

Removal of the Intruding Miragel's Scleral Buckle by Pars Plana Ultrasonic Fragmentation

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PURPOSE: To introduce a surgical approach for removing intruded scleral buckle resulting from Miragel's implant.

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DESIGN: Interventional case report.

METHODS: After cutting and releasing scleral band externally, a pars plana Fragmatome was used to break up and aspirate pieces of the Miragel's implant that had grown into the eye, filling the vitreous cavity.

RESULTS: The intruding Miragel's buckle was shaved to the plane of the retina without any complication. The retina was completely attached.

CONCLUSION: Use of ultrasonic fragmentation by a pars plana approach was effective in removing the intravitreally expanded buckling element without harming the retina. (Am J Ophthalmol 2005;139:209–210. © 2005 by Elsevier Inc. All rights reserved.)

MIRAGEL'S ELEMENTS WERE USED EXTENSIVELY FOR scleral indentation in the past. This material is no longer being used. Recently, because of late swelling complications of the material, Miragel's buckles have been subjected to removal.¹ Both extrusion¹ and intrusion² of the Miragel's buckling elements have been reported. A newly described cryoextraction technique seems to be an appropriate method in cases of extrusion, because there are difficulties with grasping of the material, its brittleness, and its fragmentability.³ To date, no surgical technique has been described to manage Miragel's buckles that have intruded into the vitreous. Here we introduce a new approach to remove an intravitreally intruded Miragel's implant by using pars plana ultrasonic fragmentation.

A 72-year-old man was referred to our clinic because of the intruding scleral buckle in his right eye. At the time of presentation, his best-corrected visual acuity was 20/150 and intraocular pressure was 22 mm Hg. The patient had a visibly intruded Miragel's sponge element present behind the intraocular lens, displacing it superiorly and anteriorly. The left eye was normal. He originally underwent repair of a retinal detachment in his right eye in 1988 with a scleral buckling procedure. A Miragel's sponge was used in a radial fashion underneath a solid silicon encircling band, straddling the 6-o'clock meridian. This resulted in reattachment of the retina and a visual recovery of 20/30. In 2000, the patient developed a recurrent inferior retinal detachment in the same eye as a result of intrusion of the scleral buckle. He underwent separate procedures of cataract extraction and pars plana vitrectomy in the right eye that resulted in reattachment of the retina. Since that time the patient has had increasing intrusion of the scleral buckle.

After 4 months of follow-up, progressive shallowing of the anterior chamber, corneal decompensation, and increased intraocular pressure were found. Visual acuity dropped to 20/400. It was decided that the expansion of the buckling element was responsible and surgical intervention was necessary. Institutional review board approval was obtained.

After inferotemporal conjunctival peritomy, the scleral band was cut and released; a portion of the Miragel's

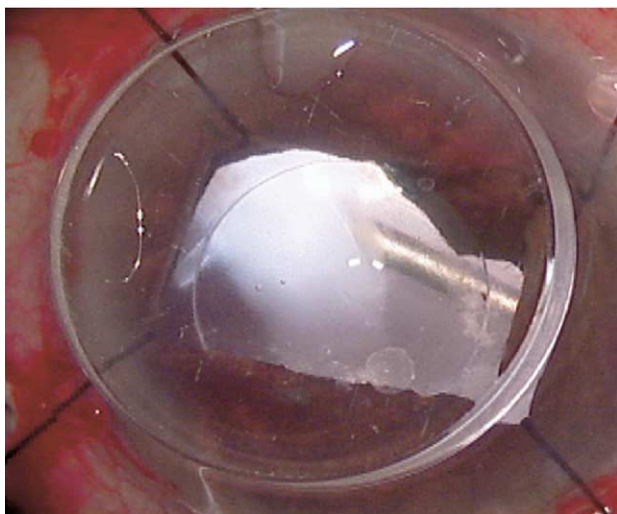


FIGURE 1. Intruded buckle at the beginning of surgery. Pars plana ultrasonic fragmentation was used to remove intruded Miragel's buckle from the vitreous cavity.

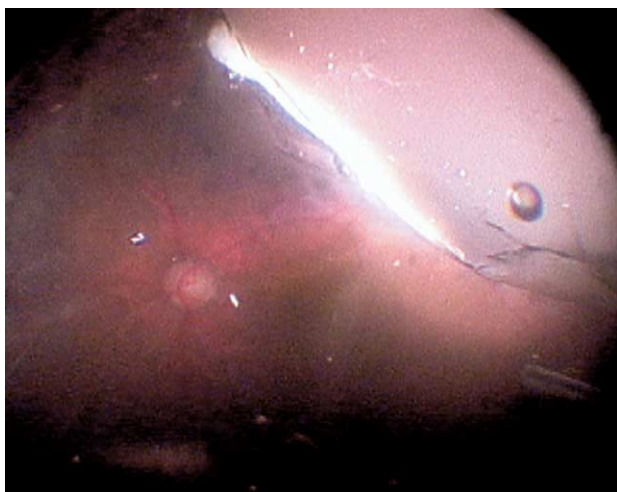


FIGURE 2. Attached retina at the end of surgery. The intruding Miragel's buckle was shaved to the plane of the retina without harming the retina.

buckling element was removed. Episclera was then closed over this area. The anterior chamber was deepened with a viscoelastic solution to push the iris plane away from the cornea. Iris hooks were used to dilate the pupil; a three-port pars plana vitrectomy was then performed. The Miragel's implant was completely plastered against the posterior chamber lens, filling the pupillary region and pars plana region. Initially, an MVR blade was used to chip the buckle into smaller pieces, then a Fragmatome was introduced into the vitreous cavity to ultrasonically aspirate the buckle (Figure 1). More than one third of the vitreous cavity was replaced by the expanded buckle. The Miragel's element was completely removed from the intravitreal

cavity. Only a sliver of buckle material remained at the site of intrusion, and it did not seem to cause any further problem. During surgery, liquid perfluorocarbon was injected to float small fragments anteriorly and to protect the macular area during fragmentation. After an air-fluid exchange, the vitreous cavity was filled with 5,000-centistoke silicone oil (Figure 2). There was no early complication after the surgery, and the retina remained completely attached postoperatively. Visual acuity was 20/200 and intraocular pressure was 14 mm Hg 2 months after surgery. The patient did not show any anterior chamber inflammation or proliferation under the silicone oil.

Using pars plana ultrasonic fragmentation, we were able to remove the Miragel's element from the intravitreal cavity while maintaining integrity of the retina and globe. Considering the probable increase in the number of Miragel's material intrusion cases in the future, the approach introduced here is expected to be useful for surgeons in managing such problems.

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