

Entry of antibiotic ointment into the anterior chamber following sutureless clear corneal incisions phacoemulsification: a case report

Sheng-Li Hao, Zhi-Heng Liu, Zhi-Guo Gao, Guo-Zhi Xu

Department of Ophthalmology, Tianjin Municipal Hospital of Dagang, Affiliated Hospital of Tianjin Medical University, School of Clinical Medicine, Tianjin 300270, China

Correspondence to: Sheng-Li Hao. Department of Ophthalmology, Tianjin Municipal Hospital of Dagang, Affiliated Hospital of Tianjin Medical University, School of Clinical Medicine, Tianjin 300270, China. taishanmaple@126.com

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Abstract

• **AIM:** To report a case of entry of antibiotic ointment into the anterior chamber following sutureless clear corneal incisions phacoemulsification.

• **METHODS:** A 62-year-old man had uneventful phacoemulsification with clear corneal incisions with intraocular lens (IOL) implantation. Postoperative medication included antibiotic/steroid ointment; the eye was firmly patched at the end of the procedure. On the first postoperative day, the patient was seen an oily droplet floating in the anterior chamber. Immediate surgical removal of the ointment without IOL exchange was performed.

• **RESULTS:** During follow-up for six months after irrigation/aspiration of the anterior chamber and removal of the oily droplet, visual acuity and intraocular pressure (IOP) were unchanged and anterior segment was formed and quiet.

• **CONCLUSION:** Ophthalmic ointment may ingress into the anterior chamber through unstable clear corneal incisions. The case highlights the importance of appropriate wound construction and integrity, as well as the risk of tight eye patching following placement of ointment.

• **KEYWORDS:** antibiotic ointment; anterior chamber; phacoemulsification

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INTRODUCTION

Phacoemulsification with intraocular lens (IOL) implantation is a commonly performed procedure. Instillation of antibiotic ointment into the conjunctival fornix at the completion of surgery is still routinely practiced. Intraocular ophthalmic ointment retaining after cataract surgery is a rare but potentially serious condition that might lead to corneal decompensation, uveitis, secondary glaucoma or toxic anterior segment syndrome. We report a case of intraocular ingress of antibiotic ointment after sutureless clear corneal incisions phacoemulsification.

CASE REPORT

The patient was a 62-year-old man. He was referred to our department with decreased vision in both eyes. The right eye had best-corrected visual acuity (BCVA) of 0.12, the left eye had BCVA of 0.2. He had no known history of systemic and other ocular diseases. On May 17, 2010, the patient had uneventful phacoemulsification in the right eye, topical anesthesia was used and a clear corneal superior incision was made with a 3.2 mm keratome, a side port (1.8mm), a standard continuous circular capsulorhexis performed. The superior corneal incision was made using a 3-step construction, and the side port was made using a 1-step construction. A single-piece Hydrophilic Acrylic posterior chamber IOL (Aqua-Sense, Ophthalmic Innovations Intl) was inserted in the capsular bag using an introducer. Viscoelastic material was removed and the anterior chamber was reformed with a balanced salt solution via the side port, no leakage was found at the wound site, the clear corneal incisions remained sutureless. At the end of the surgery, tobramycin 3g/L dexamethasone 1g/L ophthalmic ointment (TobraDex) was applied into the inferior conjunctival fornix to prevent infection, the eye was firmly covered with an eye patch and shield.

On the first postoperative day, visual acuity was 0.5 and IOP was 16 mmHg, an oily droplet was noted floating superiorly in the anterior chamber without occlusion of the visual axis (Figure 1). After a review of the surgical events, it was apparent that the tobramycin dexamethasone ointment used immediately postoperatively had entered the anterior chamber.

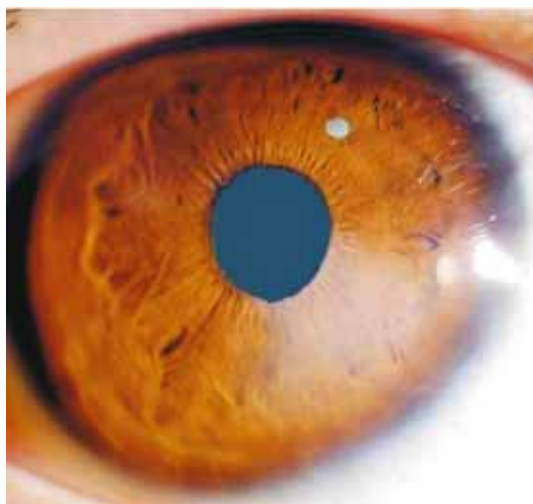


Figure 1 Slit-lamp photograph showing an oily droplet floating in the anterior chamber.

A surgical removal of the oily droplet was planned emergently to prevent the possible intraocular toxicity. The anterior chamber was extensively washed out and the oily droplet was aspirated, the IOL was not exchanged. Interrupted 10/0 nylon sutures were used to maintain a formed anterior chamber. One week after surgery, visual acuity was 0.6 with IOP of 18mmHg, examination showed a formed and quiet anterior chamber. During follow-up for six months after surgery, visual acuity and IOP were unchanged and anterior segment was formed and quiet.

DISCUSSION

Incidental entry of antibiotic ointment into the anterior chamber after sutureless clear corneal phacoemulsification with various reactions has been previously reported. Murjaneh *et al*^[1] reported two cases of possible intraocular ingress of antibiotic ointment (framycetin sulphate) after sutureless clear corneal section phacoemulsification without any adverse reaction. Other authors reported the retained ointment in the anterior chamber after phacoemulsification might cause severe corneal decompensation, uveitis, secondary glaucoma or toxic anterior segment syndrome^[2-5].

The effects of ointment in the eye were evaluated by Scheie *et al* by injecting common ophthalmic ointment in the anterior chamber of rabbit eyes. They found that the major predictor of reaction severity within the eye was the amount of ointment instilled. A volume of 0.01mL had little or no effect on the eye, regardless of type of ointment, while a volume of 0.1mL produced an overwhelming reaction in most eyes with prompt secondary glaucoma and loss of the globe. Clinical outcomes were better when oily material was present as a solitary droplet floating in the anterior chamber^[4, 6]. More severe complications were observed when oily material was observed as film-like coating the corneal endothelium^[4].

The means of entry of ointment into the anterior chamber in

cases may be related to wound leak with possible mechanisms including negative pressure upon removal of the lid speculum, squeezing of the eyelids, vigorous eye rubbing or pressure patching^[7-9]. Hypotony due to a leakage in the wound may have facilitated the entry into the anterior chamber.

In our case, the ointment entered the anterior chamber through the sutureless clear corneal section. Although we were unable to get our sample analyzed to confirm our clinical findings, but the appearance, consistency and the surgical behaviour of this substance were consistent with our clinical diagnosis. In our case, if timely intervention had not been carried out, there would have been a risk of intraocular toxicity from the ointment.

We conclude that sutureless clear corneal incisions phacoemulsification may hold an increased risk of antibiotic ointment ingress into the anterior chamber^[10]. Although the ointment in the anterior chamber may remain quiet for some time and may be extracted without complications, it should not be considered totally innocent. This case highlights the risk of ophthalmic ointment application with clear corneal incisions phacoemulsification.

In summary, there are several procedural modifications that should prevent ophthalmic ointment from entering the anterior chamber. Foremost, we recommend using antibiotic/steroid drops instead of ointment^[1, 6]. If ophthalmic drops gain access to the anterior chamber, aqueous solutions and suspensions should have a shorter residence time than ointment^[6]. Secondly, patients should be instructed not to rub their eyes and a well-affixed protective shield should be worn at night for a few weeks postoperatively. Furthermore, there is probably no need for a pressure patch, which could distort the wound and make it incompetent. Finally, a review of the patient on the first postoperative day allows early discovery of potential problems and regular follow-up visits permit surveillance. If any signs of toxicity are seen, the ointment should be immediately removed^[6].

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无缝线透明角膜切口白内障超声乳化术后抗生素眼药膏进入前房 1 例

郝胜利, 刘志恒, 高志国, 徐国志

(作者单位:300270 中国天津市大港医院眼科,天津医科大学临床医学院附属医院)

作者简介:郝胜利,硕士,住院医师,研究方向:眼底病。

通讯作者:郝胜利. taishanmaple@126.com

摘要

目的:报告无缝线透明角膜切口白内障超声乳化术后抗生素眼药膏进入前房的病例 1 例。

方法:患者,男,62岁,行透明角膜切口白内障超声乳化联合人工晶状体植入术,术中顺利。术毕使用抗生素类固醇眼药膏,术眼给予加压包扎。术后第 1d,观察到一油滴状物漂浮于前房,紧急行手术清除前房内进入的眼药膏,未置换人工晶状体。

结果:前房灌洗及清除油滴状物后,随访 6mo,视力及眼压均保持稳定,前房结构稳定,无炎症反应。

结论:眼药膏可通过不稳定的透明角膜切口进入前房。通过本病例应该认识到,白内障切口及其完整性非常重要,使用眼药膏后术眼给予加压包扎有一定的风险。

关键词:抗生素眼药膏;前房;白内障超声乳化术