Subconjunctival Silicone Oil Drainage through the Molteno Implant

Sung-Min Hyung M.D. and Jin-Pae Min M.D.

Department of Ophthalmology, College of Medicine, Chungbuk National University, Chungbuk, Korea

To describe silicone oil drainage from the vitreous cavity to the subconjunctival space through a Molteno implant. A 52-year-old aphakic man with a Molteno implant inserted after lensectomy, vitrectomy and intravitreal silicone oil injection visited our hospital. The Molteno tube was located in the anterior chamber with two silicone oil drops on it. Corneal dellen, induced by marked bleb-like elevation of the conjunctiva was noted during follow-up and excision biopsy was attempted. The conjunctival elevation consisted of innumerable microdrops of silicone oil enclosed by inflammatory subconjunctival tissue. Silicone oil as well as aqueous humor had drained through the Molteno implant and glaucoma implant surgery may thus not be appropriate for the control of intraocular pressure of aphakia by intravitreal silicone oil before removal of oil.

Key words: dellen, Molteno implant, silicone oil, subconjunctival space

INTRODUCTION

For the management of conditions such as giant retinal tear, proliferative vitreoretinopathy and posterior or recurrent retinal detachment retina surgeon have injected silicone oil into the vitreous cavity.1-3 Secondary glaucoma was reported about 13% (5-40%) of patients in who underwent intravitreal silicone oil injection1,4,5 and who underwent aggressive medical and/or surgical treatment. Surgical approaches included the removal of silicone oil, implant surgery and Nd:YAG transscleral cyclophotocoagulation.1,4,7 Silicone oil drainage from the vitreous cavity to the subconjunctival space has been reported in 2.7% after intravitreal silicone oil injection through pars plana sclerotomy site.4 We report subconjunctival silicone oil drainage through a Molteno implant in an aphakic eye; the silicone oil had been injected intravitreally due to recurrent retinal detachment.

CASE REPORT

A 52 years old man visited our outpatient clinic. He had previously undergone – 21 and 10 months previously – vitrectomy, scleral encircling, fluid gas exchange, lensectomy, silicone oil injection and peripheral iridectomy to manage the rhegmatogenous retinal detachment in his left eye. Forteen months prior to his visit, a Molteno tube had been implanted for the management of the secondary glaucoma. Examination on admission revealed that the right eye had not perceived light for 30 years. Uncorrected visual acuity in the left aphakic eye was 20/400 and intraocular pressure (IOP) was 15mmHg. The Molteno tube was in position in ante-
Fig. 1. Molteno tube with oil drop on its tip.
Fig. 2. Superior anterior chamber angle seen by the gonioscopy. Two oil drops are visible on the silicone tube, and many emulsified oil drops at chamber angle.
Figs. 3, 4. Anterior conjunctival photography shows marked bleb-like conjunctival elevation.
Fig. 5. Tissue biopsy (H/E stain, ×40). Nonspecific inflammation reaction and fibrous septa surrounding vacant cavities. (Oil was removed during H/E staining procedure.)
Fig. 6. Postoperative flattened conjunctiva and incision scar.

rior chamber with two silicone oil drops on it (Fig. 1). Many emulsified oil drops were visible at the angle of 12 o’clock (Fig. 2). The optic disc was pale and nearly total cup. The retina was attached. Six months later, conjunctival bleb-like elevation was noted; this covered nearly two quadrants and had gradually spread from the 12 o’clock to the 8 and 4 o’clock (Figs. 3 and 4). Dellen was seen adjacent to marked elevation (Fig. 4). IOP had increased and could not be controlled by aggressive treatment. The peripheral iridectomy site at 6 o’clock was blocked by whitish fibrous material and not opened by laser iridotomy. The fundus showed that silicone oil remained in half the vitreous cavity. The patient
complained of foreign body sensation, Proparacaine was instilled and the removal of subconjunctival silicone oil attempted but only a little could be removed. Innumerable silicone microdrops had infiltrated deeply into the subconjunctival tissue and were septated by fibrous septa. Subconjunctival tissue biopsy was stained by H/E and silicone oil was separated into several sacs by the septa (Fig 5). After surgery, the superior region of the conjunctiva was seen to be slightly flattened (Fig 6) but the remainder was still elevated. Dellen and foreign body sensation had disappeared and IOP was controlled by medical therapy.

DISCUSSION

As the subconjunctival bleb-like elevation originating in the superotemporal area spread upward and downward, IOP increased according to conjunctival elevation. This bleb-like elevation was, we believe, due to silicone oil which had drained through the Molteno implant, which relatively few patients have received. In this case, we found many silicone oil microdrops smaller than the diameter of the Molteno silicone tube, though it is uncertain that subconjunctival silicone oil had drained through the tube or the narrow space between its and the sclera. Silicone oil was not widely dispersed in the subconjunctival tissue, but had impacted into subconjunctival connective tissue as innumerable microdrops which could not be mechanically removed during operation. We believe this is the first report to describe this phenomenon, but do not know the long term effect of subconjunctival silicone oil. Silicone oil as well as aqueous humor can drain through a Molteno implant and thus glaucoma implant surgery may not be appropriate for the control of IOP of aphakia by intravitreal silicone oil before removal of oil.

REFERENCES