Fish Hook Injury of Hand: Should Home Removal be Attempted?
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Citation

Abstract
A 35 year-old male with a fish hook injury to his left hand presented to the Orthopedic casualty with a bleeding hand and holding a large fish hook with other hand, the shank of which was deeply embedded in the first web space. Multiple attempts to remove the hook at home had failed. After rotating the hook deeper and disengaging the barb from the tissue, it was backed out along the path of entry. Home removal by unqualified persons should strongly be discouraged and the patients should be referred to specialized surgical units for atraumatic removal and further management.

INTRODUCTION
Fishing is recreational activity enjoyed by millions of people worldwide. Although uncommon in developing countries it is a popular pastime in the Western world. Because of their design and nature, accidental impalement with fishhooks poses problems with removal. Often, the hook cannot be removed by the patient because of the barbs. All fishhook injuries require careful evaluation of surrounding tissue before attempting removal. Most of the reports of fish hook injuries have been the focus of the ophthalmologists. We report a case of fish hook injury to the hand and discuss the management and complications of this unique injury.

CASE REPORT
A 35 year-old male sustained a fish hook injury to his left hand. He presented to the Orthopedic casualty after a period of four hours, with a bleeding hand and holding a large fish hook with other hand, the shank of which was deeply embedded in the first web space( Fig.1 )

Before presenting to the hospital, many attempts by his friends to remove the hook were not successful. An attempt by the junior specialist resident in the emergency examination room was of no use. An examination by senior resident revealed that a shank of the fish hook had pierced the dorsal aspect of the first web space. After advising the radiographs. The patient was shifted to operation theatre. The patients had no documentation of tetanus immunization so was immunized. Local anesthesia was infiltrated around the embedded part of the hook. Thorough cleaning of the wound, hook and whole limb was done with saline irrigation and povidone-iodine.

After small extension of skin wound, the hook was removed with the simple back out, a traumatic technique. After
rotating the hook deeper and disengaging the barb from the
tissue, it was backed out of the skin along the path of entry.
(Fig. 2)

**Figure 2**

The wound was again washed, examined for the presence of
possible foreign material and left open. The patient was
discharged on oral prophylactic antibiotic therapy with the
advice to attend the hospital every alternate day. The wound
healed without any complication and patient resumed his
daily activity in three weeks.

**DISCUSSION**

Fishing is a popular leisure activity in many parts of the
world. Even if you fish carefully, you may get a fishhook in
your skin. Fishhook injuries often occur when you remove
a slippery, flopping fish from your line. Injury may also
occur when you are casting a line, from another person
casting a line, or if you walk barefoot near fishing gear. The
chance of a fishhook injury increases if you are not familiar
with fishing gear. Although fishhook injuries to the limbs
are not common, but can cause major damage to muscles,
tendons, ligaments, neurovascular structures and bones if an
appropriate techniques for its removal is not employed.

Fishhook removal from areas such as the eyes, anterior neck,
and in close approximation to known neurovascular bundles
should be performed by the appropriate specialist.

Fishhooks come in an assortment of sizes and shapes,
designed for specialized kinds of fishing or for particular
types of bait. Most fishhooks contain barbs, and it is because
of these barbs that fishhook removal is a sensitive procedure.
With hooks exceeding two inches on average lures, hook
extraction becomes slightly more challenging.

Various techniques for the removal of fish hooks embedded
in non-ocular tissues have been reported in the literature,
among which back out method, snatch technique and
advance and cut method are popular. The back out method
refers to backing the hook out through its entrance wound.
Although technically simple, it is primarily useful for
barbless hooks. The snatch technique is a modification of the
back-out method, where downward pressure on the hook
shank and rapid extraction are used to diminish pain during
the removal. In advance and cut method the hook shank is
grapsed firmly and a controlled surgical incision is placed to
allow atraumatic delivery of the point and barb. Sterile wire
cutters are used to transect the hook at a location between
the barb and bend, after which the barbless hook is easily,
removed using the back-out technique. The needle cover
technique works well for the removal of large hooks with
single barbs but is most effective when the point of the
fishhook is superficially embedded and can be easily
covered by the needle. In our case, the size of the hook was
large and tip was buried deep in tissues. Advance and cut
Method would damage the tissues of hand, meant to perform
some delicate functions. We extended the skin wound to one
cm on either side and disengaged the hook barb and removed
it by push out technique.

Once the fishhook has been successfully removed, the
question of infection control arises. Obviously, any wound
should be thoroughly irrigated and cleaned. The organism
responsible for the most complications is the Aeromonas
species. While infections with these organisms are rare in
otherwise healthy persons, they are common in patients
injured by contaminated fish hook. Infections caused by
Aeromonas hydrophilia can be invasive and are rapidly
progressive. In a report of 23 confirmed cases of Aeromonas
wound infections following exposure to fresh water, 39%
involved fascia, tendon, muscle, bone, or joints.

We suggest that all fish hook wounds should be treated as
potentially contaminated and extension of skin wound is of
paramount importance to clean the interior of the wound. By
extension of the skin wound, the barbs of the hook can easily
be visualized for risk to damage some structure (Extensor
polices longus in our case), at the time of removal. Primary
closure of the wound should be delayed till the risk of
infection is over. prophylactic oral antibiotic therapy
(Preferably fluoroquinolone) for 7-10 days is sufficient in
non complicated wounds.

In conclusion, the barbed fish hooks are difficult to remove.
Home removal by unqualified persons should strongly be
discouraged and the patients should be referred to
specialized surgical units for atraumatic removal and further
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management.

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