

Misdirected Eyelashes in a Four-Year-Old Girl with Photophobia: Double the Trouble



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ABSTRACT

One in ten thousand people are affected by distichiasis, a rare ocular abnormality whereby accessory eyelashes arise from or slightly posterior to the meibomian gland orifices. Given the non-specific symptoms, diagnosis is often missed or delayed, which can lead to corneal damage and compromise visual development in children. A 4-year-old girl was referred for longstanding, severe photophobia. Visual acuity was reduced (Snellen acuity 6/18 each eye). Gross inspection of the eyelid margin revealed an extra row of eyelashes emanating from the meibomian gland orifices in both the upper and lower eyelids bilaterally. Severe photophobia and diffuse bilateral punctate corneal epithelial erosions were also noted. The patient was diagnosed with congenital distichiasis which was repaired surgically using an eyelid-splitting technique with a combination of cryotherapy and radiofrequency ablation of the accessory eyelashes. This case emphasizes the importance of gross inspection of the external ocular structures in children presenting with persistent ocular symptoms.

RÉSUMÉ

Une personne parmi dix mille est atteinte de distichiasis, une anomalie oculaire rare caractérisée par la présence de cils accessoires poussant au niveau ou légèrement postérieur des orifices des glandes de Meibomius. Compte tenu des symptômes non spécifiques, le diagnostic est souvent manqué ou retardé, ce qui peut entraîner des lésions cornéennes et compromettre le développement visuel chez les enfants. Une fillette de 4 ans a été orientée en raison d'une photophobie sévère et de longue date. L'acuité visuelle était réduite (selon l'échelle de Snellen de 6/18 pour chaque œil). L'examen macroscopique du bord palpébral a révélé une rangée supplémentaire de cils émanant des orifices des glandes de Meibomius, au niveau des paupières supérieures et des paupières inférieures, de manière bilatérale. Une photophobie sévère et des érosions épithéliales cornéennes ponctuées diffuses bilatérales ont également été observées. La patiente a reçu un diagnostic de distichiasis congénital, qui a été corrigé chirurgicalement à l'aide d'une technique de fendage palpébral en combinaison avec la cryothérapie et ablation par radiofréquence des cils accessoires. Ce cas souligne l'importance de l'examen macroscopique des structures oculaires externes chez les enfants présentant des symptômes oculaires persistants.

CASE PRESENTATION

A 4-year-old girl was referred to Paediatric Ophthalmology for severe photophobia from infancy, with a concern for possible albinism. The referring optometrist noted that the physical examination was limited, with the patient adopting a chin-down head position and maintaining closed eyelids during the exam; but refractive error, ptosis, and strabismus were all listed as findings in the referral. The family reported a 'droopy left eyelid' at birth; however, initial assessment by a paediatrician revealed no ocular abnormalities. A subsequent finding of reduced visual acuity in the right eye was treated with spectacle correction, but these were discontinued soon after, as the patient refused them. She complained of ocular pain and the family described mild yellow ocular discharge in the mornings. Symptoms improved with cold compresses. The family denied any history of pruritis, diplopia, flashes, floaters, or systemic symptoms including rashes or recent upper respiratory tract infections. Family history was non-contributory other than for a paternal grandfather with a 'lazy eye'. At presentation, the patient's visual acuity was below normal for age at 6/18 (Snellen) in each eye. Gross inspection of the eyelid margin revealed an extra row of eyelashes emanating from the meibomian gland orifices in both the upper and lower eyelids bilaterally (**Figure 1A** and **1B**), with ocular surface irritation manifesting as diffuse bilateral punctate corneal epithelial erosions and reduced eyelid opening (appearing as a left upper eyelid ptosis). The patient was

diagnosed with congenital distichiasis which was surgically repaired via eye-splitting with combined cryotherapy and radiofrequency eyelash ablation, with symptom resolution following surgery.

DISCUSSION

In this case, careful yet simple inspection of the eyelid margins revealed subtle aberrant lashes, leading to a rare diagnosis. Distichiasis is a rare ocular abnormality that affects 1 in 10,000 people whereby accessory eyelashes arise from or near the meibomian gland orifices.^{1,2} These glands are modified sebaceous glands located in the tarsal plate of the eyelids, which secrete meibum, an oil-rich substance, onto the ocular surface.³ Congenital distichiasis occurs when pilosebaceous units differentiate into eyelashes instead of meibomian glands, and may be observed in genetic syndromes including lymphedema-distichiasis syndrome and focal facial dermal dysplasia.^{2,4}

Aberrant eyelashes can form a partial or complete secondary row on the upper and/or lower eyelids.⁴ During infancy, accessory eyelashes are typically soft and well-tolerated.⁵ However, they become problematic as they mature and irritate the cornea, causing pain and photophobia.^{2,4} If left untreated, this can lead to corneal epithelial defects, scarring, and astigmatism.⁶ Treatment is variable and often tailored to individual cases, largely dependent on location and extent of involvement.² Multiple



Figure 1. Patient's (A) left and (B) right eye demonstrating accessory lashes arising from and slightly posterior to the meibomian gland orifices on the (A) lower and (B) upper eyelids (arrows).

Table 1. Summary of differential diagnoses for distichiasis

Diagnosis	Definition
Distichiasis	Accessory eyelashes arise from or near the meibomian gland orifices
Trichiasis	Normally-placed lashes which grow posteriorly towards the cornea
Entropion	Inward rotation of the eyelid margin causing normal eyelashes to be misdirected posteriorly towards the corneal surface
Epiblepharon	Presence of a horizontal skin fold across the margin of the eyelid leading to vertical/inward positioning of the cilia

modalities such as electrolysis, cryotherapy, laser ablation, and surgical excision have been described in the literature with an overall success rate of 69-88%.²

While tempting for the provider and patient, eyelash epilation is counterproductive, as short, stubby eyelashes quickly regrow and inevitably cause worse corneal irritation than their predecessors.^{2,7} A series of 24 patients with distichiasis evaluated the treatment modalities of epilation, lid margin cryotherapy, and eyelid splitting cryotherapy to the posterior lamella and found that the latter effectively relieved symptoms without re-treatment in 87% patients.¹ In severe bilateral cases, such as our patient, surgical eyelid-splitting with cryotherapy in a staged approach, supplemented by targeted radiofrequency ablation of eyelash follicles, under general anaesthesia is favoured.²

Distichiasis should be differentiated from other eyelash disorders which can cause similar symptomatology (**Table 1**). Trichiasis refers to normally-placed lashes which grow posteriorly towards the cornea, often secondary to inflammation and scarring of the eyelash follicles.⁸ Causes of trichiasis include chronic inflammatory disorders of the eyelid margin (blepharitis and meibomitis), dermatological conditions (atopic dermatitis, actinic elastosis and herpes zoster), conjunctival diseases (cicatricial trachoma and ocular pemphigoid), or eyelid margin scarring due to chemical, physical, or surgical trauma.⁸ Entropion involves inward rotation of the eyelid margin causing normal eyelashes to be misdirected posteriorly towards the corneal surface, resulting from involutional, mechanical (mass lesion), spastic (orbicularis muscle spasm), or cicatricial (conjunctival inflammation and scarring) changes.^{5,9} In the paediatric population, congenital defects and facial nerve palsy can also result in entropion.¹⁰ Epiblepharon, a congenital ocular condition common in people of Asian descent, involves the presence of a horizontal skin fold across the margin of the eyelid leading to vertical/inward positioning of the cilia, with potential for irritation and tearing.¹¹

Slit lamp examination can provide a detailed assessment of the eyelid margin, skin, conjunctiva, cornea and direction of eyelash growth in cooperative patients.⁴ However, as seen in the case of our patient, gross inspection of the eyelids can identify misdirected or accessory eyelashes and also reveal scarring of the eyelid secondary to injury or chronic inflammation. Prompt identification can help to prevent delayed diagnosis and facilitate timely appropriate referral for adequate management.

Overall, this case emphasizes the importance of maximizing the use of gross inspection of external ocular structures in children. A high index of suspicion for rare external ocular abnormalities should be maintained for children presenting with persistent ocular symptoms. Diligent inspection of the eyelid margins in children with unexplained photophobia can prevent diagnostic delays and facilitate prompt referral for definitive management.

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Conflicts of Interest Disclosure

There are no conflicts of interest to declare.

Informed Consent

Written informed consent was obtained from the patient's family for publication of this case.