A RARE CASE OF PENETRATING FISH-HOOK INJURY TO THE EYE WITH GOOD VISUAL OUTCOME

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PRESENTATION OF CASE

A 15-year-old boy presented to the emergency department with history of having gone fishing 3 hours prior and in the process of drawing the fish the hook got accidentally lodged in his right eye. The patient complained of a sudden painful decrease in vision of the right eye.

CLINICAL DIAGNOSIS

On slit lamp examination, a barbless fish-hook was seen to be penetrating the anterior chamber through an entry wound of around 3 mm in the inferior cornea of the right eye, sparing the visual axis. There was circumcorneal congestion. The anterior chamber was shallow. The lens was clear. The visual acuity of the patient was 6/9 on Snellen's chart. The clinical photographs are shown in Figure 1 and 2.

Left eye examination was normal. Visual acuity was 6/6 on Snellen's chart and the fundus examination was normal.

Investigations

CT scan of the orbit confirmed that the bony orbital walls were normal.

Figure 1. Clinical Photograph showing a Fishhook Injury to the Right Eye

Figure 2. Slit Lamp Photograph showing a Barbless Fishhook Penetrating the Anterior Chamber through an Entry Wound of 3 mm in the Inferior Cornea

Figure 3. Retrograde Technique of Fishhook Removal (Superior View)

Figure 4. Fishhook removed from the Eye

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Figure 5. Post-Operative Clinical Photograph showing a Sutured Corneal Entry Wound (Superior View)

DISCUSSION OF MANAGEMENT

The patient was taken for emergency removal of the fish-hook under general anaesthesia after obtaining written consent from the parents. A side port was made at the 2 O'Clock position with a 15 degrees Lance tip blade and viscoelastic agent was used to deepen the anterior chamber. The fish-hook was removed by the retrograde method. This was accomplished by firmly grasping the fish-hook with the artery forceps and backing it out in a controlled fashion through the entry wound after stabilising the globe with the Lim's forceps (Figure 3). The fish-hook had not penetrated beyond the iris. The edges of the corneal entry wound were freshened and the wound sutured using 10-0 monofilament nylon sutures. Viscoelastic agent was aspirated using Simcoe's irrigation aspiration cannula and the anterior chamber reformed with saline via the side port. A subconjunctival injection of antibiotic was given. The eye was bandaged for 12 hours.

The fish-hook removed is shown in Figure 4. The post-operative photograph of the patient's eye is shown in Figure 5.

Tetanus prophylaxis was given in addition to parenteral antibiotics cefotaxime and metronidazole in appropriate doses to prevent endophthalmitis. Intramuscular injection of diclofenac was given for pain relief.

On the first day postoperatively, the anterior chamber was formed and the corneal tear was found to be well apposed. Postoperatively, the patient was put on 2 hourly antibiotic steroid drops in addition to homatropine eye drops three times a day and an antibiotic steroid ointment at night. Parenteral antibiotics were continued for 5 days. Post-operative period was uneventful and at discharge the visual acuity was 6/6 on Snellen's chart and the fundus examination was normal.

When examining the fish hook, it is important to recognise if the fish hook is barbed or not and the location of the barbs in order to determine the best removal technique.

Four techniques for the removal of fish hooks embedded in non-ocular tissues have been reported in the medical literature.

These have been modified and a review of these techniques in ocular tissues has been described as follows:¹

The Back-Out method or retrograde technique refers to backing the hook out through its entrance wound. Although technically simple, it is primarily useful for barbless hooks. If a barb is present and engaged in ocular tissues, this method can cause excessive damage.

The Snatch technique is a modification of the back-out method, where downward pressure on the hook shank and rapid extraction are used to diminish pain during the removal procedure in non-ocular tissues. This is a relatively traumatic technique and not advised for penetrating ocular injuries.

The Advance and Cut method is the most useful technique in anterior segment fishhook injuries. Briefly, the hook shank is grasped firmly and a controlled surgical incision is placed to allow atraumatic delivery of the point and barb. Sterile wire cutters are used to transect the hook at a location between the barb and bend, after which the barbless hook is easily removed using the back-out technique described previously. Advantages of the advance and cut method include a surgically controlled second wound, no enlargement of the primary wound and minimal traumatic manipulation.

The usual method of choice for hook penetration of the retina is the needle-cover technique described by Grand and Lobes. This procedure entails passing a large bore needle into the eye through the hook entry wound. The fishhook barb is then engaged within the lumen of the needle and both are withdrawn together.

A study by Iannetti et al² suggests a modification of the retrograde technique by enlarging the original entrance wound with a 15 degrees blade in order to permit the easy retrograde exit of the fishhook.

Penetrating ocular fishhook injuries may have an excellent long-term prognosis if prompt, appropriate surgical intervention is accomplished.^{3,4}

Complications of Fishhook Injuries

As the cornea is usually involved in these injuries, the usual sequel is corneal scarring. Unless extensive, the visual results in most cases have been satisfactory.^{5,6}

Traumatic cataracts are often caused by the fishhooks penetrating into the lens. Other complications reported include choroidal and vitreous haemorrhages, retinal tears and retinal detachments. Endophthalmitis is also known to occur.⁷

CONCLUSION

The report emphasises that a good visual outcome can be obtained with the retrograde method of fish-hook extraction in patients who have penetrating injuries to the eye. Prompt intraocular foreign body removal and surgical repair is crucial to ensure a good surgical outcome. The use of protective eyewear while fishing can minimise the incidence of such injuries.

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