

Penetrating Ocular Trauma from Fishhook

Rajendra P. Maurya^{1*}, Ishan Yadav², Prakash Kumar², Prashant Bhushan¹, Virendra P. Singh³, Mahendra K. Singh³

¹Assistant Professor, ²Senior Resident, ³Professor, Department of Ophthalmology, Institute of Medical Sciences, Banaras Hindu University, Varanasi-221005 UP, India

*Corresponding Author:

Name: Rajendra Prakash Maurya

E mail: mauryarp_bhu@yahoo.com

Abstract: Fishing is one of the common recreational and commercial human activities. Ocular fishhook injuries are uncommon but may cause serious vision threatening damage to the eyes. Management of penetrating corneal fishhook injury is a challenging procedure because of the hooks barb can cause further damage during retrograde removal. A 10 year old male presented with barbed fishhook embedded in his right cornea while watching fishing. The fishhook passed through centre of cornea, up to the anterior chamber confirmed by CT scan of orbit. Hook was removed through small vertical incision under general anesthesia. Postoperative visual acuity was finger count from one meter distance and mild corneal scarring was noted. Management of penetrating corneal fishhook injury is a challenging procedure and needs careful evaluation and prompt surgical intervention. In order to prevent such injuries, person must wear protective devices while fishing.

Keywords: Corneal injury, Fishhook, Penetrating ocular trauma.

INTRODUCTION

Fishing is a worldwide recreational human activity, more popular in western countries than India. Many kinds of fishhook injuries have been reported in literature [1]. Fishhook injuries most commonly occur in the skin of fingers or hands [2]. Fishhook injury can be extremely dangerous if it involve vital organs such as eyeball [3]. There is limited number of cases of penetrating corneal fishhook injuries reported in the medical literature till date and all of them were from western countries. To our knowledge we report this penetrating corneal injury as a first of its kind case from India.

CASE REPORT

A 10 year old male presented to us with history of right corneal injury from fishhook while watching fishing. Patient was sitting behind his friend who was fishing and trying to pull the fishhook out of the water forcefully. While doing so the fishhook got embedded in right cornea of the patient. The local general practitioner attempted retrograde removal of fishhook but without success. Patient came to us with normal vital signs and complaints of pain, redness, watering and diminished vision in right eye.

Upon examination fishhook was seen to have penetrated the cornea through the visual axis. Slit lamp examination did not reveal details of anterior segment due to corneal oedema (Fig. 1). His vision was hand

movement from one meter distance. Left eye had 6/6 vision. CT scan orbit (Fig. 2) revealed that fishhook was located in anterior chamber. No posterior segment injury was observed.

The fishhook was removed under general anesthesia, through entry site after giving vertical incision. Vescoelastic was injected into anterior chamber and corneal wound was closed with interrupted 10.0 monofilament corneal sutures. Residual Vescoelastic was expressed out by irrigation and anterior chamber was maintained by injecting air bubble. Topical antibiotic, steroid and non-steroidal anti-inflammatory drops were prescribed for six weeks and then corneal sutures were removed. Cultures of fishhook and corneal wound site showed no bacterial growth. At the last follow up 3 month later, visual acuity was finger count from 3 meter distance. There was mild corneal scar.



Fig. 1: Photograph of the patient showing fishhook penetrating the central cornea



Fig. 2(a): 3 D CT orbit no bony injury



(b) Axial view



(c) Sagittal view

Fig. 2 (b & c): showing metallic foreign body in right eye globe reaching up to anterior chamber



Fig. 3: Completely removed barbed fish hook from right eye



Fig. 4: Immediate post operative photograph of right eye

Ethical consideration

Written informed consent was obtained from legal guardian of the patient for publication of this case report and accompanying images.

DISCUSSION

Fishing is a sport activity popular in many parts of the world, in all age group. Fishing related injuries can harm in two ways, one is mechanical damage of ocular structures and other is infection related with fishhook. Ocular fishhook injuries may cause vision threatening consequences like corneal scarring, retinal detachment and endophthalmitis etc.

Fishhooks are designed to catch and hold fishes. Various types of fishhooks are available in the

market. They may be single barbed, multiple barbed and treble barbed fishhook. The barb keeps the hook embedded in the fish mouth and during fishhook injury barb prevents retrograde removal and may cause further tissue damage [7]. Different types of ocular fishhook injuries which occur in different circumstances were reported in literature [2, 4, 8, 9, 10]. Reports on isolated corneal penetrating fishhook are very few. The barbed fishhooks are difficult to be removed if embedded in intraocular structures. Best removal technique requires thorough evaluation of the hook, types, number and location of barb and depth of its penetration. Several techniques for the removal of fishhook embedded in ocular tissues have been described in literature [1, 2, 4, 6, 8]. Following, primary techniques have been tried:

- Retrograde technique - simple technique, useful for barbless hooks but has lowest success rate.
- Advance and cut technique- most effective for anterior segment fishhook injuries require minimal traumatic manipulation without enlargement of primary wound [4].
- String pull technique - modification of the retrograde technique, relatively traumatic technique and not advised for penetrating ocular injury.
- Needle cover technique- advised for removal of large and single barbed, superficially embedded fishhook [6].
- Vertical eyelid splitting technique - to manage the penetrating fishhook injury of eyelid [8].

CONCLUSION

Although corneal fish hook injury can cause severe damage but early detection and applying the correct removal technique may yield good results. However, to prevent such injuries certain precautions must be taken while fishing, like (i) never go fishing alone (ii) wear some eye protection (iii) always handle fishhook and rods carefully (iv) fish at least 10 meter away from the person next to you (v) while pulling the fishing hook from water, ensure that nobody is sitting behind you (vi) stop fishing if an injury occurs & immediately consult specialists for appropriate treatment.

REFERENCES

1. Aiello LP, Iwamoto M, Guyer DR; Penetrating ocular fish hook injuries. *Ophthalmology*, 1992; 99(6): 862-866.

2. Yuksel N, Elibol O, Caglar Y; Penetrating corneal fish-hook injury. *Ophthalmologica*, 1994; 2008(2): 112-113
3. Inchingolo F, Tatullo M, Abenavoli FM, Inchingolo AD, Inchingolo AM, Dipolma G; Fish hook injuries: A risk for fisherman. *Head & Face Medicine* 2010, 6: 28.
4. Aiello LP, Iwamoto M, Taylor HR; Perforating ocular fishhook injuries. *Arch Ophthalmol.*, 1992; 110(9): 1316-1317.
5. Mandelcorn MS, Crichton A; Fish hook removal from vitreous and retina (letter). *Arch Ophthalmol.*, 1989; 107:493
6. Grand GM, Lobes LA Jr.; Technique for removing a fish hook from the posterior segment of the eye. *Arch Ophthalmol.*; 1980; 98(1): 152-153.
7. Dudkiewicz I, Salai M, Blankstein A, Chechik A; Fishing penetration injuries. *Br J Sports Med.*, 2000 ; 34: 459-62
8. Deramo VA, Maus M, Cohen E, Jefers J; Fish hook injury of the eyelid: an unusual case removal of a fish hook in the eyelid and cornea using a vertical eyelid-splitting technique. *Arch Ophthalmol.*, 1999; 117(4): 541-542.
9. Kalyanasundaram TS, Depla D, Steal D; An unusual case of severe penetrating ocular injury with the shank of a triplet fish hook. *Eye*, 2003; 17(5): 663-664.
10. Kamath GG; Fish hook injury of the eyelid: unusual case. *Br J Ophthalmol.*, 2000; 84: 439.