



## Recurrent corneal erosions related to an ocular injury 15 years before presentation

Núria Pérez Guerra<sup>a,\*</sup>, Eugen Reifschneider<sup>a</sup>, Sören L. Becker<sup>b</sup>, Peter Szurman<sup>a</sup>, Andrej Macek<sup>a</sup>, Annekatrin Rickmann<sup>a</sup>

<sup>a</sup> Eye Clinic Sulzbach, Knappschaft Hospital Saa, Sulzbach, Saar, Germany

<sup>b</sup> Institute of Medical Microbiology and Hygiene, Saarland University, Homburg, Saar, Germany

### ARTICLE INFO

#### Keywords:

Corneal erosion  
Eyelid eversion  
Diagnosis  
Foreign body

### ABSTRACT

**Purpose:** To report the case of a patient who presented with recurrent corneal erosions caused by an undetected plastic foreign body in the upper eyelid, which had remained asymptomatic for nearly 15 years following an ocular injury.

**Observations:** A 39-year-old patient presented with recurrent corneal erosions and frontal headaches of unknown aetiology over the preceding eight months. The patient had previously been seen by twelve different ophthalmologists and had been treated over a 6-month period with a bandage contact lens, and therapeutic corneal scraping had been performed twice. However, the corneal erosion had repeatedly reappeared after removal of the bandage contact lens. On clinical examination prior to a planned phototherapeutic keratectomy, we extracted a 1.5 cm plastic foreign body, localised in the subtarsal area of the upper conjunctival fornix. Upon specific questioning, the patient denied any recent trauma, but reported a work-related accident with an accompanying eye injury 15 years before presentation.

**Conclusions and importance:** Posttraumatic foreign bodies in the eye may remain asymptomatic for prolonged periods before giving rise to clinical signs such as recurrent corneal erosions. Hence, a thorough clinical examination with meticulous eyelid eversion should always be performed in such patients.

### 1. Introduction

A corneal erosion is a very painful condition characterized by a defect of the corneal epithelium, which can be recurrent under certain circumstances.<sup>1,2</sup> The most common causes are foreign bodies or corneal dystrophy, the latter of which is most commonly caused by map dot fingerprint dystrophy. The clinical symptomatology comprises moderate to severe ocular pain, photophobia and lacrimation. The primary treatment of a recurrent corneal erosion includes a corneal scraping, followed by a bandage contact lens, and, in more frequent recurrences, a phototherapeutic keratectomy (PTK). During PTK, the superficial stroma of the cornea is treated with an excimer laser so that the surface of the regrowing epithelium can adhere more efficiently, and irregularities are reduced.

Injuries caused by foreign bodies are still one of the most common causes for emergency ophthalmology consultations. Eversion of the upper eyelids to exclude subtarsal foreign bodies is an essential part of

the eye examination in all patients who present with a history of eye injuries. Indeed, subtarsal foreign bodies can be missed if no eyelid eversion is performed, which may lead to long-term complications such as recurrent traumatic keratitis or granuloma formation.<sup>3</sup>

### 2. Case report

A 39-year-old male patient was hospitalised for diagnostic work-up of severe headaches in the right frontal area, which had persisted for several weeks, and considerable pain in his right eye. The patient reported epiphora and a foreign body sensation that was most intense during the night. He denied any recent ocular injury or trauma and his past medical history was unremarkable. The neurological work-up remained inconclusive, and the patient presented subsequently to our hospital for an ophthalmological assessment. Upon examination, the uncorrected visual acuity of the affected right eye was 0.6 (or 20/32) as compared to 1.0 (or 20/20) on the left eye. Slit lamp examination

\* Corresponding author. Eye Clinic Sulzbach, Knappschaft Hospital Saar, An der Klinik 10, 66280 Sulzbach, Saar, Germany.

E-mail address: [nuria.perezguerra@kksaar.de](mailto:nuria.perezguerra@kksaar.de) (N. Pérez Guerra).

<https://doi.org/10.1016/j.ajoc.2022.101787>

Received 21 May 2022; Received in revised form 18 December 2022; Accepted 21 December 2022

Available online 22 December 2022

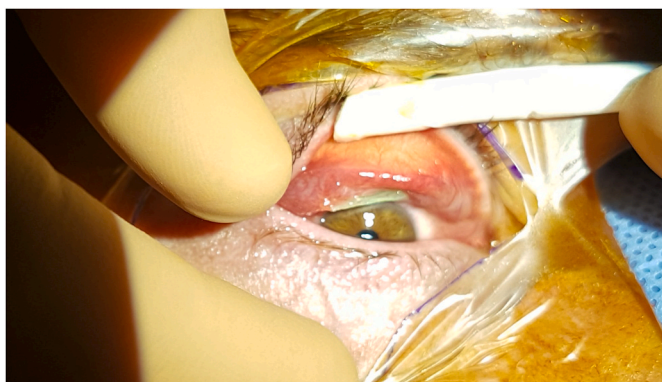
2451-9936/© 2022 The Authors. Published by Elsevier Inc. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

revealed a corneal erosion with swampy edges in the lower corneal area of the right eye, whereas no other pathology was observed. The swampy margins of the erosion were scraped and a bandage soft contact lens was inserted. Topical preservative-free eye lubricants and antibiotic eye drops were prescribed.

Two weeks later, the patient presented again to our outpatient department with an externally diagnosed herpes keratitis of the right eye, which had deteriorated during antiviral treatment with systemic and topical aciclovir. The diagnosis of a herpes keratitis could not be confirmed clinically and swabs did not detect any microbiological pathogen. Hence, the antiviral medication was discontinued and a new bandage contact lens was applied. During the next six months, the patient presented every two to four weeks with a recurrent corneal erosion at different ophthalmology centres. Of note, the symptomatology appeared as soon as the contact lens had been removed. Two further corneal scrapings were performed, and no map dot fingerprint dystrophy could be detected in the two eyes. However, corneal scarring developed due to the recurrent epithelial defects so that a PTK was planned at our hospital. When the patient presented before this intervention, a thorough upper eyelid eversion was performed during clinical examination, which revealed a hidden plastic foreign body above the edge of the tarsus, which had grown deep into the surrounding tissue (Fig. 1). The foreign body was surgically extracted from the conjunctiva and the levator palpebrae muscle, and measured approximately 1.5 cm (Fig. 2). Upon further specific questioning, the patient reported a work accident with plastic material 15 years before the onset of the corneal erosions. After removal of the foreign body, the patient did not have any recurrence of ophthalmological symptoms.

### 3. Discussion

Undetected foreign bodies can cause recurrent corneal erosions and corneal scarring,<sup>4</sup> even if they may remain clinically silent for prolonged periods. In case of a presumed organic foreign body, B-mode ultrasound or X-Ray imaging can be helpful tools to detect any unusual material. If the foreign body is presumed to be in the orbital area, magnetic resonance imaging or computed tomography should be performed. In our case, the patient reported that imaging studies had been performed during neurological work-up, but we did not have access to the respective discharge letters. However, he had not been informed about any abnormal finding. The conjunctival fornices are known to “trap” foreign bodies that may slowly migrate further into the eyelids. There are several case reports of trapped contact lenses,<sup>6</sup> retained organic materials like pieces of wood<sup>5</sup> or even honey bee stingers.<sup>7,8</sup> Additionally, it has been reported that entrapped foreign bodies such as synthetic fibers may give rise to the development of conjunctival granulomas (“teddy bear granuloma”),<sup>9</sup> and can migrate further into the eyelid.<sup>10</sup>



**Fig. 1.** Intraoperative picture of a foreign body in the right eye of a patient with recurrent corneal erosions. The foreign body can be seen on the upper edge of the tarsus.



**Fig. 2.** Plastic foreign body, which was extracted approximately 15 years after an ocular injury from a patient with recurrent corneal erosions. The foreign body measured 1.5 cm in length.

In our patient, we assume that the foreign body was trapped in the upper eyelid during the ocular injury that occurred more than a decade before presentation, and that it may have worked its way out over the years, starting from the surface of the upper eyelid towards the conjunctiva, which might explain the onset of clinical symptoms almost 15 years later. To the best of our knowledge, our case describes the longest latency period reported thus far between an eye injury and the subsequent extraction of the causative foreign body.

It is important to note that twelve ophthalmologists in four different eye care centres missed the correct diagnosis in this case, including the initial presentation at our hospital. The diagnosis was hampered by the difficult-to-reach location of the foreign body, which was found well above the margin of the upper tarsus, the atypical appearance of the corneal erosion in the inferior region of the eye, with no suggestive vertical “scratch” appearance, and a negative medical history for a recent ocular trauma. The patient did not mention his work-related ocular injury 15 years before presentation, because he had been examined by an ophthalmologist after this incident and no foreign bodies were found at that time.

### 4. Conclusions

Our case underscores the paramount importance of a meticulous upper eyelid eversion, which should always be performed during the clinical examination of patients with aetiologically unclear corneal erosions, even if there is no history of recent injuries.

### Patient consent

Written informed consent for publication of this case and the accompanying clinical images were obtained from the patient.

### Acknowledgments and disclosures

The authors declare that there is no conflict of interest.

### Funding

No specific funding was received for this work.

### References

1. Lin SR, Aldave AJ, Chodosh J. Recurrent corneal erosion syndrome. *Br J Ophthalmol*. 2019;103:1204–1208.
2. Miller DD, Hasan SA, Simmons NL, Stewart MW. Recurrent corneal erosion: a comprehensive review. *Clin Ophthalmol*. 2019;13:325–335.
3. Popa DP, Nuta M, Ionica V, Tajjar M. [Recurrent traumatic keratitis due to an overlooked conjunctival foreign body]. *Oftalmologia*. 1990;34:59–61.
4. Ma IH, Kuo BI, Hou YC. Recurrent corneal erosion caused by retained sutures in blepharoplasty. *Int Ophthalmol*. 2019;39:1387–1390.
5. Baumeister M, Kuhli-Hattenbach C, Luchtenberg M. Corneal ulcer caused by a wooden foreign body in the upper eyelid 6 months after minor injury. *Ophthalmologica*. 2006;220:397–399.
6. Kang H, Takahashi Y, Kakizaki H. Migration of rigid gas permeable contact lens into the upper eyelid after trauma: a case report. *BMC Ophthalmol*. 2016;16:71.
7. Bhalerao SA, Singh P, Rani PK, Rathi V. The sting of a honey bee: an unusual subconjunctival foreign body. *Indian J Ophthalmol*. 2017;65:1226–1228.
8. Davidorf OA, Ng AE, Davidorf JM. Retained eyelid bee stinger: a case of secondary corneal abrasion. *Am J Ophthalmol Case Rep*. 2020;18, 100670.
9. Farooq MK, Ju Prause, Heegaard S. Synthetic fiber from a teddy bear causing keratitis and conjunctival granuloma: case report. *BMC Ophthalmol*. 2011;11:17.
10. Kim YJ, Kim J, Choung H, Kim MK, Wee WR. Conjunctival granuloma with necrosis associated with exposed suture in upper double lid masquerading as ocular surface squamous neoplasia: a case report. *BMC Ophthalmol*. 2017;17:55.