

## Case report

# Traumatic scleral wound dehiscence with filtering bleb formation after surgical repair of penetrating globe injury

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## Abstract

**Background:** Filtering bleb formation after surgical repair of penetrating globe injury is a rare occurrence. **Case:** A 45-year-old male who had undergone surgical repair of a corneoscleral laceration 16 months earlier presented to emergency room after blunt trauma to the left eye. His best-corrected visual acuities were 20/20 in the right eye and 20/25 in the left. An anterior segment examination found a conjunctival filtering bleb formation on scarred sclera at superotemporal location near the limbus. Anterior chamber was slightly shallow and the Seidel test was negative. Intraocular pressures were 17 mm Hg in the right eye, 7 mm Hg in the left. The fundus examination revealed no abnormal findings. The patient was treated with topical application of a steroid and a cycloplegic drop during three weeks. After 16 months follow-up, the visual acuity remained unchanged with the persistence of filtering bleb. IOP was 8 mm Hg in the left eye. Follow-up examinations showed no complications related to trauma. **Conclusion:** Blunt ocular trauma can cause dehiscence in old scleral scars and subsequent filtering bleb formation.

**Key-words:** filtering bleb, penetrating globe injury

## Introduction

Blunt trauma to the eye frequently leads to various ocular manifestations including damage of the cornea, iris, lens and retina (Viestenz et al, 2004). Since the eye behaves like an incompressible sphere because of its liquid contents, blunt trauma which has sufficient magnitude may result in a rupture of the eyeball at the site of minimal resistance (Cherry, 1978). The current case report presents a patient who underwent a corneoscleral laceration repair and developed a wound dehiscence in the old scar after a blunt trauma to his left eye that resulted in a filtrating conjunctival bleb formation.

## Case description

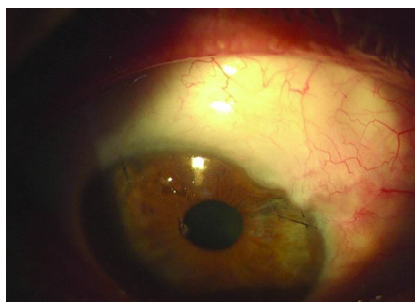
A 45-year-old male who suffered from a work-related accident presented to our emergency

department after a blunt trauma with a hard plastic bullet. According to the patient, he had not been using any protective glasses. The patient had a past history of corneoscleral laceration repair after a penetrating injury with a small piece of iron to the same eye. His left eye had undergone primary repair of a 7 mm corneoscleral laceration which extended from the sclera to the cornea transecting the limbus 8 months before the second trauma.

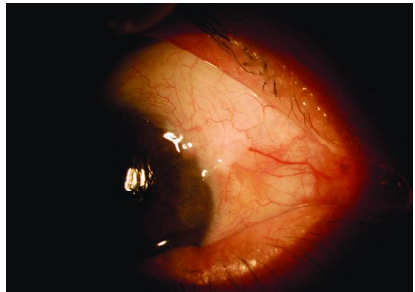
On examination, there were no restrictions in the extraocular movements and the pupillary reflexes were normal. His best corrected visual acuities were 20/20 in the right eye and 20/25 in the left. Biomicroscopic anterior segment evaluation of the left eye revealed a filtrating conjunctival bleb formation filled with aqueous humour surrounded by subconjunctival haemorrhage at the site of the previous injury (Figure 1). The anterior chamber was slightly shallow and the Seidel test was negative. Intraocular pressures with Goldman applanation

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tonometer were 17 mm Hg in the right eye and 7 mm Hg in the left. No abnormality was noted on detailed fundus examination with a 90 diopter lens. The orbital structures were intact on a computerized tomography scan. The patient was treated with topical application of a steroid drop (qid) and a cycloplegic agent (tid) in decreasing dosages for three weeks. The filtering bleb still persisted on the last visit (Figure 2). The intraocular pressure of the left eye was 8 mm Hg. The visual acuity was maintained during the 16 months' follow-up after the blunt trauma. No further treatment was required.



**Figure 1:** Biomicroscopic view of filtering bleb at the site of the previous penetrating injury.



**Figure 2:** Persisting filtering bleb 16 months after blunt trauma.

### Discussion

Filtering conjunctival bleb is the goal of filtering glaucoma surgeries such as Trabeculectomy (Wilson, 1977). Infrequently, inadvertent filtering blebs can occur after cataract surgeries both with scleral tunnel and clear corneal incisions (Jain, 2005; Kass, 1982). Although remodeling occurs in both corneal and scleral incisions, residual mechanical weakness persists across scars even after several months (Davison et al, 1986). Such patients may be more

susceptible to blunt injuries. It is important to notice that precautional measures including protective eyewear should be taken in order to prevent these types of injuries, and the patients who had corneal/scleral laceration must be counselled about how to protect themselves.

If any complications such as hypotony maculopathy typically in patients with an IOP of less than 5 mmHg or infections due to bleb formation occur in follow-up visits, the sclera can be repaired by tightly suturing it or amnion membrane and scleral patch. In our patient, owing to the absence of signs of disrupted globe integrity or major complications of blunt trauma affecting vision, a conservative concept was followed.

To the best of our knowledge, this is the first case presenting with a filtering conjunctival bleb that resulted from a blunt trauma after the repair of corneo-scleral penetrating injury.

### Conclusion

Blunt ocular trauma can cause dehiscence in old scleral scars and subsequent filtering bleb formation. The first step to appropriate management is the recognition of this rarely reported occurrence.

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