A rare case report of fish hook injury in eye
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Abstract: A 20-years-old lady had an accidental injury with a flying foreign body to her right eye while travelling in the train by sitting near the window. On examination fish hook like foreign body was noted. It penetrated the temporal part of the sclera associated with reduction of vision and hyphaema. In this case, we performed the unusual retrograde technique to remove the hook from the eye successfully without producing more damage to the surrounding structures.

Keyword: fish-hook injuries, trauma, flying foreign body, penetrating injury.

Introduction: Fishhook injuries to the eye are rare. When they occur, they can cause a serious injury, including blindness. A fish hook injury most commonly occurs in men who involved in fishing activities. It is more serious when it is in or near the eye. Most commonly involved flying foreign body injury in the eye is metal.

A literature search provided less than a dozen cases of fish-hook injuries to the ocular structures. Thus, this case report focuses on a rather uncommon, though devastating form of injury and on an unusual technique to manage this situation. Fish-hook injuries to the eye are rarely reported. However, when they do occur, they can be associated with corneal lacerations and scars, traumatic cataracts, choroidal hemorrhage, vitreous hemorrhage, retinal detachment, and even endophthalmitis. Once the fish-hook is impaled in the ocular structures, extraction can become a challenge for the attending surgeon.

Case Summary: A 20-years-old lady came to our casualty in the evening with a history of accidental injury with a flying foreign body to her right eye while travelling in the train by sitting near the window. The patient tried once to remove the foreign body. But the foreign body got embedded into the eye. The patient was received by us in this condition. On examination, the visual acuity - right eye - 6/60, Left eye - 6/6. Sub conjunctival hemorrhage present. The fish-hook penetrated 3mm away from the limbus in temporal part of the sclera and impaled itself into the deeper tissues.
A written consent was obtained for the removal of the fish-hook under local anesthesia. During the surgery, we found the hook still firmly to the underlying tissues. Tip of the hook could not be visualized. So we did not try advance and cut technique. Slowly the hook was pulled back towards the sclera by retrograde method. Successfully we removed the fish hook fully without damaging the underlying structure. Vitreous came out through the wound. Vitrectomy was done, 0.1 ml of intra vitreal amikacin was given through the same wound entry. Scleral wound sutured with 8-0 vicryl. Conjunctiva sutured with 10-0 ethilon. 0.5cc of subconjunctival injection of dexamethasone was given. Pad and bandage applied.

**follow up - 1 week**

At 1 week of follow-up, the eye showed minimal inflammation. The vision was 6/18 with pin hole 6/12. fundus-media clear, disc and vessels normal. Linear multiple hemorrhages present periphery of fundus around 8 to 9 o clock position with surrounding small scleral dehiscence present, macular edema resolved.

**DISCUSSION:**

A fish hook is a curved, sharp instrument placed on a lure or line to catch fish. Types of fish hook. (A) Simple-single barbed fishhook. (B) Multiple-barbed fishhook. (C) Treble fishhook. Fishing is an occupation or hobby for a vast number of individuals across the globe. Males are most commonly affected. Rare in females.

Most fish hook injuries puncture the skin of the hands, face, scalp, fingers, back, or ears. However, surprisingly, ocular injuries from fish-hook are rarely seen. Fish-hook injuries to the eye can involve the eyelids and the anterior- or posterior-segments. Penetrating eye injuries tend to occur with high velocity mechanisms, such as hammering or grinding. Under these circumstances small fragments of metal or other material traveling at high speed hit the eye and enter it through the cornea or sclera. In this patient it is a very rare occurrence because a fish hook acts as a flying foreign body and penetrated the eye. They are potentially dangerous due to immediate effect of the trauma, infections and sympathetic ophthalmia. They should receive prompt treatment. Most of the fish hook injuries are minor and can be treated without difficulty. All fishhook injuries require careful evaluation of surrounding tissues before attempting removal. Ocular involvement should prompt immediate referral to an ophthalmologist. The choice of the method for fishhook removal depends on the type of fishhook embedded, the location of the injury and the depth of tissue penetration. Occasionally, more than one removal technique may be required for removal of the fishhook.

There are five methods for fish-hook removal from the para-ocular or ocular tissues. (i) Advance-and-cut technique- the hook is pushed forward until the tip and barb are outside the eye. Subsequently, wire cutters are used to cut the hook between the barb and the bend. The shank is then pulled out of the eye through the entry wound.

(ii) **Back-out or retrograde technique** - the hook is removed by simply backing it out through the entrance wound. As the barb can inflict more ocular damage during this maneuver, it is employed only for barbless fish-hooks.

We performed this unusual technique and removed the hook from the eye successfully without producing more damage to the surrounding structures.

(iii) **Snatch technique**- This method is employed for removal of the fish-hook from non-ocular tissues. Downward pressure is applied to the shank and the hook is quickly removed.

(iv) **Needle-cover technique**- This method has been reported when the fish-hook penetrates the retina. A large bore needle is passed into the eye through the entry wound. The barb is covered with the needle to prevent it from entangling in the tissues and both are then withdrawn together.

(v) **Cut-it-out technique** - the entrance wound is enlarged by a scalpel blade. Then, the blade is slid along the hook until it reaches the barb. Subsequently, the hook is backed out of the eye similar to the back-out technique.

If fish hook injury occurs

Do not try to remove a fishhook from an eye, eyelid, or near an eye.

Do not put pressure on the eye.

Cover the eye and fishhook with a patch, a cup, or even a paper cup.

Covering the eye prevents the hook from moving.

Be very careful not to put pressure on the hook or the eye.

If possible, cover the uninjured eye. The injured eye will move less if the uninjured eye is covered.

This may prevent further damage to the injured eye.

**CONCLUSION:**

Our patient had the fish-hook penetrated into the sclera. There was associated reduction of vision and hyphema. Tip of the hook could not be visualized. Advancement of the hook was abandoned, fearing further damage to the tissues. Subsequently, we employed the unusual retrograde technique in this case and removed the hook from the eye successfully without producing more damage to the surrounding structures.

Fish-hook injuries to the eye can be devastating. It is very difficult to manage. Adequate personal eye protection is necessary to prevent such untoward accidents.

**REFERENCES:**


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