

# Fish-hook injury of the eye

Rupesh Agrawal · Augustinus Laude ·  
Mukesh Taneja

Received: 3 February 2012 / Accepted: 2 March 2012 / Published online: 29 March 2012  
© Springer Science+Business Media B.V. 2012

**Abstract** The objective of this case report is to report two cases of fish-hook injury to the eye and ocular adnexa with review of literature. Both patients with fish-hook injuries were professional fishermen. The first subject was hit in his right eye by a hook which became embedded in the right cornea. He cut off the line but made no attempt to remove the hook and presented to the emergency department with the hook hanging from his right eye. Under general anaesthesia, the hook was rotated out without causing any further damage to the cornea and intraocular structures. The second subject was reeling the hook back to shore when it hit him in the face and embedded itself in the upper eyelid. He was immediately taken to the emergency department and after careful examination the eye was found to be unharmed and the hook was removed through a small incision under local anaesthesia. Fish-hook injuries, though rare, can result in visual morbidity. The hook should be removed under careful examination using the correct technique. The shaft of the hook should be left long and no attempt should be made by the subject or any

non-trained person to remove it as doing so can result in further damage.

**Keywords** Fish-hook · Fish-hook injury · Corneal perforation · Techniques of fish-hook removal from the eye

## Introduction

Fishing is a popular leisure activity in many parts of the world. Fishing with a rod and hook is probably the most common and popular form, partly because you can fish from the riverbank or seashore, using your own skill to achieve excellent results. However, when casting the hook from the riverbank or grasping it to add bait, fishermen run a real risk of injury if the hook hits and punctures the skin and it can be even more dangerous if it affects a delicate area, such as the eyelid or the eye itself. We present two cases of eye injury from fish-hooks in two professional fishermen and review the literature on the management options in this difficult form of trauma.

## Case 1

A 25-year-old fisherman was hit in his right eye by a hook which became embedded in the right cornea. He cut off the thread line but made no attempt to remove the hook and presented to the emergency

---

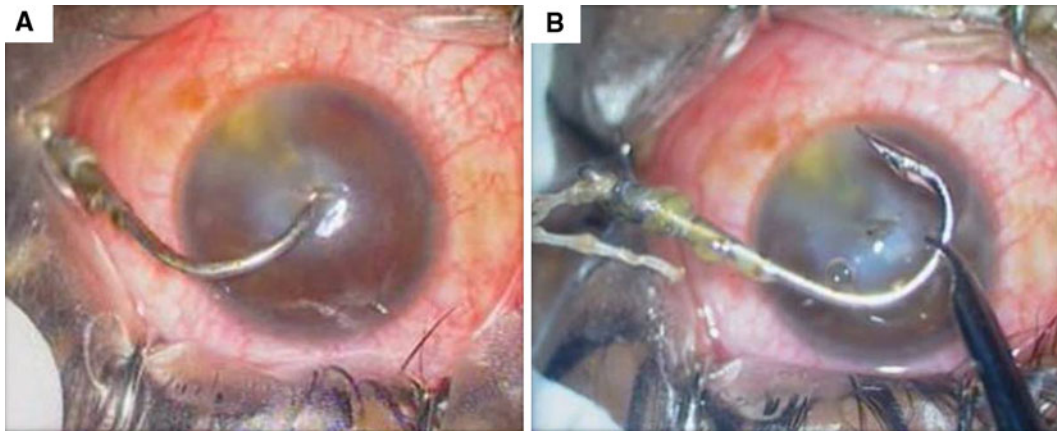
R. Agrawal (✉) · A. Laude  
Department of Ophthalmology, National Healthcare  
Group Eye Institute @ Tan Tock Seng Hospital,  
11 Jalan Tan Tock Seng, Singapore 308433, Singapore  
e-mail: rupesh\_agrawal@ttsh.com.sg

M. Taneja  
L V Prasad Eye Institute, Kalam Anjii Reddy Campus,  
Hyderabad, Andhra Pradesh, India

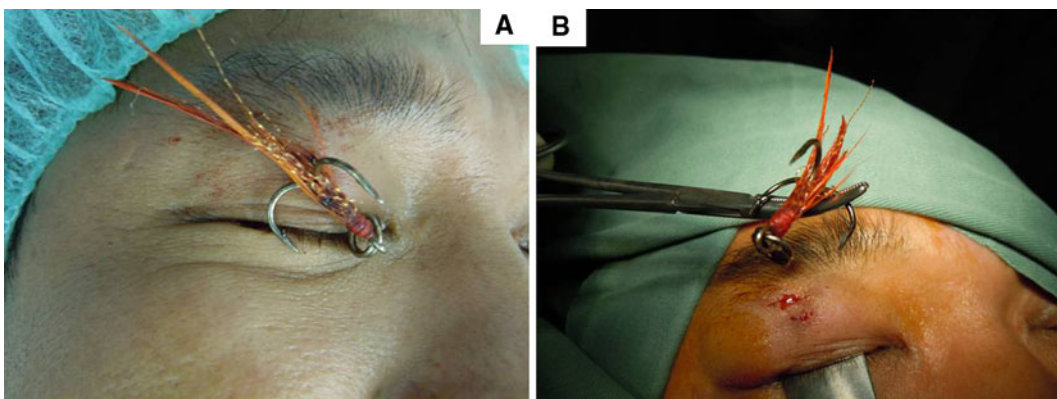
department with the hook hanging from his right eye (Fig. 1a). Under general anaesthesia, after careful microscopic inspection, the hook was rotated out (Fig. 1b) without causing any further damage to the cornea and intraocular structures. Prior to removal of the hook, the anterior chamber was filled with viscoelastic and the hook was separated from any possible entrapment into the iris or cataractous lens. Corneal laceration repair and lens aspiration was performed following retrieval of the hook and the eye was left aphakic with the posterior capsule intact. A second-sitting penetrating keratoplasty with intraocular lens implantation was performed 6 months after the initial emergency operation.

## Case 2

A 32-year-old fisherman was reeling a three-pronged fish-hook back to shore when it hit him in the face and embedded itself in the upper eyelid. On presentation, one of the prongs was embedded in the right upper eyelid and the other two prongs were free (Fig. 2a). The patient was immediately taken to the emergency department and after careful examination the globe was found to be unharmed and the hook was removed under local anaesthesia through a small incision with a lid guard under the upper lid to protect the globe (Fig. 2b). The fish-hooks embedded in the skin had not penetrated beyond the barb and were therefore



**Fig. 1** a Barb of the fish-hook perforating the central cornea with a long shaft. b Fish-hook gently rotated out without further damage to the cornea or intraocular structures



**Fig. 2** a Patient presented with fish-hook in his right upper lid. b Fish-hook rotated out without further damage to eyelid skin and ocular structures. Ocular structures were protected with an eye guard under the upper eyelid

removed by gently backing the hooks out through the entrance wounds.

### Comment

Many different types and sizes of fish-hooks are available. When examining the hook, it is important to note if the fish-hook is single, multiple or treble, whether the hook is barbed, and the number and location of the barbs—these details will help determine the best removal technique. Appropriate techniques have to be employed to remove the fish-hook and avoid major damage to the cornea and eyelid anatomy. Three main methods for removal of fish-hooks have been reported. The back-out method refers to backing the hook out through the entrance wound. The advance-and-cut method consists of firmly advancing the hook shank, creating a second surgical incision to deliver the point and barb, transecting the barb, and then removing the remainder of the hook using the back-out method. The needle-cover technique is the usual method for removal of a hook penetrating the retina [3–5]. It entails passing a large bore needle through the hook entry wound, engaging the barb in the lumen and withdrawing both together. In both our patients, we were able to remove the fish-hook by using the back-out method. The medical

literature contains many cases of eyelid and eye damage caused by fishing hooks [1]; therefore, we think it is advisable for fishermen to wear some form of eye protection as a precaution. Fish-hook injuries, though rare, can result in visual morbidity [2]. The hook should be removed under careful examination using the correct technique. The shaft of the hook should be left long and no attempt should be made by the patient or any non-trained person to remove it as doing so can result in further damage. Fishing hooks are very sharp and travel at surprisingly high speeds; for this reason we recommended that all fishermen wear protective eyeglasses similar to those that we use in the operating room to prevent contamination.

### References

1. Levy J, Lifshitz T (2001) Eyelid fish-hook injury. *Int Ophthalmol* 24(5):297–298
2. Malitz DI (1993) Fish-hook injuries. *Ophthalmology* 100(1):3–4
3. Knox FA, Chan WC, McAvoy CE, Johnston SE, Bryars JH (2004) Penetrating ocular injuries from fish-hooks. *Int Ophthalmol* 25(5–6):291–294
4. Aiello LP, Iwamoto M, Guyer DR (1992) Penetrating ocular fishhook injuries. *Ophthalmology* 99:862–866
5. Gammons M, Jackson E (2001) Fish hook removal. *Am Fam Physician* 63(11):2231–2237

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.