syndrome: A late complication of posterior chamber lenses. *Bull Soc Berge Ophthalmol* 1994;252:61-5.
3. Hao Y, Hui Y. Delayed hyphema after posterior chamber intraocular lens implantation. (*Yen Ko Hsueh Pao*) *Eye Science* 1994;10:48-9.
4. Khaw PT, Chisholm IH, Elkington AR, et al. Iris pigment loss and hyphema secondary to anteriorly tucked posterior chamber intraocular lens. *J Cataract Refract Surg* 1987;13:453-54.
5. Assia EI, Blumenthal M. Recurrent hyphema associated with IOL loop displacement treated with argon laser photocoagulation. *Ophthalmic Surg* 1993;24:343-45.
6. Geisse LJ. Nd:YAG laser treatment for recurrent hyphemas in pseudophakia. *Am J Ophthalmol* 1991;111:13.
7. John GR, Stark WJ. Rotation of posterior chamber intraocular lenses for management of lens-associated recurring hyphemas. *Arch Ophthalmol* 1992;110:963-64.
8. Pavlin CJ, Harasiewicz K, Foster S. Ultrasound biomicroscopic analysis of haptic position in late-onset, recurrent hyphema after posterior chamber lens implantation. *J Cataract Refract Surg* 1994;20:182-85.