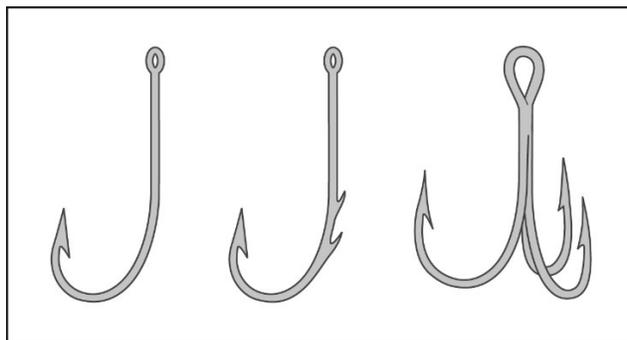


## Fishhook Injury Outline

### Etiology/pathophysiology

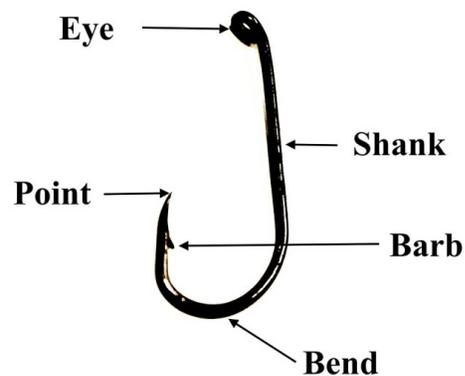
1. Fishhook Injuries are common in both sports fishing and commercial fishing. Injuries are more common on the upper extremities and the head. Incidence of injuries tends to spike in the summer months. Due to the design and purpose of the hooks, fishhook injuries can be very painful and difficult to remove from the tissue.
2. Tissue Damage
  - a. Most but not all fishhook injuries are limited to the soft tissue of the hands, face, head, and arms but can happen on any part of the body. Typically, deeper tissues are not involved due to the linear force of the fishing line that causes the hook to be parallel to the skin.
  - b. Any fishhook injury that is suspected to involve deeper structures like bone, tendons, vessels, and nerves require careful assessment to determine the best technique of removal.
    - i. Xray
3. Basic structure of Hook
  - a. Hooks consist of an eye, shank, bend, barb, and point.
  - b. The point is typically very sharp and can pierce the skin with very little force.
  - c. Not all fishhooks have barbs. Some have multiple. The purpose of the barb is to prevent the hook from coming out of the tissue.
4. Types of Hooks
  - a. No Barb
  - b. Single Barb
  - c. Multi Barb
  - d. Treble



One Barb

Multi Barb

Treble

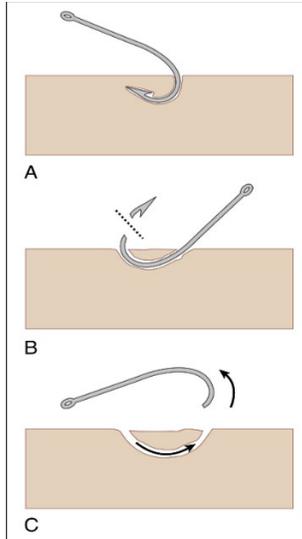


## **On-scene treatment**

1. Seek Medical Attention
  - a. Externally the injury may seem minimal, and the first instinct may be to remove the hook themselves. It is best to seek medical attention/treatment due to the likeliness to cause unnecessary soft tissue damage and the potential of the hook being lodged near a blood vessel, tendon, or nerve.
  - b. A barb embedded in tissue prevents the hook from being pulled out until the barb is disengaged. Its removal requires skill to prevent further tissue damage.
  - c. Cut fishing line and remove bait from hook when possible.
  - d. If a treble hook is the cause of the injury or the hook is connected to a lure that has multiple hooks, cover the extra hooks with tape or cut off extra hooks to prevent further injury.

## **ED treatment**

1. Pain Management
  - a. Local anesthesia (lidocaine)
  - b. Ice to reduce inflammation.
2. Removal Techniques
  - a. Choosing which technique to use depends on the type of fishhook, the location and depth at which the hook has become embedded in the patient's skin, and the treating physician's judgement.
  - b. Advance and Cut
    - i. Equipment
      1. 0.5 mL 1% lidocaine in syringe with a 27-gauge needle
      2. Wire cutters
      3. Protective eyewear
    - ii. Technique
      1. Clean area with Iodinated soap or another antiseptic solution
      2. Inject lidocaine into the tissue surrounding the hook.
      3. Once the area is anesthetized, advance the hook until the barb exits the tissue.
      4. Cut the barb off the hook and pull the hook back out through the portal of entry.



c. Push Through

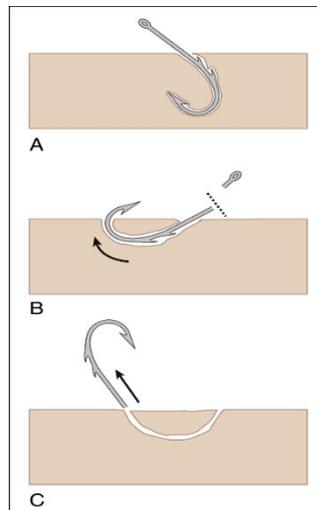
i. Best practice for multi barbed hooks.

ii. Equipment

1. 0.5 mL 1% lidocaine in syringe with a 27-gauge needle
2. Wire cutters
3. Protective eyewear

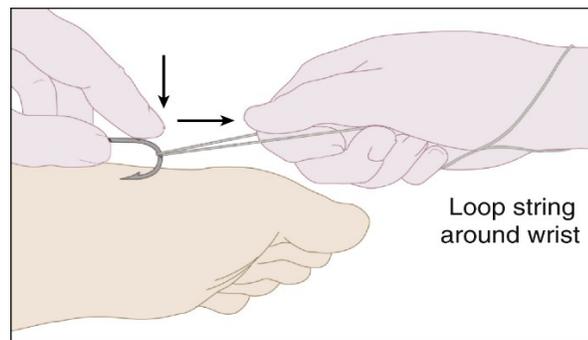
iii. Technique

1. Clean area with Iodinated soap or another antiseptic solution
2. Inject lidocaine into the tissue surrounding the hook.
3. Cut off eye of hook.
4. Pull on the point/barb of hook until entire hook exits the tissue.



d. String Yank

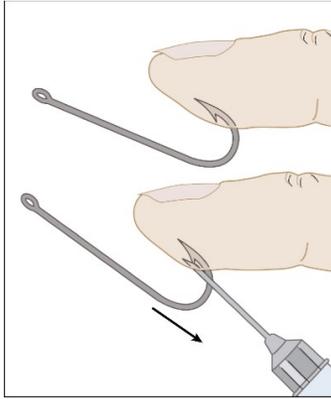
- i. Can be used to remove any size fishhook but works best when removing fishhooks of small to medium sized hooks. This technique also works well for deeply embedded fishhooks but must be performed on parts of the body that are fixed.
- ii. Equipment
  1. Silk Suture (0 or larger diameter) or string 2 to 3 feet in length
  2. 2-3 mL of 1% lidocaine with a 30-gauge needle
  3. Protective eye wear for everyone in the room.
- iii. Technique
  1. Clean area with Iodinated soap or another antiseptic solution
  2. Inject lidocaine into the tissue surrounding the hook.
  3. Tie the midpoint of the suture or string around the bend of the hook. Then securely wrap the rest of the line around your index and middle finger or wrist of your dominant hand.
  4. Stabilize the affected extremity on a flat surface. Grasp the eye and shank of the hook with your free hand and push them down towards the pts skin until the barb disengages, or until you are met with resistance.
  5. With the shank depressed and the barb disengaged, with your dominate hand grasp the string about 12 inches from the hook and firmly pull the string. Sudden and forceful pulling on the hook is necessary for the success of this technique.
  6. When done successfully, produces no new wounds.



- e. Needle Cover
  - i. Equipment
    1. 18-gauge needle
    2. 0.5 ml of 1% lidocaine with a 30-gauge needle
    3. Protective eye wear
  - ii. Technique
    1. Once tissue is adequately cleansed and anesthetized, introduce an 18-gauge needle through the same entrance point of the hook along

the inside curvature of the hook. The needle should be parallel to the shank with the bevel towards the inside curve.

2. Advance the hook slightly to dislodge the barb. Gently pull and twist the hook to firmly lodge the barb in the lumen of the needle.
3. Back the hook and needle out of the tissue together.



### 3. Post Procedure Care

- a. Assess tissue for hook fragments and possible foreign objects (bait).
  - i. Debridement may be necessary for proper healing and infection prevention.
- b. Administer tetanus toxoid.
  - i. Pt will need vaccine if 5 or more years has passed since last receiving one.
- c. Antibiotics
  - i. Typically prescribed topical antibiotics.
  - ii. Prophylactic oral antibiotics may be considered for pts who are immunosuppressed and or have delayed healing (cancer, diabetes, peripheral vascular disease) but since studies show a low rate of infectious complications after fishhook injuries topical antibiotics are usually sufficient.
  - iii. Prophylactic oral antibiotics may also be used for deeper or contaminated wounds (dirty hook/bait/contaminated water).
  - iv. Coverage should include normal skin flora and potential water-borne pathogens.
  - v. Common antibiotics include:
    1. first-generation cephalosporin
    2. clindamycin + levofloxacin
    3. Metronidazole (sewage- or soil-contaminated wound, not necessary if clindamycin given)
    4. doxycycline (coverage of Vibrio species if seawater exposure)
- d. Dress wound with sterile dressing.
- e. Injury involving the eye.
  - i. Do not attempt to remove in the ED.
  - ii. Cover eye with moist sterile dressing and consult ophthalmologist.

## **Role of the ED nurse**

1. Nurses should assess the wound when patient is admitted to the ER and gain knowledge.
  - a. How did the injury occur?
  - b. What type of hook was used?
    - i. What is the best technique for removal?
  - c. Was the hook new or used?
    - i. Dirty hooks can cause an increased risk for infection.
  - d. Was there anything on the hook when the injury occurred?
    - i. If there is bait on the hook, what kind of bait? Plastic worms? live bait?
    - ii. Increased risk for infection.
    - iii. Risk for retained foreign body object.
  - e. Where did the injury occur?
    - i. Contaminated water? What antibiotics are appropriate?
2. CUT BARB acronym.
  - a. Used to facilitate assessment of fishhook injuries.
  - b. C: consult immediately for critical areas, U: underlying structure injury, T: tetanus immunization, B: barb shape and size, A: antibiotic prophylaxis, R: radiology imaging, B: bait or lure fragments.
3. Comfort patient
4. Assist provider during the removal of the hook.
5. Wound care
  - a. Cleanse the wound.
  - b. Administer antibiotics.
  - c. Sterile dressing
6. Education

## **discharge/prevention instructions**

1. Discharge Education
  - a. Follow up with PCP to ensure adequate healing and absence of infection.
  - b. Signs and Symptoms of infection
    - i. Increased pain, tissue feels hot around wound, erythema, purulent drainage, throbbing, delayed healing.
    - ii. Should contact PCP as soon as possible if infection is suspected.
  - c. Antibiotics
  - d. Wound care
    - i. Keep would clean and dry.
    - ii. Dressing changes if appropriate.
2. Prevention Education
  - a. Caution when handling hooks.
  - b. Proper storage of hooks when not in use.
    - i. Tackle boxes.

- ii. Use of barb guards during storage.
- c. Keep fishing gear out of reach of children when not in use.
- d. Closely monitor children when fishing.
- e. Proper technique and spatial awareness when casting to prevent hook from injuring yourself and those around you.
  - i. Fish at least 30 feet away from the person next to you.
  - ii. Check that there isn't anyone behind you when you cast.
- f. Proper clothing when fishing can prevent or lessen severity of injury.
  - i. Shoes protect feet from hook when stepping on hook.
  - ii. Sunglasses or goggles protect your eyes.
  - iii. Protective gloves when handling hooks. Ex: removing hooks from fish, stringing new lines, baiting a hook.

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