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PHTHIRIASIS PALPEBRARUM INFECTION: A CONCERN FOR CHILD ABUSE

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Abstract—Background: Pediculosis capitis is a common parasitic infestation, whereas phthiriasis palpebrarum is an uncommon infection due to *Phthirus pubis* (pubic lice) inoculating the eyelashes and surrounding tissues of the eye. Emergency physicians should recognize the causes of this uncommon disease. Cases of phthiriasis palpebrarum should trigger the clinician to consider the potential for child abuse when suspected or when social history dictates the risk for abuse. **Objective:** A case of a pediculosis capitis and phthiriasis palpebrarum coinfection in a 4-year-old girl is presented, which was suspicious for child abuse given the patient's social history. **Diagnosis, treatment, and need for vigilance** when encountering cases of phthiriasis palpebrarum, especially in young children, are discussed herein. **Case Report:** A 4-year-old girl presented with swelling and redness around her eyes. The girl had recurrent head lice infestations, however, on the day of presentation the mother noted lice appeared on the girl's eyelashes and eyelids. Head lice typically do not infect the eyes, and given the different morphology of the lice on the patient's head and eyes, a diagnosis of phthiriasis palpebrarum was made. Because phthiriasis pubis infection of the eyelids may represent sexual abuse, especially in children, child protective services was notified to ensure patient safety. **Conclusions:** Pediatric phthiriasis palpebrarum can represent child abuse, and the origins of this infection need to be carefully discerned. A thorough history can provide information to assess whether further action is needed and, if in doubt, social services should be contacted to ensure child safety. © 2014 Elsevier Inc.

Keywords—pediculosis capitis; phthiriasis palpebrarum; head lice; pubic lice; child abuse

INTRODUCTION

Pediculosis capitis (head lice) is a common parasitic infestation, especially in school-age children, caused by the obligate human parasite *Pediculus humanus capitis* (1). Phthiriasis palpebrarum is an uncommon infection due to *Phthirus pubis* (pubic lice) inoculating the eyelashes and surrounding tissues of the eye (2). Coinfections of phthiriasis palpebrarum and pediculosis capitis are even more rare and, to our knowledge, no reports of a coinfection of both species have been published. We describe a case involving a phthiriasis palpebrarum infection, which was confounded by a concurrent case of pediculosis capitis. In this case, the child's social history ultimately triggered involvement of child protective services due to the suspicion of child abuse. Clinical diagnosis, the patient's family dynamics, and differential diagnoses, which may lead to the wrong diagnosis and thus, failure to recognize the implications of child abuse, are discussed herein.

CASE REPORT

A 4-year-old girl was brought to the Emergency Department (ED) by her mother because of swelling and redness around her eyes. The girl had several recent incidents of head-lice infestation, which were treated successfully by the child's pediatrician. The mother noted that the head lice infections reoccurred whenever the child returned from visits with her father; the child's

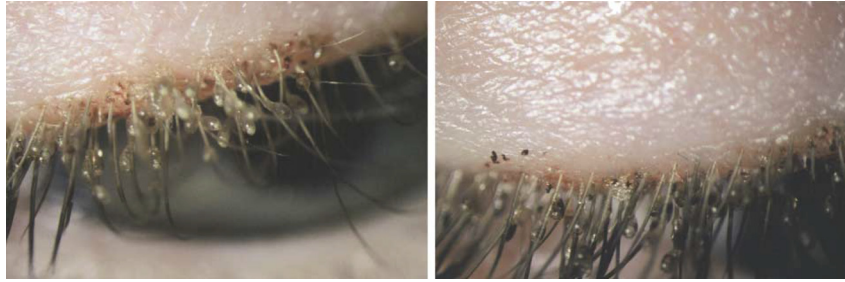


Figure 1. Lice, nits, and fecal matter shown on the eyelashes. Reproduced with permission from Nature Publishing Group (Kumar N, Dong B, Jenkins C. Pubic lice effectively treated with Pilogel. *Eye* 2003;17:538–9) (3).

parents were divorced and had shared custody. However, on the day of presentation, the mother now noted that the lice appeared to affect the girl's eyelashes and eyelids. Upon examination, the girl had numerous adult lice on her hair and scalp, with nits attached near the base of the hair shafts. The adult lice in her hair were grayish-white in color and had thin bodies, and the nits were light gray. Multiple small punctate erythematous lesions around the hairline along her neck, about 1 mm in diameter, were noted and presumed to be bites.

Examination of the patient's eyes under magnification showed bilateral injection of her palpebral and bulbar conjunctiva (Figure 1) (3). Her eyelids were red and swollen. Adult lice were seen attached to the base of the upper and lower eyelashes, which were caked with nits and excreta bilaterally. The lice on the eyelashes were broad and flat, clearly larger on inspection than the head lice, and the nits were brownish-grey in color. Further dermatological examination including the perineum revealed no other signs of infection. The patient's hair was washed with a pediculocidal shampoo and the lice, nits, and fecal particles were mechanically removed from her eyelashes aided by application of a water-based lubricating gel (4). The patient's eyelashes were also trimmed to aid in removal of the lice and debris (5).

Because phthiriasis pubis infection of the eyelids may represent sexual abuse, especially in children, child protective services (CPS) was contacted and conducted an interview in the ED with the mother and patient during which the mother revealed that the patient's father had been previously investigated for sexual abuse; this was confirmed by CPS, substantiating current concerns for on-going sexual abuse (2,3). Accordingly, CPS staff also conducted an examination to test for other sexually transmitted diseases and further signs of abuse. The patient was discharged in the custody of the mother and CPS, with discharge instructions to apply petroleum gel to the eyelids twice daily for 10 days and to repeat treatment of her hair within 7 days (4).

DISCUSSION

Phthiriasis palpebrarum is an uncommon infection and can be mistaken for blepharitis or conjunctivitis (6–8). The presence of two species of lice was a confounder in the diagnosis of phthiriasis palpebrarum because head lice commonly do not infect the eyes (7,8). Pubic lice are considered sedentary and rarely leave close contact with the body, making transmission through clothing or fomites less likely. Transmission is dependent upon close, often intimate, contact, which is why infection with *Phthirus pubis* is considered a sexually transmitted disease. Furthermore, up to 30% of those infested with *P. pubis* have another sexually transmitted disease (9,10). Although our patient had prior head-lice infestations, this was the first time lice were found on the patient's eyes. The specific finding of phthiriasis palpebrarum coupled with the patient's social history (recurrent pediculosis infections and her father's prior investigation for sexual abuse) raised concerns for the possibility of abuse. Based on the clinical presentation, physical examination findings, and social history, CPS was notified to further assess the patient's safety.

P. pubis and *P. capitis* are unique species (Figure 2) and can be readily differentiated morphologically by visual inspection (1,3,6). *P. pubis* adults have discoid bodies up to 3 mm wide and a translucent-brown carapace (7). *P. Pubis* predilection for both eyelashes and pubic hair is hypothesized to stem from the observation that the average space between adjacent hair follicles in both regions is approximately equal to the grasping span of the lice's hind claws (8). The adult *P. capitis* louse is 2–3 mm in length, tan to pale grey in color, and has an ovoid shape. The diagnosis of phthiriasis palpebrarum in our patient was confirmed by inspection of the lice under magnification; visual inspection without magnification may not be reliable to differentiate *P. pubis* and *P. capitis* (5). The diagnosis can be further confirmed by scanning electron microscopy or light microscopy, which may not be readily available for confirmatory diagnosis and are time-consuming analytical processes (8). Accordingly, the initial diagnosis

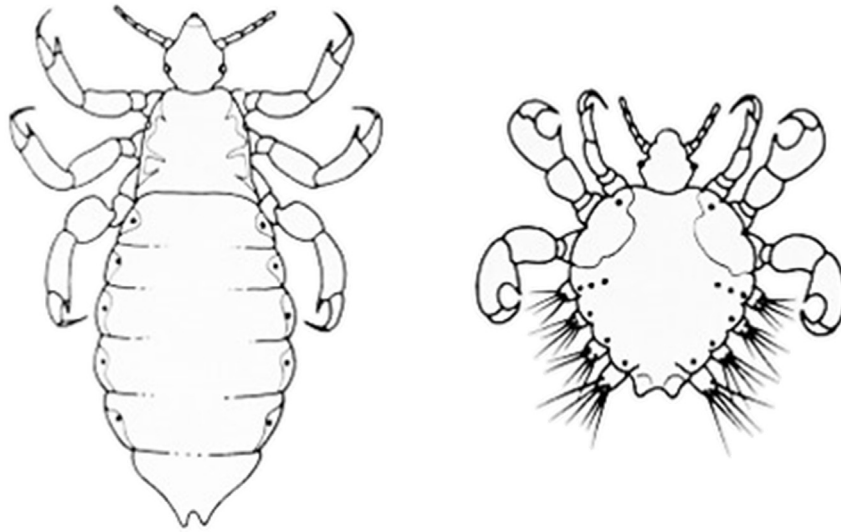


Figure 2. Morphological comparison of *Pediculus capitis* and *Phthirus pubis*, showing ovoid and discoid body shapes of the two species, respectively. Reproduced with permission from the Florida Department of Agriculture and Consumer Services, Division of Plant Industry.

of phthiriasis palpebrarum should be made by visual inspection of the patient's eyes under magnification, and a low clinical suspicion is recommended for initiating treatment.

Clinical presentation of *P. pubis* and *P. capitis* infestation initially manifests as pruritus and localized inflammation in the areas of infestation, which can become severe after several days (6,9). Other ocular signs and symptoms include itching and irritation of skin around the eye (including lid margins and conjunctiva), visible lice and nits, small punctate red lesions (~1 mm) resulting from louse bites, and brown deposits of feces on the lashes, as well as secondary blepharitis, follicular conjunctivitis, preauricular lymphadenopathy, and marginal keratitis (3,8,9). Although *P. capitis* and *P. pubis* are not thought to directly transmit disease (whereas *P. corporis* can transmit typhus), scratching and skin irritation may result in secondary skin and soft tissue infections (1). No cases where *P. pubis* transmitted typhus fever, trench fever, or epidemic relapsing fever have been reported in the literature (8).

The differential diagnosis of phthiriasis palpebrarum includes numerous other common ocular pathologies, including conjunctivitis, blepharitis, and periorbital cellulitis. Note, cases where infection is mistaken for blepharitis or conjunctivitis and consequently misdiagnosed can lead to treatment failures as well as failed opportunities to assess for children at risk for abuse (7–9). Diagnosis of infestation is contingent upon the presence of lice in any stage of life and the presence of attached eggs (6). The eggs, which need warmth to hatch, are usually attached within 1 mm of the skin. The presence of

dead or hatched eggs alone is a poor indicator of infestation (7). If a diagnosis is made, close contacts should also be examined and treated (6,10).

Treatment options for phthiriasis palpebrarum vary, and no single treatment plan has been proven to be optimal. Initial treatment should include trimming or plucking of eyelashes to mechanically remove lice, nits, and debris. Further treatment should include a pediculocidal or occlusive agent (petroleum jelly or water-based gels). Suitable pediculicides for treatment around the eyes include fluorescein 20%, physostigmine 0.25%, mercuric oxide 1% ophthalmic ointment and ammoniated mercury 3% ophthalmic ointment, 1% malathion drops or shampoo, and pilocarpine gel 4% (8). Physostigmine is considered as effective as mercuric salts, however, because it does not kill nits, treatment is recommended for 2 weeks, corresponding to the life cycle of the louse. Cryotherapy and argon laser photocoagulation have also been used, but these modalities require the cooperation of the patient and are not ideal for young children.

CONCLUSION

Not all cases of pediatric phthiriasis palpebrarum represent abuse, and may result from close contact such as shared sleeping arrangements with another carrier; nevertheless, the origins of phthiriasis palpebrarum need to be carefully discerned to assess for possible abuse (8). A thorough history can provide information to assess whether further action is needed and, if in doubt, social services should be contacted to ensure child safety.

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