Delayed Presentation of Emulsified Subretinal Silicone Oil Appearing as an Inverse Macular Pseudohypopyon

The use of silicone oil is well established in complex retinal detachment surgery, and it is still the most frequently used internal tamponade in the management of giant retinal tear. The common complications associated with silicone oil have been extensively described. Subretinal silicone oil is an infrequent but serious complication. The delayed presentation of subretinal silicone oil is uncommon and has previously been described in cases of retinal detachment associated with optic disc pit. We describe an unusual late complication of subretinal silicone oil presenting as an inverse macular pseudohypopyon in a patient successfully treated for giant retinal tear 25 years previously.

Report of a Case. An 80-year-old man attending the clinic for his annual glaucoma follow-up noted gradually worsening vision in his left eye.

He first presented in 1985 with a total retinal detachment in his amblyopic right eye. He was also found to have a nasal giant retinal tear in his left eye that was treated using pars plana vitrectomy, fluid-air exchange, transcleral cryotherapy, a scleral buckling procedure, and infusion of silicone oil. The silicone oil was removed from the left eye in 1990 after 5 years in position. Surgical repair of the right eye was unsuccessful. Six years later, the patient began topical treatment for increased intraocular pressure and remained under long-term follow-up for glaucoma. His visual acuity was previously stable with no light perception OD and 6/60 OS, with advanced field loss in the left eye.

On examination, visual acuity was reduced to 2/60 OS. The anterior segment was quiet with an intraocular pressure of 14 mm Hg. Through a poorly dilating left pupil, the findings of a pale cupped disc and flat retina were unchanged. The left macula had a pale, slightly elevated appearance. Optical coherence tomography showed subretinal opacities in the macular area that were thought to represent submacular fibrosis associated with subretinal fluid in the presence of a full-thickness macular hole (Figure 1A and B). Fundus fluorescein angiography demonstrated staining but no leakage. Owing to the extent of the presumed underlying macular fibrosis and retinal

Figure 1. Sequence of optical coherence tomographic images showing submacular thickening presumed to be due to fibrosis (A), subretinal fluid associated with macular hole (B), macular hole with resolved subretinal fluid (C), and subretinal emulsified silicone oil droplets (D).
pigment epithelial atrophy, the patient was managed conservatively. Follow-up at 4 months showed spontaneous resolution of the subretinal fluid on optical coherence tomography (Figure 1C); visual acuity had returned to 6/60 OS but the macular hole remained open. Four months later, the patient’s vision remained stable but the subretinal fluid had returned. An inverse pseudohypopyon was visible at the macula (Figure 2), and optical coherence tomography now demonstrated the presence of droplet-like particles suggestive of emulsified silicone oil (Figure 1D). The patient declined further intervention. Posturing did not appear to affect the distribution of the oil.

Comment. Silicone oil is a commonly used intraocular tamponade in the surgical management of giant retinal tear. Subretinal silicone oil is a rare but serious complication that can result in loss of internal tamponade and subsequent failure of retinal detachment repair. Silicone oil can migrate into any open retinal break, particularly if the surrounding retina is detached. The delayed presentation of subretinal silicone oil has been described in cases of retinal detachment associated with optic disc pit. We believe that this is the first description of emulsified submacular silicone oil presenting as an inverse pseudohypopyon. It is unclear when the macular hole formed and therefore whether the emulsified silicone oil passed through a newly formed macular hole into the subretinal space or whether subretinal silicone oil migrated to the posterior pole over time. It is possible that emulsification along the posterior oil interface may have allowed tiny droplets to enter the hole, thereby contributing to retinal detachment. Recent imaging studies have observed that silicone oil can pass through an open macular hole under certain postural conditions. It is interesting to note that the level of visual acuity is relatively well preserved despite the possibility that the oil might have been present in the subretinal space for many years.

We postulate that the spontaneous accumulation and resolution of submacular fluid suggest a dynamic process whereby the emulsified oil might act to intermittently close the macular hole, allowing the retinal pigment epithelial pump to clear the fluid when an effective seal is present. We do not have any images to confirm this. This case demonstrates a novel clinical entity that raises further questions about how silicone oil can behave within the eye.

Emily Gosse, MBChB
Jonathan Lochhead, MBBS

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Author Affiliations: Eye Unit, St Mary’s Hospital, Newport, England.

Correspondence: Dr Gosse MBChB, Eye Unit, St Mary’s Hospital, Newport, Isle of Wight PO30 5TG, England (emilygosse@doctors.org.uk).

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Traumatic Airbag Maculopathy

With the prevalence of motor vehicle crashes, airbag deployment is a significant source of ocular trauma. We describe a case of traumatic airbag maculopathy in which imaging studies document a constellation of interesting findings, including subretinal fluid with impending macular hole and persistent paracentral scotoma with underlying electrophysiological disturbance despite anatomical recovery on optical coherence tomography (OCT).

Report of a Case. A 49-year-old woman was involved in a motor vehicle crash at 65 mph, hitting the center divide front-on with airbag deployment. She immediately noted blurry vision. The emergency department evaluation otherwise revealed no traumatic injuries beyond chest contusions. The patient had normal neurological examination findings and never lost consciousness, and no head imaging was indicated. She visited the retina service after having persistently blurry vision for 3 days. Her ocular history consisted of high myopia and retinal detachment in each eye leading to laser demarcation in the right eye. Examination of the right eye revealed visual acuity of 20/150, posterior vitreous detachment, numer-

Figure 2. Color fundus photograph of the left eye showing a macular inverse pseudohypopyon.