

# Cut or Not-to-Cut: An Unusual Presentation of Penetrating Lower Eyelid by a Foreign Body: A Rare Case Report

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## Abstract

In literature, we can find many different types of objects causing eyelid injury. There is a variety of objects which is found in clinical scenarios and literature. The aim of the treating surgeon should be to remove of the foreign body making no or little damage to surrounding vital structures. This unique case report describes a penetrating type of lower eyelid injury that is inserted through the inner surface of the eyelid in an unusual manner. A 6-year-old child was admitted to the hospital with a lower eyelid metallic foreign body. Upon examination, anterior and posterior segments were found to be normal and so does the visual acuity. The metallic wire passed through the lower eyelid through the bulbar conjunctival side in the middle of the eyelid. The wire was stuck in such a manner; under topical anesthesia it could not be removed. The patient was put into general anesthesia and without cutting the adjacent structure it was removed by twitching manner following the curve of the wire. The wire had 270° of bending on it. Post-operative recovery was quick with not any residual structural damages. A severe eyelid injury with unusual site of penetration can be removed just by appropriate method without any structure defect and with a good outcome.

**Key words:** Eyelid foreign body removal, Eyelid injury, Suture less removal

## INTRODUCTION

In ophthalmological practice, intraocular foreign body is quite a common finding. This ranges from sharp metallic objects to organic matter. However, isolated eyelid foreign body is unusual but prevalent in fishermen with a fishhook injury.<sup>[1]</sup> The main concern for an ophthalmologist is to identify the type of injury, structure involved, and degree of damage, finding the proper technique to remove the foreign body and to prevent further damage to other ocular structures.<sup>[2]</sup>

This case report demonstrates an unusual type of lower eyelid foreign body, with an unusual route of entry.

## CASE DESCRIPTION AND RESULTS

A 6-year-old male child and his parents were rushed to an eye emergency with an injury to the lower eyelid by a metallic wire 1 hour ago. On asking parents, they told that the child was playing with a toy and accidentally the wire, which is attached to the toy, penetrated to the lower eyelid of the patient. They have also tried to remove the wire by themselves but after multiple failed attempts they brought the child to an eye emergency. One end of the wire was penetrated through the conjunctival side of the lower eyelid and the other end was hanging freely. There is only entry wound and no exit would be found making it a partial thickness lid injury. After proper reassurance under topical anesthesia with 0.5% proparacaine the child was examined primarily [Figure 1].

### On Examination

The child was anxious, Glasgow coma score 15/15; blood pressure (BP) 110/68 pulse rate (PR) 102/min SpO<sub>2</sub> 97% in room air.

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Ocular examination (both eyes) revealed:

VA < 6/6p

Digital intraocular pressure (IOP) < WNL.

**EOM< Full and Free in all Gazes, NO Restriction Noted**

Eyelid: Right eye's lower eyelid is turned outward to a small degree due to metallic wire, no wound mark is seen on the skin surface, and the lower eyelid is mildly swollen.

The upper eyelid appears normal

OS: WNL

Conjunctiva< Wnl, on eversion of right lower eyelid entry wound is noted through lower palpebral conjunctiva.

Cornea< Clear, FS negative

AC< Quiet, WNL

Pupil < Round regular reactive

No visible other injury noted and eyeball seems to be intact

Dilated funduscopy reveals normal fundus, disc, and visible retina wnl.

**Pre-Operative Evaluation**

As the patient was in distress and slit lamp examination and dilated funduscopy revealed that there is no global involvement, we planned for examination of the affected eye under a microscope and removal of a foreign body under General anesthesia.<sup>[3]</sup> The patient was admitted, after a proper medicolegal procedure.

**Primary advice**

Injection 'TT' (as no vaccination documents provided), injection antibiotic; injection analgesic, and nil per mouth.

An emergency pre-anesthetic check-up was done by an anesthetist and parents were explained about the procedure, the expected complications, and possible outcomes. Proper informed consent was taken from the parent as the patient was a minor.

**Intraoperative Management**

After 4 h of NPM, the patient was shifted to operation theatre. After putting the patient under general anesthesia, a surgical team of three ophthalmic surgeons started the case [Figure 2].

The dilemma was whether to remove the wire by giving an incision to the palpebral conjunctiva and exploring the wound or to simply remove the wire through its own route of entry.



**Figure 1: (a and b) pre-operative picture of the child with penetrating eyelid injury. With and without everting the lower eyelid**



**Figure 2: Demonstrate child has been initiated and put under General anesthesia**



**Figure 3: The metallic foreign body with angulation at its tip**

On examination under the microscope, the lid was everted and the entry wound was observed thoroughly. Before incision and exploration of the wound, at first, an attempt was made to remove of the wire gently. The lid



**Figure 4: Post-operative day 1: Happy patient**

was everted. The wire was held at its base with an artery forceps. A straight smart pull doesn't help to remove the wire. Then, the surgeon held and gave a rotational force to the wire. Surprisingly, the wire started to come out of the wound, the surgeon then made a one-and-a-half circular turn to move the wire out of the lower eyelid. Pressure was applied to confirm hemostasis. Associated structures were examined for other signs of injury. Fortunately, no other structures were found to be injured [Figure 3].

Eyeballs appeared intact. No gross lid injury was noted. No visible injury was noted over the nasolacrimal drainage system.

After throughout examination and after proper hemostasis, the eye was closed with an eye pad, and a tight pad bandage was applied.

The anesthesia team extubated the patient.

#### **Post-operative vitals**

BP 130/88 PR 89/min SpO<sub>2</sub> 98% in Room air.

As the patient was stable, he was shifted to a general bed, and previous advice was followed.

#### **On the post-operative day 1**

The child was playful and happy. BP 110/72 PR 76/min SpO<sub>2</sub> 97% in RA [Figure 4]

VA < 6/6p

D.IOP < WNL

EOM < full and free in all gazes, no restriction noted

Eyelid: OD's lower eyelid is mildly swollen. The upper eyelid appears normal

OS: WNL

Conjunctiva < Wnl

Cornea < Clear, FS negative

AC < Quiet, WNL

Pupil < Round regular reactive

No visible other injury noted and eyeball seems to be intact

Dilated fundoscopy reveals Normal fundus, disc, and visible retina wnl. No other abnormalities were noted.

#### **Post-Operative Day 1, Happy Patient, with no External Signs of Injury**

As the patient was stable, he was discharged on post-operative day 1 with oral analgesic and antibiotics and asked to follow-up after 7 days.

## **DISCUSSION**

An orbital foreign body is quite a common entity among which penetrating eyelid injury is reported in the literature. These include glass, stone, wood, buttons, metal, fishhook, and many more. The main concern in the case of a foreign body is whether the globe is intact or not, whether any part of the eye is injured or not, and the appropriate method of removing the foreign body without causing injury to adjacent structures.<sup>[4]</sup>

A detailed review of the literature has been done, and it has shown that fishhook type of injury is quite common, especially in coastal areas and there are a variety of methods of removal namely vertical eyelid splitting, retrograde, advanced and cut, needle cover, etc.

However, there was no case report of partial thickness metallic wire injury of the lower eyelid with conjunctival approach; hence, it is unique in its own way. The unusual aspect of this case is firstly the mode of injury, that is, the wire was introduced by the child himself and with directions from internal to external. Second, despite enough force, there has been minimal trauma to the eyelid and no trauma to the eyeball.<sup>[5]</sup>

The role of topical anesthesia is questionable, as reported by many authors because the child has been anxious and hence, non-cooperative. Removing foreign bodies in such patients may inadvertently cause further damage. Hence, removing the wire under general anesthesia is considered to be the appropriate method. There are no significant differences between the number of days of ambulation, post-operative complications, and pursuing normal activities.<sup>[6]</sup>

Moreover, general anesthesia causes muscle relaxation, blocks the memory of the procedure, analgesia, and

making the procedure easy for both the surgeon and the uncompliant patient.

In addition, to removing the wire, post-procedure wound care and follow-up are also uttermost important. Usually, no wound closure with the suture is required, and this small wound will heal on its own. Antibiotic ointment and routine wound dressing are sufficient in this case. Pre-operative tetanus toxoid is must in case of unavailability of vaccination status.

This case demonstrates a severe penetrating lower eyelid injury with no intraocular penetration, no corneal injury with an uncomplicated post-operative period, and a full recovery.

## CONCLUSION

Severe penetrating eyelid injury can be uncomplicated, if a proper pre-operative assessment is taken, the appropriate choice of anesthesia is administered, an appropriate technique of removal is followed, and if there is no associated injury of vital structures.

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