Medicine & Clinical Science

Case Report

Hooked On A Bad Cast: When Fishing Becomes An Eye-Opening Emergency: A Case Report

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Abstract

Fishing is a favourite past time and occupational activity for many people in different parts of the world. Just like every other human activity, it is not without hazards; but fish hook injury to the eye is of particular concern due to the profound complications that can follow, if it is not properly managed. We report the case of a 54 year old fisherman with a fish hook perforation of his right eye while casting his hook. To the best of our knowledge, this is the second case to be reported in ophthalmic clinical practice in Nigeria. The aim of this report is to emphasize that this type of eye injury though not too common, can occasionally be encountered in practice, and to implore ophthalmologists to get acquainted with the management options. It also underscores the need for patient education on risks and the need for eye protection in such occupations.

- Received Date: 09 Feb 2026
- Accepted Date: 16 Feb 2026
- Publication Date: 18 Feb 2026

Keywords

Fish hook, Ocular, Emergency, Eye injury, Barb

Introduction

Fish hook injury to the eye can occasionally be encountered in ophthalmic practice, and may sometimes take the ophthalmologist unawares. The peculiar nature of this type of ophthalmic injury not only lies in the unusual nature of the foreign body, but also in the nature and extent of damage that can result from it. This type of injury typically affects the anterior segment most times—usually the cornea, iris, lens, and sclera [1]. Posterior segment involvement is less common but can carry greater visual morbidity. Hooks are often baited, carrying contamination from the bait and aquatic microbes. This increases the risk of endophthalmitis, and other complications, underscoring the need for urgent intervention [2]. Pediatric cases add complexity due to smaller anatomical structures, anesthesia considerations, and the risk of amblyopia. Psychological stress and the need for precise, minimally traumatic intervention further complicate care [3].

Case Presentation

A 54 year old fisherman from a riverine community was trying to cast his hook, when it flew into his right eye. He arrived our facility about five hours after the incident, with the hook insitu. On examination at presentation by our team, the hook had entered his right cornea at 7 O'clock position, and the tip emerged at 1 O'clock, catching the palpebral conjunctiva in the process. He had lid edema, hyphaema and ptosis as a result. His visual acuity in the eye was light perception (Figures 1 and 2). He had impaired movement of the right globe, and ptosis largely due to the tethering effect of the fish hook (Figure 2).

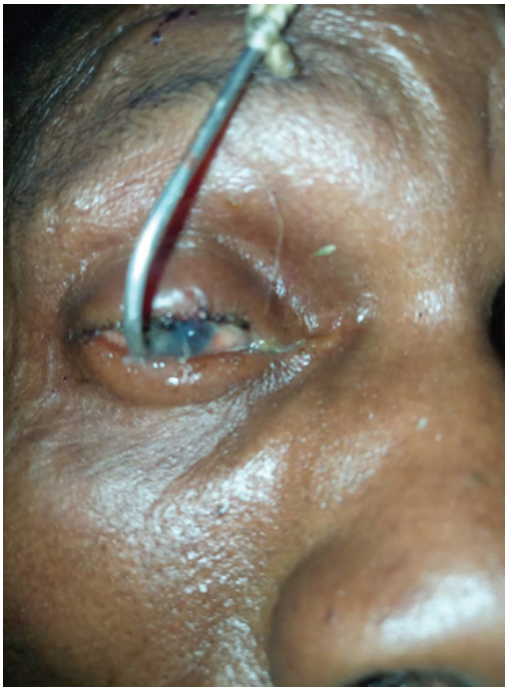

Figure 1: *Patient at presentation, with fish hook still in the right eye.*

Citation: Emeonye A, Idisi O, Onyegbule J, Oviawele A, Chikezie I, Obi I. Hooked On A Bad Cast: When Fishing Becomes An Eye-Opening Emergency: A Case Report. Med Clin Sci. 2026;8(1):057

Figure 2: *On attempted up gaze, there was restriction in globe and lid movement in the right eye as a result of the fish hook.*

The fish hook was removed in theatre (Figure 3) using the cut-it-out technique after gently freeing and retracting the eyelid from the tip of the hook. Then we extended an incision along the axis of the barb with a size 15 surgical blade, and gently removed the hook from the eye. An anterior chamber washout was done with saline and incision closed with nylon 10-0. Anterior chamber was reformed with viscoelastic. Topical antibiotics, antifungal and mydriatic were given. Subconjunctival depot injection of steroid and Gentamycin were also given.

On the first post-operative day, his visual acuity was still light perception. He had some cloudiness of the cornea, and the anterior chamber was a bit shallow. He insisted on being discharged against medical advice, which is a common behaviour among patients when they are relieved of their complaints and symptoms. In his case, he cited inability to pay for his care, including medications as reasons. He was discharged home after being adequately counselled on the dangers of his decision, importance of continuing his treatment and the need to protect the left eye. He was also given follow up appointment in the eye clinic, but never returned.

Discussion

Fish hook-related eye injuries are uncommon but require prompt surgical intervention due to the risk of profound and irreversible damage it can cause on vision. The anterior segment—particularly the cornea, iris, and anterior chamber—is most frequently affected [1]. In our case, the hook followed an unusual path: entering through the limbus at 7 O'clock, and emerging at 1 O'clock, creating a perforation injury, while at the same time penetrating the eyelid through the palpebral conjunctiva.

There is a substantial body of literature evidence concerning ocular fish hook injuries. However, a local literature search revealed a paucity of reported cases. The management demands

Figure 3: *The fish hook after being removed from the eye.*

a planned approach that considers the hook's anatomy, size, and barb characteristics [4].

The vertical eyelid splitting technique is useful when there is a risk of globe penetration, and further ocular damage is inevitable due to the low visibility of the barb [5]. In cases not involving the globe, a full or partial vertical eyelid incision is made from the margin of the eyelid, connecting vertically to the fishhook. The wound can be later closed with a vertical suture.

The retrograde technique best suits barbless or small and superficially placed barbed hooks [6].The shank of the barb is grasped while a controlled force is placed toward the eye of the hook. Downward pressure is subsequently applied to disengage the barb from surrounding tissue, and the shank can be removed retrograde from the entry wound.

The needle cover technique has been demonstrated most helpful in removing fishhooks of the posterior segment of the eye [7]. For extra-ocular involvement, this technique can be used for superficial injuries when the hook shank is covered and single-barbed [5]. A needle, approximately 18 gauge or larger, is advanced into the entry wound, where the tip of the barb can meet the needle lumen. After the barb is engaged inside the lumen, the fishhook can be carefully retracted.

The advance and cut technique is widely used for extra-ocular fishhook injuries [8]. The shank of a single-barbed hook is grasped firmly with surgical clamps, and the point of the barb is guided superficially to create a new wound opening. The barb is then transected between the bend of the shank and the barb's edge, followed by removal.

In the Cut-it-out technique, the entrance wound is enlarged by a scalpel blade or 15° blade. The blade is slid along the hook until it reaches the barb and the hook is backed out of the eye similar to the back-out technique [9]. Ogbonnaya CE, et al. [10] reported using this technique in extraction of a fish hook from the left eye of a 10 year old boy in a tertiary hospital in southeast Nigeria (this is apparently the first reported case of ocular fish hook injury). Our team also adopted this technique due to the peculiar nature of the injury in this patient.

In 2023, Brown NJ, et al. [11] described a novel surgical technique for penetrating fishhook injuries of the eyelid where due to the degree of force required to attempt to cut a fish hook in the advance and cut technique, it was deemed unsafe to

continue with the procedure. Instead, Kelly forceps were used to clamp and flatten the barb against the tip of the fishhook, creating a smooth surface against the fishhook. The fishhook was then retracted through the entry wound without resistance

When determining the appropriate removal technique, it is essential to consider extra- and intraocular structures involved and the type of fishhook in question. It is critical to rule out the possibility of a global injury, as this would be the most severe of cases and require immediate surgical attention by an ophthalmologist [12]. In determining the injury depth and structure involvement, ocular ultrasound, computed tomography, and x-ray have been helpful in the literature [6,13].

Unfortunately, our patient never returned because he could not afford to pay for his care. Efforts to contact him did not yield any positive results. This is a common trend among indigent patients without government jobs and health insurance; who cannot afford out-of-pocket payment for healthcare services. There is need for advocacy on universal healthcare insurance and patient education on importance of eye protection in occupations with risks of eye injury.

Conclusion

Ophthalmologists must be acquainted to address the unique clinical and surgical challenges associated with ocular fish hook injuries. Prompt management of these injuries is important in determining the prognoses. Furthermore, promoting awareness and advocacy for the use of protective eyewear by both fishermen and observers, is vital in preventing these injuries.

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