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Penetrating Ocular Trauma Induced by a Fishing Hook: A Rare Case of Open Globe Injury

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Abstract | **Case Report**

Introduction: Eye injuries are common and frequently encountered throughout the world. The consequences of these injuries are anatomical and functional and can be irreversible and serious. The purpose of this observation is to present the mechanisms involved in this rare case and, above all, to describe the nature of the injuries caused. ***Patient and Method:*** The patient was a 37-year-old male fisherman who suffered an eye injury caused by a fish hook, resulting in a corneal-scleral wound with lens opacification, which was treated surgically in a second stage. ***Conclusion:*** Oculo-palpebral trauma is fairly common in our practice. Such trauma leads to poor visual outcomes, and therefore prevention and, above all, early treatment are recommended.

Keywords: Trauma, Fish, Patient, Fish Hook.

INTRODUCTION

Eye injuries are one of the leading causes of preventable monocular blindness and visual impairment. Worldwide, 19 million people suffer from monocular blindness or low vision related to trauma [1].

It is estimated that approximately one in five individuals will suffer a serious eye injury during their lifetime. Men are four times more likely than women to be affected, with the risk increasing further in rural areas, where nearly one in two men is at risk [2].

Eye injuries are numerous and common throughout the world.

According to the WHO, more than 1.5 million people worldwide are blind as a result of trauma [3]. The consequences of these injuries are anatomical and functional, and can be irreversible and serious. Eye injuries caused by fish hooks are particularly serious due to their perforating nature and, above all, the septic effect they cause.

Numerous studies have been conducted on eye injuries, but few specific studies have focused on eye injuries caused by fish hooks.

The purpose of this observation is to present the mechanisms involved in this rare case and, above all, to describe the nature of the injuries caused.

PATIENT AND METHOD

Case Study

The patient was a 37-year-old male fisherman from a rural area about 20 kilometres from our ophthalmology unit. He was admitted to our department 3 hours and 30 minutes after sustaining trauma to his left eye. On questioning, he had no medical or surgical history, was in good haemodynamic condition, well oriented in time and space, and had not received any treatment prior to admission to our ophthalmology unit. His ocular symptoms included sharp pain and redness of the ocular surface of his left eye. Ophthalmological examination revealed that his uncorrected distance visual acuity in his right eye was 6/6; in his left eye, he could count fingers at a distance of 3 metres. After instilling one drop of tetracaine anaesthetic to reduce

blepharospasm and one drop of fluorescein in both eyes, we performed a bilateral comparative examination, starting with the affected left eye. Examination of the adnexa of the left eye revealed conjunctival hyperaemia in the bulbar conjunctiva, with no wound to the tarsal conjunctiva. Examination of the cornea of the affected eye revealed a punctiform corneal-scleral wound at the 6 o'clock meridian, a positive Seidel's sign, and a shallow anterior chamber with a small amount of haematic Tyndall effect, indicating an obvious transverse corneal-scleral wound. Examination of the iris reveals an iris wound approximately 2 millimetres in diameter with associated pupillary deformation. Figure: 1

Examination of the lens reveals early lens opacification with no obvious damage to the zonular fibres; Ocular hypotension was noted on two-finger palpation of the affected eye. Examination of the other structures of the left eye, namely the vitreous and retina, was not performed. Given the surgical urgency, it was decided to proceed with rapid surgical intervention (Figure 2). It should be noted that examination of the fellow eye revealed no abnormalities.

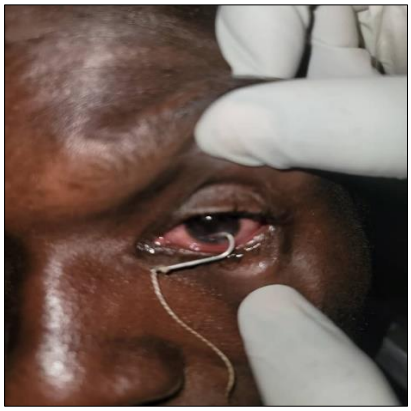

Figure 1: Patient with an intra-corneal fishhook in the left eye

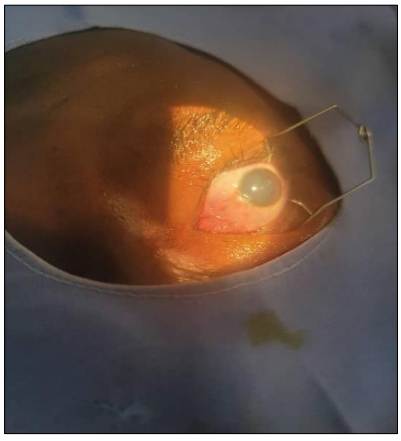

Figure 2: Patient during surgery after hook removal

DISCUSSION

Eyelid trauma is much more common in young people due to their socio-economic activities. It accounts for 20 to 47% of eye trauma consultations [4].

Several authors have made the same observation, including Robert EMS: Male subjects engage in more risky behaviour and are more likely to work in high-risk occupations [5]. According to Robert *et al*., ocular-orbital trauma is twice as common in male subjects in their series [5]. The time taken to treat eye injuries depends mainly on the time taken to consult a doctor, the existence of associated life-threatening injuries and the time of the patient's last meal, as a six-hour fast is required before general anaesthesia. The time taken to seek medical attention is generally less than 24 hours after the injury occurred [6]. In our case study, the patient presented approximately 3 hours and 30 minutes after the injury occurred, which is a favourable time frame for a good functional and visual prognosis. All authors report a predominance of corneal injuries, with rates ranging from 51 to 81% [4]. Open globe eye injuries more often affect the cornea than the sclera, due to its anterior position, making it more vulnerable to various types of trauma. When the visual axis is affected, the visual prognosis is often poor [6]. This is the case in our observation, where the wound is punctiform in nature at the 6 o'clock meridian. A consensus terminology for ocular contusions has been developed. This classification, known as Birmingham Eye Trauma Terminology (BETT), is based on a few fundamental principles. The ocular wall is defined as the sclera and cornea, and each clinical situation corresponds to a specific and unique term. All types of mechanical ocular trauma are included in this terminology [7]. The International Society of Ocular Trauma (ISOT) has developed a prognostic score (OTS: Ocular Trauma Score) based on clinical examination upon admission. This prognostic score was developed by the United States Eye Injury Registry (USEIR) for the purpose of probabilistic estimation of functional outcome at six months [7]. The major challenge associated with the management of eye and eyelid trauma remains the occurrence of post-traumatic complications, particularly damage to anatomical structures, which can lead to difficulties in treatment and, above all, a poor functional prognosis. In our case study, the patient presented with secondary opacification of the lens of the traumatised eye, which will be operated on in a second stage after corneal healing. Lens opacification is the most common complication. Its frequency was 42% according to Thompson *et al*., [5], 39.1% according to Rudd *et al*., [2], and 16.8% according to Behbehani *et al*., [10]. We operated on the patient one month after the trauma, inserting a posterior chamber implant (PCI) which produced a satisfactory functional result. Seven days after the operation, the visual acuity of the injured eye was rated at 6/18, allowing the patient to continue his main activity, which is fishing.

CONCLUSION

Ocular-palpebral trauma is fairly common in our practice. Such trauma can lead to poor visual

outcomes, and therefore prevention and, above all, early treatment are recommended.

Conflict of Interest: The authors declare that they have no interests to declare.

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