Case Report

Upper Eyelid Silicone Oil Migration after Sutureless 23-gauge Vitrectomy

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Abstract

To report a case of upper eyelid swelling and ptosis caused by silicone oil migration in a patient after sutureless 23-gauge pars plana vitrectomy and silicone oil injection. A 36-year-old female was referred to eye clinic with total retinal detachment (RD) and superotemporal giant dialysis secondary to trauma in the left eye. Transconjunctival sutureless 23-gauge pars plana vitrectomy and intraocular silicone oil (1300 centistokes) injection were performed. After about 5 months, she came back with the left upper eyelid and periorbital swelling. Palpation of the eyelid revealed soft and mobile subcutaneous small lumps that were not attached to the skin. Computed tomography scan of the orbit showed an 11 mm × 8 mm soft tissue density mass in lateral aspect of the left orbit. Transcutaneously surgical exploration was performed. The patient was seen after 1 week postoperatively and there was a significant improvement of the ptosis. Eyelid swelling and ptosis caused by silicone oil migration after RD surgery are very rare and this is one of the few reports in literature.

Keywords: *23 gauge, pars plana vitrectomy, retinal detachment, silicone oil*

Introduction

Silicone oil is a useful tamponading material used in complex vitreoretinal surgery.[1] This material is very stable, nontoxic, and insoluble in body fluids. The concept of using silicone oil as an endotamponade material for managing complex retinal detachment (RD) was first introduced by Cibis *et al*. in 1962.[2]

The silicone oil is most frequently indicated in rhegmatogenous RDs that complicated by proliferative vitreoretinopathy, giant retinal tears, rhegmatogenous, or combined tractional RD due to proliferative diabetic retinopathy, ocular trauma, RD complicated by iris neovascularization, patients without compliance for positioning and postoperative fluid – gas exchange and plan of air traveling by the patient. The use of silicone oil as a tamponading material for the treatment of complicated RD is common, but some postoperative complications may happen.[3-7]

Postoperative complications such as refractive error changes, band keratopathy, oil emulsification, optic atrophy, and glaucoma. To prevent these complications, the silicone oil has to be removed after few months of injection.[8-11]

Migration of silicone oil from the vitreous space into the upper eyelid, after pars plana vitrectomy with intraocular silicone oil injection, is a very rare complication.[12-14]

We report a patient who developed unilateral upper eyelid swelling and ptosis 5 months after pars plana vitrectomy and silicone oil injection.

Case Report

A 36-year-old female was referred to Feiz Hospital in Isfahan with blurring of vision in her left eye. She had a history of car accident and blunt trauma to her left eye 10 days ago. Patient examination revealed visual acuity of 20/20 in the right eye and light perception in the left eye. Positive relative afferent pupillary defect (RAPD) was detected in her left eye. Extraocular muscle motility was normal in both the eyes. In funduscopy examination, total RD with superotemporal giant dialysis with a fixed fold behind it was detected.

Pars plana vitrectomy with 23-gauge sutureless vitrectomy system performed and intraocular silicone oil (1300 centistokes, Heidelberg, Germany) injected. The oil was slowly injected manually through the

How to cite this article: Dehghani A, Rezaei L, Tavallali A, Dastborhan Z. Upper Eyelid Silicone Oil Migration after Sutureless 23-Gauge Vitrectomy. Adv Biomed Res 2017;6:58.

Received: February, 2016. **Accepted:** August, 2016.

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Access this article online

Website: www.advbiores.net

DOI: 10.4103/2277-9175.206698

Quick Response Code:

superotemporal sclerotomy by an infusion cannula, and the intraocular pressure (IOP) was at 17 mmHg with the air pump until the end operation. At the time of postoperative examination, the retina was attached and IOP ranged from 10 to 20 mmHg.

After about 5 months, she came back with the left upper eyelid drooping and periorbital swelling. The swelling was round, red, painless, involving the upper eyelid and induced severe ptosis [Figure 1]. Palpation of the eyelid revealed soft and mobile subcutaneous small lumps that were not attached to the skin [Figure 2]. Visual acuity was 20/20 in the right eye and still light perception in the left eye. Computed tomography scan of the orbit showed an 11 mm × 8 mm soft tissue density mass in lateral aspect of the left orbit [Figure 3].

The hyperdense homogenous opacity, which corresponds to silicone oil occupied about 50% of the vitreous cavity [Figure 4]. Surgical exploration was done transcutaneously. Excision of the oil material was done and all spaces were cleaned. The patient was seen after 1 week postoperatively and a significant improvement of the ptosis was seen.

Discussion

The 23-gauge transconjunctival vitrectomy introduced for the first time by Eckardt and this type of surgery is commonly accepted by vitreoretinal surgeons to the operation of RD.[15]

Silicone oil has been commonly used to prolong tamponade since the 1960s. Rare complications of silicone oil migration, such as migration into the brain, subconjunctival space and orbit, eyelid, subretinal space, and subarachnoid space have been reported in literature.[16-20]

Silicone oil may migrate out of the globe through a glaucoma valve into the subconjunctival space, the orbit and the eyelid,[12,16,17] and through the optic nerve and into the lateral ventricles of the brain.[16-19,20] Furthermore, silicone oil may migrate into the other intraocular tissue space out of the vitreous space, such as migration into the anterior chamber of the pseudophakic eye, retrolaminar space of the optic nerve, subretinal space, and subarachnoid space.[19,20]

To our knowledge, there have been three papers that reported four cases of silicone oil migration from the

Figure 1: Patient photograph shows the swelling of the left upper eyelid and induced severe ptosis

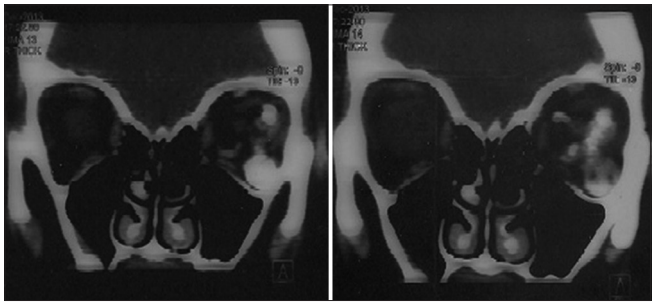

Figure 3: Orbital computed tomography scan, axial incidence, shows an 11 mm × 8 mm soft tissue mass in lateral aspect of the left orbit

Figure 2: This photograph shows soft and small subcutaneous lumps in the left upper eyelid

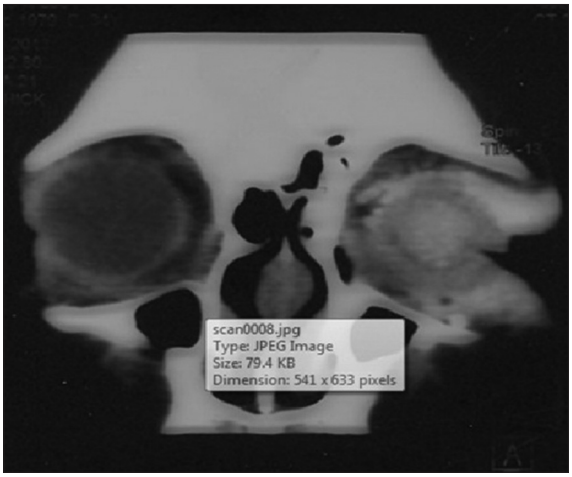

Figure 4: Orbital computed tomography scan shows hyperdense homogenous round opacity corresponding to silicone oil in the anterior half of the left vitreous cavity and lateral aspect of the left orbit

vitreous space into the upper eyelid causing ptosis after a 20-gauge vitrectomy system with suturing of the sclerotomies.[12-14]

Uintyn *et al*. reported a case of silicone oil migration in the upper eyelid, presented by ptosis occurrence 19 years after pars plana vitrectomy followed by subretinal fluid drainage and silicone oil injection in a 57-year-old man for RD.[12]

Donker *et al*. reported two cases of unilateral upper eyelid swelling 1 and 8 years, after pars plana vitrectomy with intraocular silicone oil. In the first case, the oil was still present in the eye. In the second case, the intraocular oil and a buckle had been removed 7 years earlier.[13]

Deguchi *et al*. reported a 65-year-old woman with proliferative vitreoretinopathy in the right eye. She developed the right eyelid swelling 2 months after vitrectomy and silicone oil injection.[14]

The physiopathological mechanism of silicone oil migration into eyelid is not well known. We conclude that wound leakage after sutureless 23-gauge pars plana vitrectomy may be complicated by the silicone oil traveling in the surrounding structures, the unsutured sclerotomy is the most likely root for migration of silicone oil from the vitreous space to the orbital space.

Conclusion

We report a rare case with postoperative complication caused by migration of silicone oil. In cases with the eyelid swelling and decreased silicon oil in the vitreous space, surgeon should be aware of this complication.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Acknowledgment

The authors thank Sharife Rezaei for rendering assistance in this project.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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