

Fibrin glue for sealing early bleb leak : a case report

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Received: 2009-02-01 Accepted: 2009-04-30

Abstract

• A 63-year-old male presented with sudden diminution of vision, eye discomfort, redness and watering in his left eye. He had undergone glaucoma valve filtering surgery for refractive secondary glaucoma one week back. He also had a history of failed augmented trabeculectomy one year earlier in the same eye. Ocular examination showed best corrected visual acuity (BCVA) of 6/18 and there was a bleb leak, shallow anterior chamber and intraocular pressure (IOP) of 6mmHg. Successful sealing of bleb leak was performed using fibrin glue resulted in deepening of anterior chamber with IOP of 13mmHg. This case demonstrates that, fibrin glue is an effective method for management of early filtering bleb leak.

• **KEYWORDS:** fibrin glue; bleb leak; filtering surgery

DOI: 10.3969/j.issn.1672-5123.2009.05.007

Alashwal AH, Yaakub A, Noor RAM, Tajudin LSA. Fibrin glue for sealing early bleb leak: a case report. *Int J Ophthalmol (Guoji Yanke Zazhi)* 2009;9(5):831-832

INTRODUCTION

A leaking filtering bleb has been known as a common complication of glaucoma filtering surgery. It may be encountered in the early postoperative period or months to years after surgery. Its occurrence increases with the growing popularity use of antimetabolites in glaucoma surgery^[1]. The bleb leak may be uncomplicated and self-limiting or may be associated with numerous ocular complications. These complications include shallow and flat anterior chamber, hypotony, cataract formation, choroidal detachment, hypotony maculopathy and bleb failure^[2,3]. Furthermore, a leaking bleb may predispose the patient to vision-threatening infection such as endophthalmitis^[4]. Nevertheless these complications can be avoided with appropriate management of the bleb leak. Fibrin glue is a group of blood products consists mainly of two components: fibrinogen and thrombin which leads to the formation of a fibrin clot at the site of application. The use of this material has increased in numerous ophthalmic surgeries including glaucoma surgery^[5].

CASE REPORT

A 63-year-old male presented with sudden decrease in vision, eye discomfort, redness and watering in his left eye. He had undergone glaucoma valve filtering surgery for refractive uveitic glaucoma one week back. He also had a history of failed augmented trabeculectomy which was done one year earlier on the same eye. Eye examination showed best corrected visual acuity (BCVA) of 6/18 OS, shallow bleb, Seidel test was positive and leak was observed over the temporal part of the bleb. The anterior chamber was shallow and intraocular pressure (IOP) was 6mmHg. The patient was diagnosed to have an early bleb leak.

Conservative management of bleb leak with torpido eye padding, aqueous suppression and prophylactic topical antibiotics were attempted. Unfortunately this management was ineffective and conjunctival flap resuturing was performed. Although care was taken in handling the conjunctival tissue and meticulous suturing techniques was performed, however, on the second day bleb showed leakage again from the same site.

As the IOP was persistently less than 7mmHg and conservative and resuturing management were failed, sealing of the leak with fibrin glue was considered. The eye was cleaned with povidone iodine and few drops of topical anesthesia (benoxinate hydrochloride 4g/L) were instilled into the conjunctival sac. The fibrin glue (Tisseel) was prepared in advance according to the manufacture instructions. Small amount of the glue then injected to the bleb over the area of leakage using a 27-gauge needle and lifted about 5 minutes to dry. A fluorescein strip was placed over the leaking site to confirm that the bleb was successfully sealed. Eye examination on day one post procedure showed no sign of leakage, Seidel test was negative and anterior chamber was deepened with IOP 12mmHg (Figure 1). The BCVA was improved to 6/9 and the cornea was clear.

DISCUSSION

The bleb leakage becomes more common ocular problem following trabeculectomy and more than ever with the use of concomitant antimetabolites in this surgery. Early postoperative bleb leak may be related to patent stitch tracts, inadequate wound closure, and surgical trauma to the conjunctiva causing conjunctival button holes^[6]. A various conservative techniques have been described to address filtering bleb leak, including aqueous suppression, an eye patch, collagen shields or oversized contact lens, and subconjunctival injection of autologous blood^[7,8]. However, these techniques are often inadequate to manage bleb leak and more invasive surgical methods are commonly required, such as free conjunctival patch grafts^[9], and scleral grafts^[10].

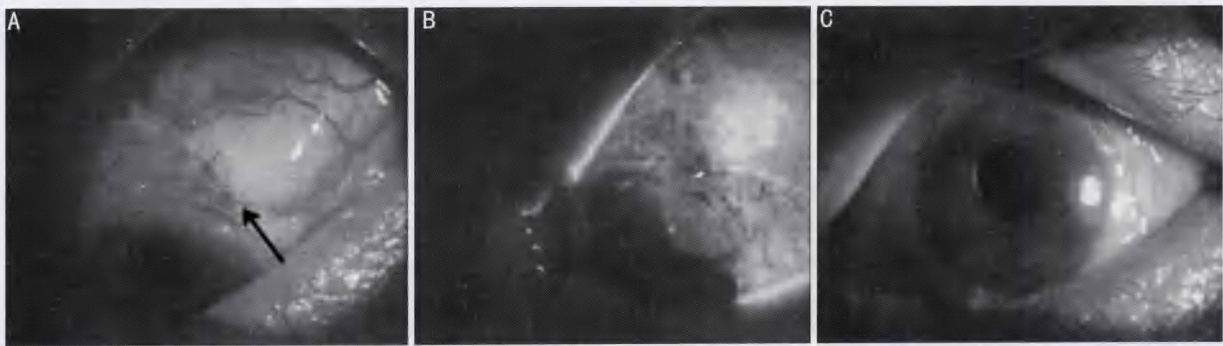


Figure 1 A: site of bleb leak (arrow) ; B: bleb intact post sealing with negative Seidel test; C: clear cornea and deep formed anterior chamber

Recently application of tissue adhesive such as fibrin glue grows to be widely accepted as sutures alternative in ophthalmic discipline. However, its use in glaucoma surgery and in bleb leak management is still a relatively novel concept. Asrani and Wilensky^[11] reported the treatment of bleb leaks with autologous fibrin tissue glue. They found that, nine of the 12 bleb leaks were successfully healed. However, Seligsohn *et al*^[12] concluded in their case series that, fibrin glue (Tisseel) may not be an effective treatment of leaking blebs and hypotony following trabeculectomy. On the other hand a recent study, Valimaki^[13] investigated the use of fibrin glue to prevent leaks around silicone tube entry sites in glaucoma device implantation. They concluded that, the primary intraoperative use of fibrin glue was a good option for reducing peri-tubular leaks and preventing immediate postoperative hypotony after drainage device implantation. In this report we demonstrated the successful use of fibrin glue in sealing early bleb leak. We think that, fibrin glue is a valuable method to seal early bleb leak where the tissue still vascularized. On the other hand, it could be not of much help in late bleb leaks that occur years after surgery because they are often very avascular and no viable tissue left.

CONCLUSION

In conclusion, we have found that the fibrin glue is a safe and effective technique in management of an early bleb leak and also has advantages over the other methods. It can be placed quickly over the site of leak with potentially no risk of buttonholing of the conjunctiva. Furthermore, its use can simplified the procedure and cut down the time.

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纤维蛋白胶封闭早期滤过泡漏 1 例

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摘要

患者,男,63岁,以“左眼突发视力下降,眼部不适,眼红,流泪”主诉就诊。1wk前因继发性青光眼行青光眼阀植入术。同一眼1a前曾行扩大的小梁切除术,手术失效。眼科检查结果:最佳矫正视力为6/18,有滤过泡漏,前房浅,眼压6mmHg。应用纤维蛋白胶成功封闭滤过泡漏,前房加深,眼压升至13mmHg。此病例说明纤维蛋白胶是治疗早期滤过泡漏的有效方法。

关键词:纤维蛋白胶;滤过泡漏,滤过术