



Case report: Head lice in the eyelashes

Tingyu Qin^{*}, Yingnan Lv, Shasha Gao, Can Chai, Wei Li

Department of Ophthalmology, The First Affiliated Hospital of Zhengzhou University, Zhengzhou, China

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ABSTRACT

Purpose: Head lice infection of the eyelashes and adjacent eyelids is extremely rare. In this case report we present a child with head lice infection of the eyelashes.

Observations: A 3-year-old boy presented to the ophthalmology department with a chief complaint of itching and visible abnormal secretions of the upper eyelashes in the right eye for more than 1 week. On ocular examination, a large number of nits and brown secretions were tightly adhered to the root of the upper eyelashes of the right eye, and translucent parasites crept slowly along the eyelashes, without impairment of vision. A few of the parasites and nits were further viewed with a microscope and were identified as head lice.

Conclusions and Importance: This case suggests that ophthalmologists should not only consider common inflammation and allergies, but also be alert to parasitic infections when treating patients with ocular itching and abnormal secretions.

1. Introduction

Lice are hematophagous ectoparasites of human beings and consist of three types: head lice, body lice, and crab lice.¹ Head lice live in human hair and are responsible for a very intense pruritus. Direct head-to-head contact is the main transmission mechanism.² Head lice infestation can occur throughout all regions of the world and at any age, but head lice tend to infect individuals with poor hygiene, especially in children.³ Head lice can carry and transmit pathogens that may lead to wound infection, such as *Staphylococcus aureus* and *Streptococcus pyogenes*.^{2,4} Furthermore, the patient's psychological health can also be greatly affected.⁵

Head lice can occasionally infest eyelashes.⁶ In this report, we present a case of severe head lice infection of the eyelashes.

2. Case report

A 3-year-old boy presented to the ophthalmology department with a chief complaint of itching and visible abnormal secretions of the upper eyelashes in the right eye for more than 1 week. His parents said he often played with sand and rubbed his eyes with his dirty hands. His grandmother had scraped the affected area of the eyelid with a coin. The child had no medical history of allergies or systemic diseases. Visual acuity was normal in both eyes. The upper eyelid of his right eye was red and swollen. A careful slit lamp examination revealed translucent parasites

creeping slowly along the eyelashes (Fig. 1A and B). In addition to the parasites, a large number of nits and brown secretions were tightly adhered to the root of the upper eyelashes of the right eye (Fig. 1C). On further investigation, his parents stated that neither the patient's sister nor other family members had similar symptoms.

In order to complete removal of the parasites and nits, the right upper eyelashes were carefully trimmed. A few of the parasites and nits were further viewed with a microscope and were identified as head lice (Fig. 2A and B). Based on microscopic results, the child was diagnosed with head lice infection of the eyelashes, which is extremely rare. After removing the affected eyelashes, the head lice, and their nits, we disinfected the eyelid margin with compound iodine disinfection cotton swabs. After the lice, nits and pathological secretions were removed, his ocular symptoms were completely resolved immediately. Following this treatment, the boy was also advised to apply 0.5% erythromycin ophthalmic ointment on the eyelid margin to suffocate any nit or louse that may remain and to combine this with 0.3% tobramycin eye drops that are effective for nits and lice for 1–2 weeks until he returned for a follow-up examination.

In addition to the treatment of the patient, other family members, pets, and the family environment should be thoroughly cleaned and disinfected. In daily life, attention should be paid to personal and family environmental hygiene. We recommend the patient to follow up closely in order to monitor for recurrence of infection.

^{*} Corresponding author. Department of Ophthalmology, the First Affiliated Hospital of Zhengzhou University, Zhengzhou, 450052, China.
E-mail address: fccgaoss@zzu.edu.cn (T. Qin).

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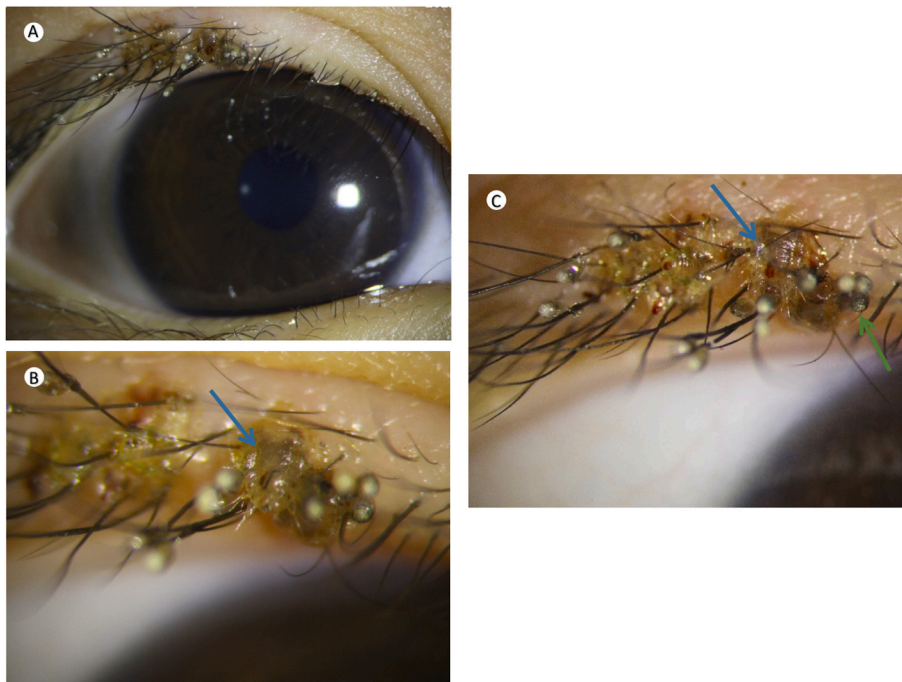


Fig. 1. Clinical presentation

A- Abnormal secretions are visible on the right upper eyelashes;

B- Translucent head lice (blue arrow);

C- Some hematophagous head lice (blue arrow) and nits (green arrow) are seen on the eyelashes. (For interpretation of the references to colour in this figure legend, the reader is referred to the Web version of this article.)

3. Discussion

There are many kinds of parasites that can invade the human eye. The parasites can live in the retina, orbit, eyelashes, and other locations.⁷ Parasitic infections of eye and their secondary immune reactions can lead to ocular structural damage and even vision loss.⁸

Clinically, ocular surface parasites are relatively rare, and lice are one of them. Lice spend their entire life-cycle on the host, with three periods of eggs, nymphs, and adults.^{2,5} Female lice secrete a glue-like substance that makes the eggs attach firmly to the base of the hair.⁵ Nymphs and adults obtain nutrients from human blood by piercing the skin with mouthparts and injecting a small amount of saliva with vasodilatory and anticoagulative properties.^{1,5} This characteristic leads to itching and pain, which is the main clinical symptoms of lice infection.^{1,2}

Head lice and pubic lice can occasionally be parasitic on the eyelashes.⁹ Several ophthalmic publications have reported crab lice infection of eyelashes, also known as phthiriasis palpebrarum.^{10,11} Head lice infestation of eyelashes accounts for only a minor proportion of them.^{9,11} Head lice predominantly infest schoolchildren and are transmitted through close head-to-head contact.² However, children may also be exposed to fomites with active lice or eggs, so that head lice eventually become parasitic in the eyelashes through eye rubbing.⁵ In this case, it is essential to note that our patient had the habit of playing with unhygienic items and rubbing his eyes, and we speculate that his infection was mediated through this indirect transmission mechanism. Crab lice infections are common in adults, which are transmitted through sexual contact.² The differential diagnosis between head lice and crab lice is mainly made by morphology.^{2,9} The fundamental treatment is the complete removal of lice and their nits.^{5,11}

This report summarized a typical case of head lice infection of the eyelashes. This condition is a rare ocular disease.³ Patients always present with eyelid itching and abnormal secretions, which are

unfortunately the most common symptoms of all types of ocular surface diseases.^{1,2} In addition, the adult lice are translucent.² Therefore, head lice infection of the eyelashes might be easily misdiagnosed as common blepharitis. The treatment of this disease is not difficult. However, misdiagnosis can prolong patients' pain and even affect their vision.

This case suggests that ophthalmologists should not only consider common inflammation and allergies, but also be alert to parasitic infections when treating patients with ocular itching and abnormal secretions.

Patient consent

Written consent for publication was obtained from both the patient and his parents.

This report does not contain any personal identifying information.

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Authorship

All authors attest that they meet the current ICMJE criteria for Authorship.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

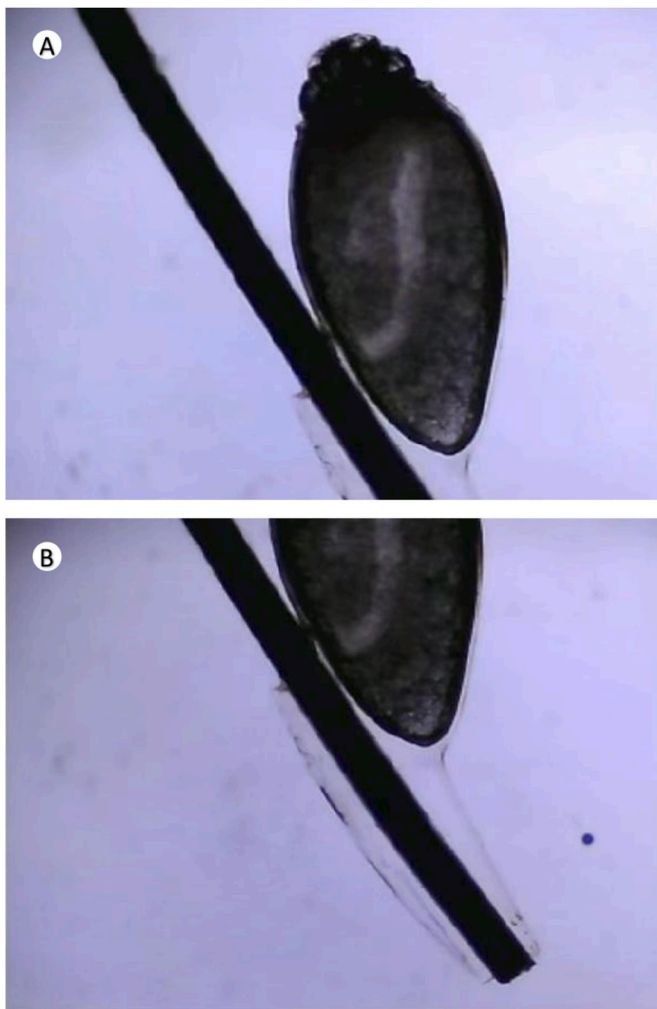


Fig. 2. Micrography

A- Observe the nit under a microscope;

B- The nit sticks firmly to the eyelashes.

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References

1. Veraax A, Raoult D. Biology and genetics of human head and body lice. *Trends Parasitol.* 2012;28(12):563–571. <https://doi.org/10.1016/j.pt.2012.09.003>.
2. Coates SJ, Thomas C, Chosidow O, Engelman D, Chang AY. Ectoparasites: pediculosis and tungiasis. *J Am Acad Dermatol.* 2020;82(3):551–569. <https://doi.org/10.1016/j.jaad.2019.05.110>.
3. Chosidow O. Scabies and pediculosis. *Lancet.* 2000;355(9206):819–826. [https://doi.org/10.1016/s0140-6736\(99\)09458-1](https://doi.org/10.1016/s0140-6736(99)09458-1).
4. Burkhart CN, Burkhart CG. Fomite transmission in head lice. *J Am Acad Dermatol.* 2007;56(6):1044–1047. <https://doi.org/10.1016/j.jaad.2006.10.979>.
5. Nolt D, Moore S, Yan AC, Melnick L, COMMITTEE ON INFECTIOUS DISEASES. Committee on practice and ambulatory medicine, section on dermatology. *Head Lice. Pediatrics.* 2022;150(4), e2022059282. <https://doi.org/10.1542/peds.2022-059282>.
6. Ryan MF. Phthiriasis palpebrarum infection: a concern for child abuse. *J Emerg Med.* 2014;46(6):e159–e162. <https://doi.org/10.1016/j.jemermed.2013.11.090>.
7. Padhi TR, Das S, Sharma S, et al. Ocular parasitoses: a comprehensive review. *Surv Ophthalmol.* 2017;62(2):161–189. <https://doi.org/10.1016/j.survophthal.2016.09.005>.
8. Hoti SL, Tandon V. Ocular parasitoses and their immunology. *Ocul Immunol Inflamm.* 2011;19(6):385–396. <https://doi.org/10.3109/09273948.2011.626141>.
9. Tabuenca Del Barrio L, Mozo Cuadrado M, Zubicoa Enériz A, Martínez de Espronceda Ezquerro I. Itching eyes after itching around the head. *GMS Ophthalmol Cases.* 2020;10:Doc09. <https://doi.org/10.3205/oc000136>. Published 2020 Feb 27.
10. Tang W, Li QQ. Crab lice infestation in unilateral eyelashes and adjacent eyelids: a case report. *World J Clin Cases.* 2021;9(33):10323–10327. <https://doi.org/10.12998/wjcc.v9.i33.10323>.
11. Ryan MF. Phthiriasis palpebrarum infection: a concern for child abuse. *J Emerg Med.* 2014;46(6):e159–e162. <https://doi.org/10.1016/j.jemermed.2013.11.090>.