

## Minimally Invasive Removal of Fish Hook from Cornea

### Balık Oltası Kancasının Korneadan Minimal İnvaziv Şekilde Çıkarılması

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**ABSTRACT** We aimed to point out a case, first in the literature, of the removal of a fish hook from cornea with no need for corneal suturation via a specific instrument. The case was operated under general anesthesia for the removal of the fish hook from cornea by cutting the distal part of the fish hook by a wire cutter. Fish hook from cornea was removed successfully by the help of wire cutter with no need for suturation. Isolated penetrating corneal injury caused by a fish-hook is rare but possible in fishing activities. In the case we publish, cutting the distal part of the hook by specific instrument provided no fragmentation of cornea or no need for suturation, after removal of fish hook from cornea. In the literature, the case we present is the first case which has not needed any suturation after removal of the fish hook from cornea.

**Keywords:** Cornea; eye foreign bodies

**ÖZET** Bu olgu sunumu ile korneaya saplanmış olta kancasının, tel kesici makas yardımı ile sütürasyona gerek kalmadan, başarılı bir şekilde çıkarıldığı olgunun paylaşılması amaçlanmıştır. Olgu genel anestezi altında, olta kancasının distal kısmının tel kesici ile kesilerek çıkarılması planlanarak opere edildi. Olta kancası, korneadan tel kesici yardımıyla başarılı bir şekilde çıkarıldı. Sütürasyona ihtiyaç duyulmadı. Olta kancasının neden olduğu izole penetran kornea yaralanmaları, balıkçılık faaliyetlerinde mümkün olabilir. Yayımladığımız bu olguda, balık kancası çıkarılırken kancanın distal kısmının belirli bir aletle kesilmesi, korneanın fragmantasyonunu veya sütürleme gerekliliğini ortadan kaldırmıştır. Sütürasyona gerek duyulmadan çıkarılan korneal balık oltası, literatürde ilk kez bu vaka ile sunulmaktadır.

**Anahtar Kelimeler:** Kornea; gözde yabancı cisimler

Isolated penetrating corneal injury caused by a fish-hook is rare but possible in fishing activities. Trying to pull the fish-hook against the direction of corneal entering can be traumatic and need more suturation to treat the aqueous humour leakage. Cutting the distal part of the hook will avoid irregular corneal injury.<sup>1</sup>

In the case we publish, cutting the distal part of the hook by a specific instrument provided no fragmentation of cornea or no need for suturation, after removal of fish hook from cornea.

In the literature, our case is the first corneal fish-hook injury which needed no suturation after minimal invasive removal of the fish-hook from cornea by cutting the distal part of the hook by a specific wire cutter.

## CASE REPORT

We aimed to present a case of isolated penetrating corneal injury caused by a fish-hook that was successfully removed and discuss the characteristics of our case with the past literature. In December 2019, a healthy 22-year-old male was injured in his right eye by a fish-hook while fishing. He applied to Muğla Training and Research Hospital Ophthalmology Department, the same day. Visual acuity of the case was 0,15 on the right eye. The fish-hook had penetrated the corneal epithelium, passed through the stroma and exited from a second corneal site (Figure 1). Iris, lens and retina were intact. It was observed that there was

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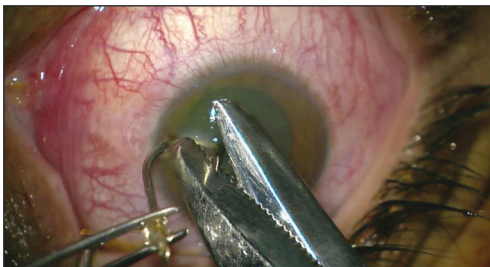
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no aqueous humor fluid leakage from the wound site.

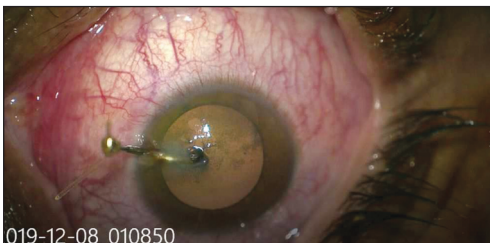
The patient was taken to the operating room under general anaesthesia immediately. Wire cutter was used to cut the fish-hook's shank at the end of the metal hook; then the fish-hook was removed by pushing it out of the wounds through the exit site (Figure 2, Figure 3). No aqueous humor fluid leakage was observed from the wound site (Figure 4). Therefore, without the need for corneal suturing, the anterior surface of the cornea was washed with an antibiotic drop. Therapeutic contact lenses were used for precautionary purposes and to close the corneal epithelium defect.



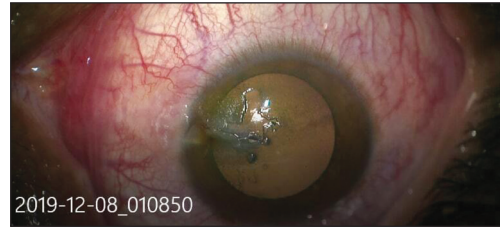
**FIGURE 1:** The fish-hook had penetrated the corneal epithelium, passed through the stroma and exited from a second corneal site.



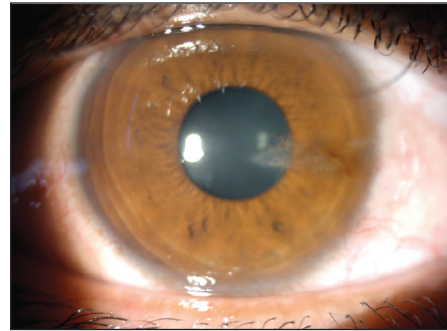
**FIGURE 2:** Wire cutter was used to cut the fish-hook's shank at the end of the metal hook.



**FIGURE 3:** The fish-hook was removed by pushing it out of the wounds through the exit site.



**FIGURE 4:** No aqueous humor leakage was observed from the wound site.



**FIGURE 5:** Anterior segment photography of the case, a week after the operation.

A week after the operation, on autorefractometry,  $-0.25$  astigmatism was measured and visual acuity was 10/10 on the right eye of the case. Anterior segment photography of the case, a week after the operation, was shown in the figure (Figure 5).

Written consent form was received from the patient about the publication of his history and images.

## DISCUSSION

In this case, if the hook had been tried to be removed by pushing it against the direction of corneal entering, fish-hook's shank at the end of the hook would have caused a disintegrating effect while passing backward from the corneal stroma. This damage would have negatively affect the healing of the cornea, by requiring multiple sutures. So, first of all, it was planned to cut off fish-hook's shank from the hook. For this, a tool called 'wire scissors' was used which is usually used by the plastic and reconstructive surgeons.<sup>1</sup>

Fishing is a fun and frequent activity but a number of personal injuries are probable.<sup>1</sup> Fishermen should wear some protective glasses to avoid this

kind of injuries.<sup>2</sup> In the literature, cases about penetrating corneal injury caused by a fish-hook have been shared in the past. In all of these cases, the wound site had to be enlarged to remove the hook from the cornea and/or corneal suturing with 10/0 nylon was required where the hook was cut.<sup>1-4</sup> In our case, fish-hook's shank was cut, there was no need to enlarge the wound site. Since there was no corneal leakage, there was no need for suturing. We claim that this case is the first and only fishhook corneal trauma case in the literature where suturation is not needed. The cases, published before in the literature about corneal fish hook trauma, went to suturation, but in our case, corneal trauma did not affect the cornea whole section. Both the technique we used to remove the fish hook and the half section effect of cornea by the trauma, caused the healing without suturation. This technique for the removal of the fish hook from cornea was used before in the literature but our case was the first case that no suturation was needed after the removal of the fish hook by using this technique. In about half of the cases followed in the literature, final vision is almost com-

plete. In our case, visual acuity was 10/10 in the first week after surgery.<sup>3-5</sup>

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### Conflict of Interest

*No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.*

### Authorship Contributions

**Idea/Concept:** Göksu Alaçamlı; **Design:** Göksu Alaçamlı, Murat Kaşıkçı, Aylin Karalezli; **Control/Supervision:** Göksu Alaçamlı, Murat Kaşıkçı, Aylin Karalezli; **Data Collection and/or Processing:** Göksu Alaçamlı, Murat Kaşıkçı; **Analysis and/or Interpretation:** Göksu Alaçamlı; **Literature Review:** Göksu Alaçamlı; **Writing the Article:** Göksu Alaçamlı; **Critical Review:** Göksu Alaçamlı, Aylin Karalezli; **Materials:** Göksu Alaçamlı, Murat Kaşıkçı.

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