

Don't Get Hung Up on Fishhooks: A Guide to Fishhook Removal

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PRACTICE POINTS

- Barbed fishhooks should never be removed by pushing the hook in a retrograde manner along the path of insertion, as this method may result in extensive internal tissue destruction and increased complications.
- There are a number of safe and effective techniques for removing barbed fishhooks from cutaneous tissue that also may be applicable in removing other foreign bodies embedded in cutaneous tissue (eg, splinters).

In the sport of fishing, barbed fishhooks often are used for their effectiveness in maintaining the fish on the hook once it is caught. However, if a fishhook is implanted in the skin of a fisherman or fisherwoman, a barb can pose problems in removing the fishhook without exacerbating internal injury, a common fear among outpatient physicians. We describe the case of a patient who presented to the dermatology clinic with a barbed fishhook injury and discuss several simple methods for barbed fishhook removal that can be easily utilized in the outpatient setting. Because failing to treat the patient may lead to further discomfort and increased risk for complications, practitioners should be familiar with the removal methods described here, as they are not time consuming and do not require complex equipment. Furthermore, these techniques may be useful for removal of other foreign bodies embedded in cutaneous tissue (eg, splinters).

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Fishing is one of the world's most beloved activities, enjoyed as a sport or a leisure activity. However, a common injury from fishing is

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embedment of the fishhook in the cutaneous tissue. Barbed fishhooks are used for their effectiveness in maintaining the fish on the hook once it is caught, but when implanted in the hand of a fisherman or fisherwoman, barbs can pose problems for removal without exacerbating internal tissue injury. Nevertheless, dermatologists should not shy away from removal of barbed fishhooks, as there are several simple methods that can be easily utilized in the outpatient setting.

Case Report

A 68-year-old man presented to an outpatient dermatology clinic after sustaining a barbed fishhook injury while fishing. The fishhook was firmly inserted into the ventral side of the third digit of the right hand (Figure 1).

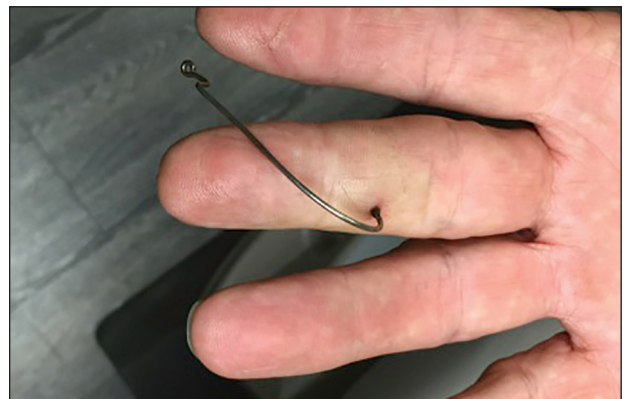


Figure 1. A barbed fishhook embedded in the ventral side of the third digit of the right hand.

Prior to presenting to dermatology, the patient went to 2 urgent care clinics the same day seeking treatment. He reported that practitioners at the first clinic were not able to remove the fishhook because they did not have pliers in stock. At the second clinic he was told the fishhook might be embedded in deeper tissues and was advised to go to the emergency department at the local hospital. When he arrived at the emergency department, a 6-hour wait time prompted him to see a local dermatologist instead.

To remove the fishhook, the area was cleaned and prepared first; lidocaine 2% was administered for local anesthesia. An 18-gauge needle was then advanced through the puncture site parallel to the fishhook's inner shaft on the same side as the barb, which could be successfully palpated using the tip of the 18-gauge needle. The tip of the needle was then used to cap the barb beneath the skin. This technique allowed for the hook to be easily extracted in a retrograde manner without causing further destruction to the surrounding tissue. The patient then was started on prophylaxis cephalexin 500 mg 3 times daily for 3 days.

Comment

The hand is the most common site of fishhook injury, followed closely by the head and eyes.¹ Barbless fishhooks usually can be removed by pushing the hook in a retrograde manner along the path

of insertion. This method is simple and rarely results in complications. However, there are no guidelines for removal of barbed fishhooks. Furthermore, removing a barbed fishhook in the same retrograde manner would result in extensive internal tissue destruction and increased complications. Due to the popularity of the sport of fishing, fishhook injuries, depending on geographical location, are not uncommon.² For this reason, trauma and emergency practitioners have become well versed in safe methods for barbed fishhook removal. However, patients are not always able or willing to seek medical care in emergency departments and may opt to seek treatment in outpatient settings, such as in our case. As a result, dermatologists should familiarize themselves with safe and effective fishhook removal methods, as they are not time consuming and do not require complex equipment. Failure to treat the patient may lead to further patient discomfort and increased risk for complications. Additionally, many of the techniques for removal may be useful with other foreign bodies embedded in cutaneous tissue (eg, splinters).

There are a number of safe and effective techniques for removing barbed fishhooks from cutaneous tissue, including the advance-and-cut method, the cut-it-out technique, the string-pull method, and the needle cover technique.¹⁻³ The method chosen to remove the fishhook is dependent on a variety of factors, such as anatomic location, tissue depth, and provider comfort.

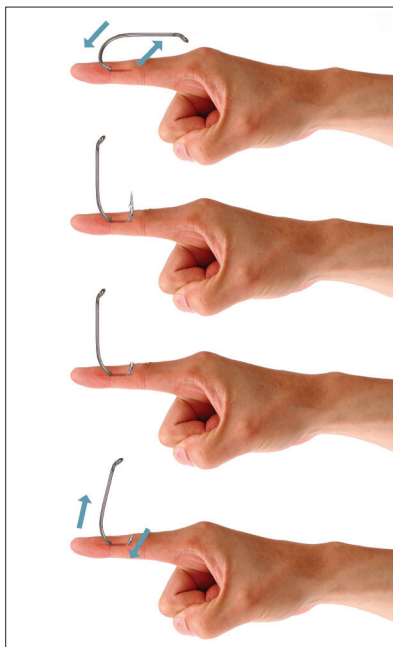


Figure 2. The advance-and-cut method for fishhook removal.

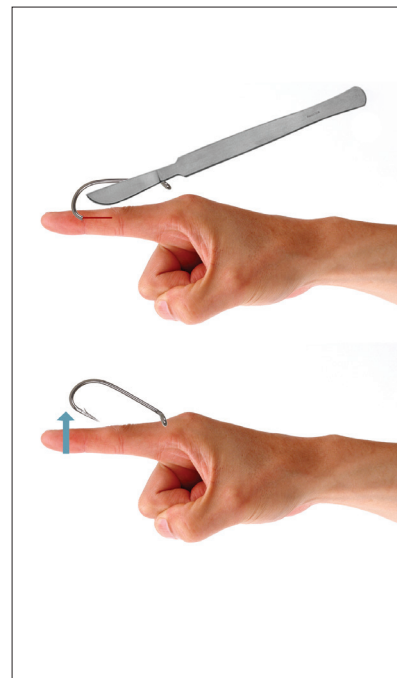


Figure 3. The cut-it-out method for fishhook removal.

With the advance-and-cut method (Figure 2), the affected area is anesthetized and a small incision in the skin is created to expose the barb. The fishhook is then advanced through the incision, providing visibility of the barb and thus allowing the practitioner to cut the barbed tip without creating further damage to the surrounding tissue. The shaft of the fishhook can subsequently be removed in a retrograde fashion. The advantages of this technique include that it may be successfully used in all types of barbed fishhooks and it provides the practitioner with direct visibility of the barb, thus minimizing risk for neurovascular injury during removal.¹ However, the primary disadvantage is that a second cutaneous wound is created in exposing the barb.

The cut-it-out technique (Figure 3) is similar to the advance-and-cut method in that they both require anesthesia along with creating an incision. With this method, a scalpel is used to create a small linear incision originating at the fishhook entrance site and ending at the approximated location of the fishhook's tip. The fishhook then is simply lifted superiorly in a retrograde fashion.

The string-pull method (Figure 4) has been credited to fishermen in South Australia and was first described by Cooke² in 1961. This method is relatively painless, does not require anesthesia, and has a high success rate when properly administered. However, it does require rapid and confident motions (ie, without hesitation) by the practitioner

and should not be performed on free-moving areas of the body (eg, earlobe).³ With this technique, a sturdy piece of suture (eg, 2/0 or 3/0 strength silk) is looped around the hook and is extended away from the practitioner at a 30° angle. The free end of the suture is then securely fastened around the index finger of the practitioner's dominant hand. The index finger of the nondominant hand should apply a downward pressure to the hook shaft to disengage the barb from the tissue. Simultaneously and rather quickly and forcefully the practitioner must pull the dominant index finger with the string attached in a superior and lateral direction, as depicted by the long arrow in Figure 4. If successful, the barbed hook will pull out of the entrance site. The use of string in pulling the fishhook parallel to the site of injury is helpful for smaller fishhooks that may be difficult to grab with fingers alone. However, with larger fishhooks, the string may not be required so long as the practitioner is able to obtain a secure grasp on the fishhook shaft. The string-pull method becomes particularly useful when anesthesia is unavailable or when the barb of the hook is embedded too deeply for safe advancement through tissue to visualize and cut the barb.

Lastly, the needle cover technique (Figure 5) is another simple method that does not require the creation of a secondary wound. An 18-gauge needle is simply inserted parallel to the fishhook curvature into the site of entry. By using the needle to slide

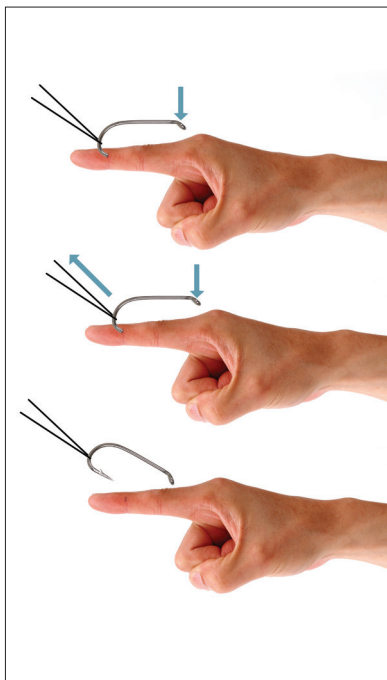


Figure 4. The string-pull method for fishhook removal.

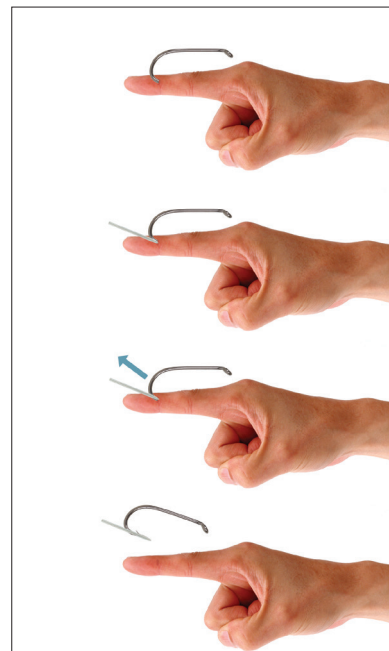


Figure 5. The needle cover technique for fishhook removal.

along the fishhook's curve, the practitioner is able to follow its pathway while in the tissue. The tip of the 18-gauge needle is then used to cap or cover the barb, thus allowing the fishhook to be removed in a retrograde fashion from the wound. In an outpatient setting, this technique does not require the creation of additional tissue damage and practitioners who are inexperienced with fishhook removal may proceed through the motions more slowly and methodically than the string-pull method permits.

Wound care following fishhook removal should involve adequate flushing of the wound with normal saline along with the application of topical antibiotics and a simple dressing and adhesive bandage. Oral prophylactic antibiotics typically are not required for shallow cutaneous injuries unless the fishhook is dirty, the patient is immunocompromised, or the patient has a condition lending to poor wound healing (eg, diabetes mellitus, peripheral vascular disease).³ When deciding on antibiotics, it is important to note that fishhook injuries while saltwater fishing are associated with *Vibrio* infection, while injuries sustained during freshwater fishing are associated with gram-negative bacteria (eg, *Pseudomonas* and *Aeromonas* species).³ Lastly, it is essential to find out the immunization status of the patient, and tetanus immune globulin should be provided if necessary.

Conclusion

Although guidelines for barbed fishhook removal are not available, outpatient physicians, including dermatologists, should not fear removal procedures. There are many safe and effective fishhook removal methods that are not time consuming and do not require complex equipment. Furthermore, familiarization with these same techniques may be useful for removal of other foreign bodies embedded in cutaneous tissue.

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