

# Traumatic aniridia and aphakia after Artisan intraocular lens implantation

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Traumatic aniridia and aphakia occurred in the left eye of a 22-year-old man who had had Artisan (Ophtec) phakic intraocular lens (IOL) implantation. Aniridia was probably the result of the relatively large wound used to implant the nonfoldable IOL. Although the eye had severe traumatic damage, vision was recoverable through a 2-stage procedure of vitrectomy and subsequent scleral suture fixation of an iris-diaphragm IOL.

*J Cataract Refract Surg* 2007; 33:1341–1342 © 2007 ASCRS and ESCRS

Trauma is known to dislocate the Artisan (Ophtec) phakic intraocular lens (IOL), also known as the Verisyse (AMO) in the United States. Most cases are not severe and can be repaired with reenclavation.<sup>1,2</sup> I present a case in which traumatic total aniridia and aphakia occurred 6 months after Artisan implantation.

## CASE REPORT

A 22-year-old soldier presented with a sudden loss of vision in the left eye after trauma. He reportedly was running during training when a soldier ahead of him stopped and turned around. He ran into the soldier's head, hitting the left eye directly.

The patient had had uneventful bilateral implantation of Artisan phakic IOLs 6 months earlier to correct  $-8.0$  diopters of myopia. On presentation at the emergency room, the left eye was totally aniridic and aphakic. It also had a partial hyphema in the anterior chamber and a moderate vitreous hemorrhage (Figure 1, upper left). The original 6.0 mm superior clear corneal wound was dehiscenced, with a slight tear extending 1.0 mm from the temporal side. The vitreous had prolapsed through the wound. The Artisan phakic IOL, iris, and crystalline lens were not found on examination.

After the ruptured eye was repaired under sub-Tenon's anesthesia, a sutureless, 3-port, 25-gauge pars plana

vitrectomy was performed to remove the vitreous hemorrhage. A small retinal tear was found in the temporal equator of the retina and treated with endolaser photocoagulation. There was diffuse retinal edema and folding but no choroidal hemorrhage, effusion, or retinal detachment immediately after the ruptured eye was repaired with the adjuvant pars plana vitrectomy.

One week postoperatively, the visual acuity was 20/100 with pinhole and the intraocular pressure (IOP) was normal. Retinal folding and edema were seen in the fundus (Figure 1, upper right). The retinal folding and edema eventually disappeared at 1 month, and the best corrected visual acuity (BCVA) improved to 20/40.

At 6 months, the BCVA improved to 20/20 with pinhole and the IOP, corneal endothelial count (2140 cells/mm<sup>2</sup>), and macular optical coherence tomography findings were normal. Because there was no remaining capsule support, scleral suture fixation with a black, single-piece, 10.0 mm diameter iris-diaphragm IOL (67G, Ophtec) with a central optic 5.0 mm in diameter was performed under sub-Tenon's anesthesia. An anterior chamber maintainer was used through a temporal clear corneal paracentesis incision to prevent hypotony during this secondary IOL surgery. Scleral depression confirmed that the haptic was placed under the iris stump.

One week after the second surgery, the BCVA was 20/100 and the iris-diaphragm IOL was well-centered and in a stable position (Figure 1, lower left). Six months after the secondary IOL implantation, the uncorrected visual acuity was 20/30 and the BCVA 20/20. The iris-diaphragm IOL remained in a central and stable position and the retina was within normal limits for one year (Figure 1, lower right).

## DISCUSSION

Traumatic dislocation of an Artisan IOL is a rare complication, with only 4 reports in the clinical literature.<sup>1,2,3,4</sup> Most dislocations resulted in the haptic claw tearing free from the iris at one point, which could be easily corrected by reenclavation. Based on the reports, it seems probable that the enclavation force of the haptic claw is insufficient or the iris tissue is not strong enough to hold the Artisan IOL during

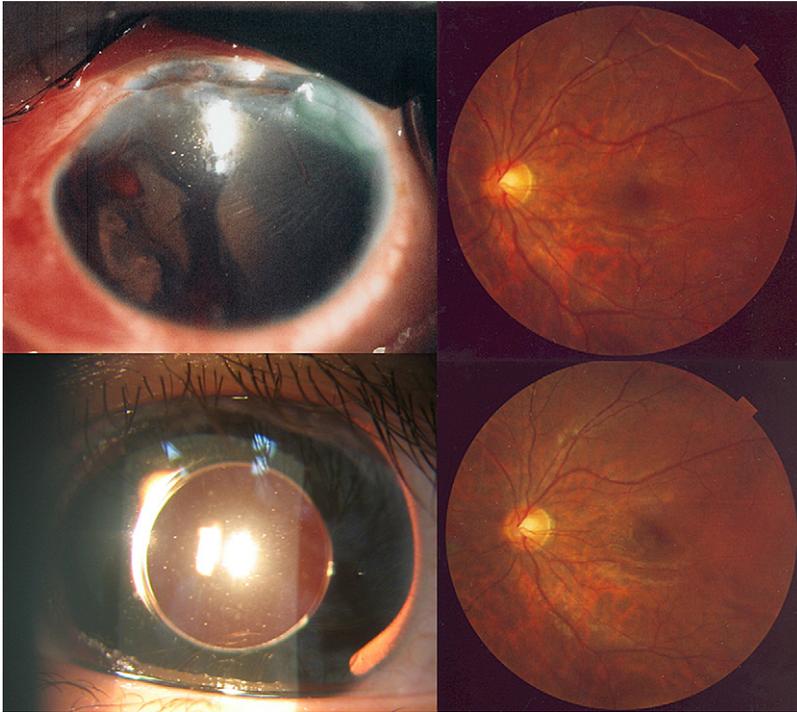
Accepted for publication March 5, 2007.

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The author has no financial or proprietary interest in any material or method mentioned.

Daniel G. Dawson, MD, and Henry F. Edelhauser, MD, Emory Eye Center, Atlanta, Georgia, USA, provided suggestions and support.

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**Figure 1.** *Upper left:* Slitlamp photograph showing superior wound dehiscence, aniridia, aphakia, and hyphema in the anterior chamber and vitreous hemorrhage in the left eye. *Upper right:* Postoperative fundus photograph showing retinal edema and a retinal fold in the superior midperiphery. *Lower left:* Slitlamp photograph showing the iris-diaphragm IOL 1 week postoperatively. *Lower right:* Fundus photograph showing no edema or folding after 1 year.

ordinary trauma. But this case revealed that it would not.

This case also suggests that more severe trauma can result in rupture of the eye, presumably because of the relatively large incision (6.0 mm). According to a study that compared the frequency of traumatic wound dehiscence after cataract surgery,<sup>5</sup> phacoemulsification with a small sclerocorneal tunnel incision was associated with significantly less risk (0.02%) for wound dehiscence than large-incision extracapsular cataract surgery (0.4%).

Furthermore, because the wound diameter was smaller than the interhaptic distance in the Artisan IOL (8.5 mm), it is thought that the IOL, after grasping the iris firmly, rotated and contributed to the aniridia. This presumably also caused the peripheral incision site to tear more peripherally.

Small incisional surgery with the foldable Artiflex phakic IOL (Ophtec) should reduce the risk for wound dehiscence. This case stresses the need for protection in eyes with previous eye surgery and may reduce the risk for wound dehiscence, particularly when the patient is involved in activities such as the military or contact sports, eg, wrestling, football. Although the

case involved severe traumatic damage, the patient's vision recovered fully after the 2-stage procedure.

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