

## 5 cases, 1 cause of irritated eyes

Irritated and watery eyes. Mild erythema of the nasal bulbar conjunctiva. Photophobia. Blurred vision. These were just some of the signs and symptoms that prompted the following 5 patients to seek treatment. Though the specifics of their cases varied, their diagnosis was the same.

**CASE 1** A 35-year-old man presented with a foreign-body sensation and tearing of his right eye that had lasted for a few days. The eye showed mild erythema of the nasal bulbar conjunctiva and linear corneal abrasions.

**CASE 2** A 23-year-old woman came in complaining of an irritated and watery eye that had been bothering her for the past 24 hours. She had normal visual acuity, bulbar conjunctival injection, and linear corneal abrasions.

**CASE 3** A 28-year-old man presented with irritation, photophobia, and redness

of his left eye that had been bothering him for the last 2 weeks. He had been treated with a topical antibiotic, but showed no improvement.

**CASE 4** A 15-year-old girl came in complaining of irritation of the left eye over the last month. She was seen by an ophthalmologist, who attributed her symptoms to exposure keratopathy due to lagophthalmos—inability to close, or poor closure of, the eyelids (**FIGURE**). He treated her with different lubricants and antibiotics, without improvement.

**CASE 5** A 15-year-old boy came in complaining of blurred vision in his right eye. His ophthalmic history was significant for corneal abrasion following a vague history of trauma to that eye a month ago. His best corrected visual acuity in that eye was 20/60.

### What is your diagnosis?

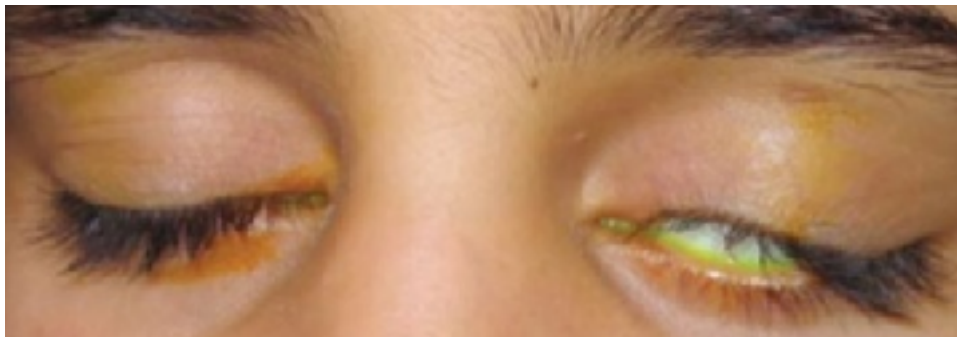
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#### FIGURE

#### Eye irritation attributed to exposure keratopathy



An ophthalmologist attributed this 15-year-old's irritation of the left eye to exposure keratopathy due to lagophthalmos—inability to close, or poor closure of, the eyelids. (The green color is fluorescein dye.) Treatment with various lubricants and antibiotics provided no relief.

**FAST TRACK**

**Researchers found that cilia in the upper punctum was 3 times more frequent than cilia in the lower punctum**

**Diagnosis****■ Misplaced eyelash**

The life cycle of eyelashes is usually an asymptomatic process. Sometimes, though, lashes can find their way into unusual anatomical sites, as occurred in the 5 cases described on the previous page. Here, broken down by the location in which the eyelash was found, is a discussion of the trouble a misplaced eyelash can cause.

**Punctum: Upper is more common than lower**

Once an eyelash is shed into the external ocular surface, it can cause foreign body sensation, leading to reflex tearing that will carry it away to the lacus lacrimalis. At this point, it comes in close contact with the punctum and can be propelled by the lids or sucked into the canaliculus in the blink cycle.

If it finds its way into the punctum, the barbs on the hair prevent it from being expelled. They can obstruct the canaliculi, causing epiphora, or incite inflammation and possibly infection, causing canaliculitis or dacryocystitis.<sup>1</sup>

Eyelashes are often reported to enter the upper and lower punctum, though Nagashima and Kido found that cilia in upper punctum was 3 times more frequent than cilia in the lower punctum.<sup>2</sup>

In **CASE 1**, involving mild erythema of the nasal bulbar conjunctiva and linear corneal abrasions, the 35-year-old patient had an eyelash protruding from the upper punctum. The rest of the exam was unremarkable. His physician removed the eyelash mechanically, without resistance. This relieved his symptoms and he was given a prophylactic topical antibiotic.

In **CASE 2**, the 23-year old woman with bulbar conjunctival injection and linear corneal abrasions, there was an eyelash projecting out of the lower punctum. The eyelash was removed easily and she, too, was treated with topical antibiotic ointment.

**Meibomian gland:****An uncommon spot**

Cilia in the meibomian gland is unusual. Clinicians who suspect this is the cause of a patient's discomfort will need to differentiate it from acquired distichiasis, which is metaplastic eyelash growth that results from chronic lid inflammation. Careful examination, and the absence of resistance on removal, differentiate the 2 conditions.

In **CASE 3**, involving the 28-year-old man with eye irritation and photosensitivity, an examination showed an eyelash protruding from a meibomian gland orifice 2 mm lateral to the lower punctum. He also had corneal punctate epithelial erosions and mild ciliary flush. His physician removed the eyelash with forceps without resistance. He was given a topical antibiotic.

In **CASE 4**, involving the 15-year-old pictured on page 365 who had been unsuccessfully treated with different lubricants and antibiotics for exposure keratopathy, an examination revealed shortening of the upper and lower eyelids of the affected eye and abnormal upper eye lid contour causing 4 to 5 mm of lagophthalmos. She had a positive Bell's phenomenon and normal tear break-up time.

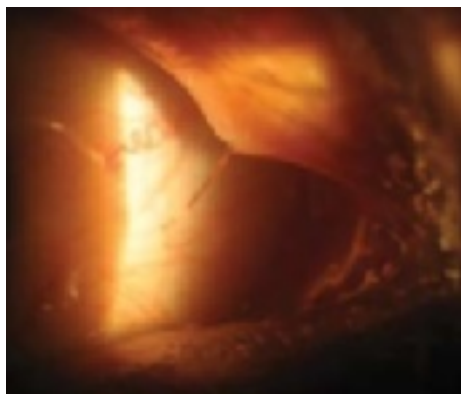
Further examination of the upper eyelid margin, pictured at far right, showed a cilium projecting out of a meibomian gland orifice toward the ocular surface with corneal punctuate erosions. The eyelash was removed smoothly with forceps without resistance, and her symptoms resolved within a few days.

**Corneal stroma: Suspect trauma**

Spontaneously or after trauma, loose eyelashes can penetrate the anterior ocular surface layers by their pointed tip.<sup>3,4</sup> These dislodged eyelashes can cause no symptoms at all, or cause foreign body sensation, reflex tearing, and localized erythema mimicking other ocular conditions. Moreover, eyelashes can be washed

**CASE 1**

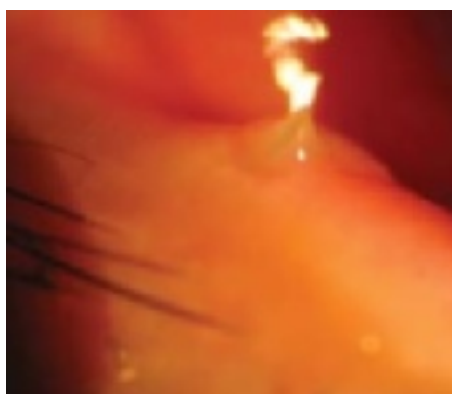
**Upper punctum**



Eyelash protruding from the upper punctum.

**CASE 2**

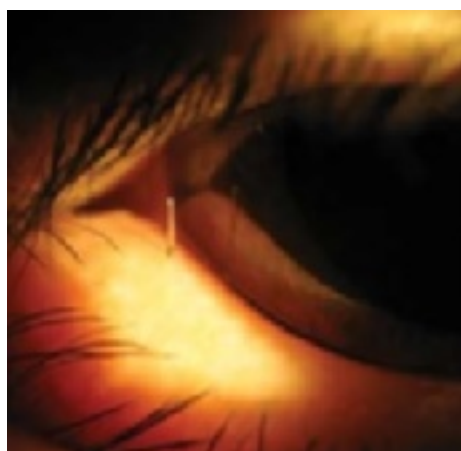
**Lower punctum**



Eyelash projecting out of the lower punctum.

**CASE 3**

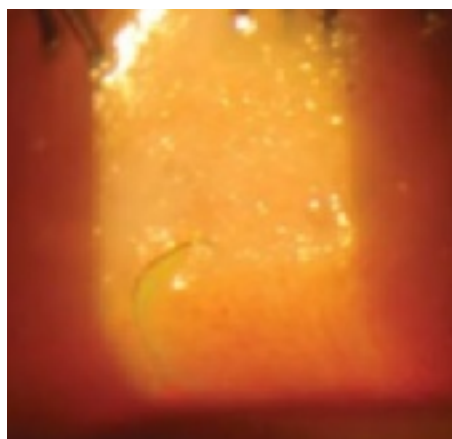
**Meibomian gland near lower punctum**



Eyelash protruding from a meibomian gland orifice 2 mm lateral to the lower punctum.

**CASE 4**

**Meibomian gland**



Closer examination of patient shown on page 365 revealed an eyelash projecting out of a meibomian gland orifice toward the ocular surface with corneal punctate erosions.

**FAST TRACK**

**Considering the history of trauma, the cilium was probably mechanically embedded on the cornea at the time of injury**

**CASE 5**

**Corneal opacity**



Corneal opacity containing a horizontally lying eyelash.

# Coming soon in Photo Rounds

## After Hurricane Katrina in August 2005,

this patient was forced to wade through the polluted waters of New Orleans for many hours before being rescued by boat. Four days passed before she had access to a shower. It was after this shower that she first noticed a single erythematous lesion the size of a silver dollar on her left thigh. The lesion then faded to hypopigmented macules and plaques. Over time, the rash spread to both thighs and arms. She does not have any itching, pain, bleeding, fever, chills, weight changes, or GI symptoms.



**Could the flood waters of Katrina be responsible for this condition?**

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out into the lower drainage system where they can cause tear stagnation and act as a nidus for dacryolith.<sup>5</sup>

Considering the history of trauma in **CASE 5**, we believe the cilium was mechanically embedded on the cornea at the time of injury and got buried as the surface reepithelialized. Examination revealed a corneal opacity containing a horizontally lying cilium. The patient was referred to a cornea specialist for further management.

## ■ When to suspect a misplaced eyelash

It's important to examine the eyelid margin carefully in patients with nonspecific eye symptoms, as misplaced eyelashes can be easily overlooked and treated inappropriately. Moreover even in the presence of an obvious pathology, be sure to look for associated findings, especially when that pathology cannot fully explain the symptoms. That was especially important in Case 4, with the rare occurrence of exposure keratopathy in a young patient. ■

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### Disclosure

No potential conflict of interest relevant to this article was reported.

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