



A Clinical Profile of Fishhook Injuries and Their Management

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Abstract

Background: Although injuries from fishhooks are uncommon, fishing represents a significant source of income and is a popular recreational activity in India. Several methods for removing fishhooks exist and are dependent on the hooks, site of injury and type of fishhook.

Methods: A prospective analytical study was conducted in our emergency department over eight years to identify the most common sites of fishhook injuries and the predominant method involved in their removal.

Results: A total of 51 patients were studied. Most fishhook injuries are presented to the emergency department within four hours. Barbed fishhooks were found to be more common, with hands identified as the most frequent site of fishhook injury. The string method of removal was the most commonly employed and proved successful in the majority of our patients.

Conclusion: While fishhooks can typically be removed under local anaesthesia, other techniques may necessitate admission and operating room removal using the appropriate methods.

Keywords: Penetrating Injury; Foreign Body; Accidental Trauma

Introduction

Although uncommon in India, fishhook injuries occur as fishing is a significant source of livelihood and recreation [1]. Though fishhooks are generally used in fishing, injuries can also be sustained while handling the dead meat to act as a mimic for lure

fishing. Modern hooks are barbed, with a backwards-protruding spike that helps secure anchored fish. Though the injuries sustained due to such modern fishhooks look minimal, the underlying vessels, tendons and nerves are at risk of injury. Here, we discuss the injuries and management of patients with fishhook injuries who presented to our emergency department.

Review of Literature

The earliest evidence of fishhooks dates back to the Upper Palaeolithic period, with shell fishhooks found in East Timor that are dated to 42,000 years ago. This discovery, along with the presence of fish bones, suggested deep-sea fishing by early humans. Sophisticated early fishing practices were observed in the Epipaleolithic site of Jordan River Dureijat in Israel, around 15,000 to 12,000 years ago [2].

Since its inception, fishing has become a popular recreational activity worldwide. Injuries caused by fishhooks have become more severe, mainly due to the use of barbed fishhooks. Barbed fishhooks secure the fish by anchoring into the flesh and preventing slippage. Although less popular, barbless fishhooks are still used to catch fish and can withstand higher pulling forces [3].

Fishing with a rod and hook is the most common form used to catch fish from the riverbank or seashore. Though there is a lack of warning for amateur fishermen, complications related to this activity should not be dismissed. A study conducted by <https://doi.org/10.46889/JSRP.2026.7202>

Francesco Inchingolo in 2010 discussed that the injuries from the fishhook can be sustained from casting the hook, grasping the bait and securing it. The injuries can involve vital organs and may affect delicate areas such as the eyes [4].

The study conducted by M G Gammons primarily revealed four techniques for the removal of the fishhooks. The choice of method depends on the type of fishhook, the location and the depth of tissue penetration. They also emphasise the need for employing multiple techniques for the removal of the fishhook. They concluded that the most effective method was the traditional advance and cut method [5].

Aims and Objectives

- To know the sex preponderance of fishhook injuries.
- To know the most common site of fishhook injuries.
- To know the most common type of technique employed for removing fish hooks.

Materials and Methods

Study Type

Prospective analytical study design.

Source of Data

Tertiary teaching hospital.

Study Period

2017 to 2025.

Inclusion Criteria

1. Patients with confirmed fishhook injuries, parts including barb, shank, eye or point
2. Patients aged more than 15 years
3. Presenting within 48 hours of injury

Exclusion Criteria

1. Patients with pre-existing local infection or chronic wounds
2. Fishhook injuries with polytrauma or major concurrent injuries
3. Children under 15 years
4. Incomplete medical records
5. Patients with a previous history of intervention for fishhook-related presentations
6. Immunocompromised patients
7. Pregnancy

Methodology

Data was collected from patients from the presentation time after written consent and followed up to 6 months. Data was analysed in Excel.

Results

51 patients were studied during the period of 9 years. The patients were followed up for 6 months. All 51 of the patients with fishhook injuries were men. The most common site of fishhook injuries was the hand (84.31%) (Fig. 1), followed by the forearm and scalp (Table 1).

In 46 of the 51 cases, the string method was used to retrieve the fishhook from the site of injury. In 5 of them, the advance and cut method was used to prevent neurovascular injury.



Figure 1: Embedded fishhook.

Site	Number	Percentage
Hand	43	84.31
Forearm	3	5.88
Scalp	5	9.80

Table 1: Common fishhook injury sites.

Discussion

The fishhooks are typically made of stainless steel and are divided into simple and barbed hooks (Fig. 2). Furthermore, they are classified based on the eyelet to base of shank distance into halibut, salmon and trout sizes. The parts of a fishhook include the eye, shank, bend, barb and point (Fig. 3) [6].

Fishhook injuries are common in fishing communities. Management of fishhook injuries typically involves cleaning the site with chlorhexidine solution and removing it under aseptic precautions. Most embedded fishhooks can be removed with minimal surgical intervention. Four techniques are generally incorporated for removing the fishhook: advance and cut, string-yank, simple retrograde and needle cover [7,8]. The advance and cut technique is most commonly used among them. Fishhook removal by unqualified persons is not recommended owing to the neurovascular damage.

A simple retrograde technique is frequently used to extract the fishhook by applying gentle pressure on its shank while simultaneously backing the hook out, whereas the needle cover technique involves advancing an 18-G or larger needle along the entry pathway to cover the barb of the fishhook. Subsequently, the simple retrograde method is utilised to remove the fishhook and the barb-covered needle as one unit.

In the string yank method, a downward pressure is applied to the shank of the fishhook and the loop of the string or fishing line is wrapped around it. The ends of the string are held firmly and a controlled pulling force is applied in the retrograde direction. This method is best suited for superficial fishhook injuries [9].

The advance and cut method is used when the above methods have failed or when the barb of the hook is advanced deep in the tissue. The fishhook is advanced and the tip extends out from the surface of the skin. The tip and the barb are held with needle forceps and the fishhook is cut behind the barbs and the remaining portion is removed in retrograde fashion. This technique can be employed by anyone, anywhere and at any injury site except the eye [10].

Though the advance and cut method is the preferred method of choice owing to the success rates, retrograde removal of fishhooks should always be attempted before, unless the barb is already protruding out of the skin. In the case report by Skindzielewski, et al., they have concluded that infection by fishhook injuries from freshwater areas is due to *Aeromonas hydrophila*, with around 39% of the cases showing infections associated with fascia, muscle, tendon, bone or joint [11,12].

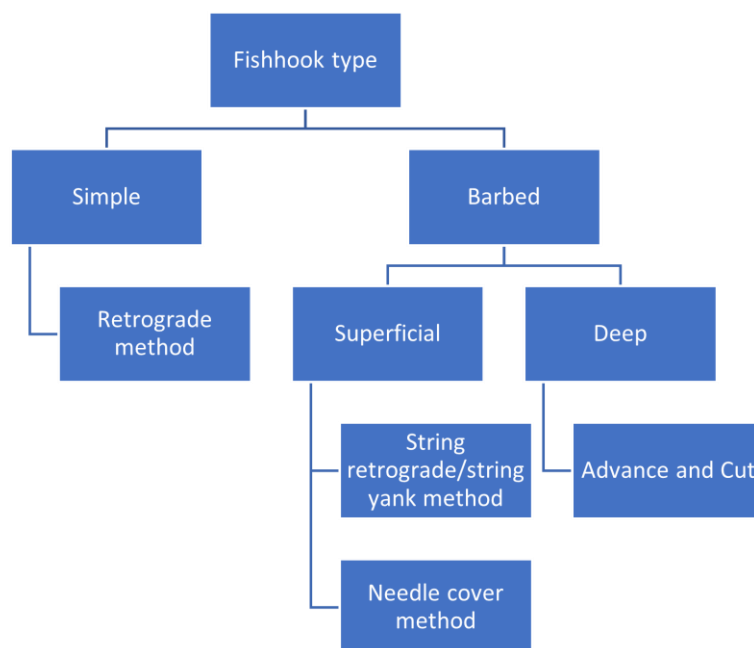


Figure 2: Classification of fishhooks.

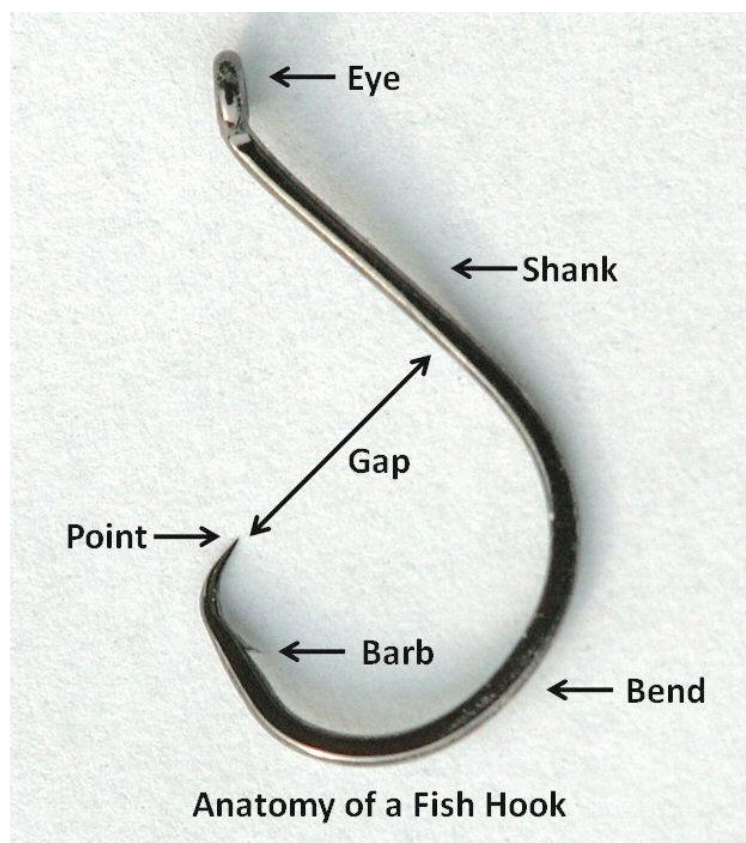


Figure 3: Parts of a fishhook.

Conclusion

All 51 fishhook injuries were presented to the emergency department within 4 hours. Though fishhooks could be generally retrieved under local anaesthesia, various other removal techniques require admission and removal in the operating room. String method was the most common method employed in the removal of the fishhooks. The advance and cut method is employed in patients to prevent neurovascular injury.

Conflict of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

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Data Availability Statement

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

Ethical Statement

The project did not meet the definition of human subject research under the purview of the IRB according to federal regulations and therefore was exempt.

Informed Consent Statement

Informed consent was obtained from all participants included in the study.

Authors' Contributions

All authors contributed equally to this paper.

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