ORIGINAL ARTICLE

Phthiriasis palpebrarum: Diagnosis and treatment

La phthiriasie palpébrale : diagnostic et traitement

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Summary
Introduction. — Phthiriasis palpebrarum is an ectoparasitosis in which Phthirus pubis infest the eyelashes. It is rare and it can easily be misdiagnosed as blepharitis. The purpose of this study is to describe seven cases of phthiriasis palpebrarum so as to discuss its mode of infestation, diagnosis and treatment.

Patients and methods. — This is a study of all cases of phthiriasis palpebrarum reported in our laboratory. For each patient, an ophthalmic examination and parasitological examination of the eyelashes were performed.

Results. — There were five men and two women. Their ages ranged from 4 to 50 years with an average of 21.57 years. There were four children and three adults. The main symptom was itching of the eyelids. Clinical signs included reddish-brown crusts at the base of the eyelashes in all the cases and visible lice and nits in three cases. Biomicroscopic examination showed lice and nits anchored to the eyelashes in three cases. In the other two cases, the initial diagnosis was felt to be blepharitis. In all cases, the diagnosis of phthiriasis palpebrarum was confirmed by parasitological examination of eyelashes, which revealed the presence of adult and nit forms of Phthirus pubis. The number of adult lice ranged from 1 to 30. In all cases, treatment was based on mechanical removal of both the lice and nits. Outcomes were favorable without recurrence.

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**Introduction**

Phthiriasis palpebrarum is a rare eyelid infestation caused by the ectoparasite, *Phthirus pubis*. It is a hematophagous arthropod, belonging to the order of Anoplura, the family of Pediculidae and the genus *Phthirus* [1–3]. The occurrence of phthiriasis palpebrarum in different parts of the world has been described by different authors [2–8]. However, most of the studies have reported one to two cases. Since the infestation of the eyelashes by pubic lice is rare, it might well be misdiagnosed. Hence, we describe seven cases of phthiriasis palpebrarum to discuss its mode of infestation, diagnosis and treatment.

**Clinical cases**

There were five men and two women. Their ages ranged from 4 to 50 years with a mean age of 21.57 years. There were four children and three adults. Initial diagnosis was considered to be blepharitis in two cases. The main symptom was itching of the eyelids. Palpebral involvement was unilateral in four cases and bilateral in three cases. On examination, there were many brownish scales on the upper eyelashes in all cases, which correspond to louse faeces. Visible lice and nits were noted in three cases (Figs. 1a and b). Slit lamp examination revealed many lice attached to the base of the upper eyelashes with numerous nits (Fig. 2). Some of the adults and nits were removed and examined under the light microscope. The diagnosis of phthiriasis palpebrarum was confirmed by parasitological examination of eyelashes, which has revealed the presence of adults and nits of *P. pubis* (Figs. 3a and b and Figs. 4a and b). The number of adult lice ranged from 1 to 30. *P. pubis* was noted in two adults. In all cases, the treatment of phthiriasis palpebrarum was performed by mechanical removal of both the lice and nits. Sedation was necessary in the children. *P. pubis* was treated with permethrin lotion with a single overnight application and this was repeated after one week. In all cases, there was a complete cure of phthiriasis without any recurrence.

**Discussion**

Three varieties of lice attack humans. They are *Pediculus humanus capitis* (head louse), which is typically found in scalp hair, *Pediculus humanus corporis* (body louse), which infests the seams of clothing, and *P. pubis* (pubic or crab louse), which mainly lives on the hair of pubic and inguinal regions [1,3,9]. Although these regions are the main habitat of *P. pubis*, it can also infest hairs of axilla, chest or rectal regions and rarely, the eyebrows and eyelashes.

In adults, *P. pubis* principally reaches the eyelashes by transmission through hands from pubic hair to eye. It was probably the mode of transmission in our adults because there was associated infestation of pubic hair with the same parasite in two cases. *P. pubis* is a sexually transmitted infection as phthiriasis palpebrarum. It is usually transmitted by sexual contact, but may be transferred sometimes from bedding. Indeed, *P. pubis* moves only very short dis-
Pthiriasis palpebrarum

Figure 1. Nits and adults of Pthirus pubis attached to the upper eyelashes.

Figure 2. Slit lamp photo of multiple nits anchored on the upper eyelashes.

Figure 3. a: an adult of Pthirus pubis adherent to an eyelash; b: an adult of Pthirus pubis.

ance from the point of their first contact and die within 24–48 h if removed from their hosts [10–12]. Occasionally, isolated palpebral involvement has been described and this mainly in children because of the lack of terminal hairs on most of their body regions. For the same reason, phthiriasis palpebrarum was reported principally in children [2–4,7,8,10,13–16]. They are usually infested by the direct passage of the lice from the axillary or chest hair of the

parents or by other infected contact. Eyelash infestation with crab lice may occasionally be an indication of sexual abuse [3,11]. In the present cases under report, the source of infestation would be an infested mother. In front of these modes of transmission, the patients and their family members should be examined for the existence of any other sexually transmitted infections [3,11,13,17].

Primarily, phthiriasis palpebrarum manifests as itching and irritation of eyelid margins, which is due to dermal hypersensitivity [2–4,8,10,12,14,18]. If infestation is not treated, it may be complicated by blepharitis, follicular conjunctivitis and marginal keratitis [4,19,20].

Since infestation of the eyelashes by pubic lice is uncommon, it may exist for a long time before being recognized. Indeed, the adult lice are often difficult to see with the naked eye because of their semi-transparency and deep burrowing in the lid margin [11,18]. However, physicians can observe the parasite’s slow movement by careful and prolonged observation. It was the case of three of our patients. Besides, the oval nits and brownish deposits (faeces of louse), which adhere to the bases of the eyelashes, are often confused with the crusty excretions of seborrhoeic blepharitis [8,14,21]. So, phthiriasis palpebrarum can be misdiagnosed as blepharitis, which was the case of two of our patients. Close examination of the lashes and lid margins with slit lamp is often necessary in order to detect the louse and nits
Diagnosis must be confirmed by parasitological examination of eyelashes to identify *P. pubis* and to confirm the diagnosis of phthiriasis palpebrarum. Under the light microscope, adults of *P. pubis* may be distinguished from *Pediculus* spp. by its short stout bodies (1.5—2 mm) and well-developed claws in the second and third pair of legs, which give it the distinctive crab-like appearance [2,3,10,14]. These thick, clawed legs make them less mobile than the *Pediculus* species, but enable them to infest regions where hairs are thick. During the lifespan of about a month, the female adult lays about thirty eggs named nits [2,3,11,13]. The nits are cemented on the hairs and then are resistant to mechanical and chemical removal. They are oval-shaped, brownish and 0.5 mm in diameter. In their upper pole, there is an operculum, which is conical and covered by perforated nodules allowing the breath of nits [1,11,12].

The treatment of phthiriasis palpebrarum is difficult and varied. Several physical and chemical therapeutic modalities can be applied. The most effective physical method is the manual removal of adults and nits with fine forceps. It requires the patient’s cooperation, and general anaesthesia or sedation may be necessary in children [2,3,12,17,18,20]. Argon laser phototherapy and cryotherapy are other physic methods, which is also limited by cooperation factors. Moreover, it is necessary to take precaution of applying 1% gamma-benzene hexachloride cream a few days after, to deal with any lice emerging from eggs which might have escaped destruction by these methods [22,23]. Several drugs are used in the treatment of phthiriasis palpebrarum, but they can cause ocular toxic effects. One percent mercuric oxide ointment applied four times daily for 14 days has been shown to be safe and effective treatment against lice and nits and may be the treatment of choice [4,6,12—14,24].

The use of phystostigmine eye ointment was reported. It is an anti-cholinesterase inhibitor, which affects the nerve transmission of insects. However, it has many side effects [6]. Application of the organochlorine insecticide, gamma-benzene hexachloride, in lotion form, has been used but with caution for ocular irritation and potential neurotoxic effects [7]. Twenty percent fluorescein solution and petroleum ointment have been reported to be effective [9,11,25]. Pilocarpine 4% gel is another option. The exact mechanism of its action is not yet known. It could be attributed to its direct cholinergic action of depolarising the effectors cell, causing paralysis of the lice, or because of direct pediculocidal action or even the smothering effect of the gel [8,10]. Additionally, there are various other reported treatments for phthiriasis palpebrarum, as malathion shampoo and perme-thrine 5% ointment [5].

Finally, the use of oral ivermectin was reported in two studies with eradication of this disease. Two 200 μg/kg doses, given a week apart, are required to eradicate phthiriasis palpebrarum because this molecule has no ovidical activity [20,26].

Besides, clothing and bed linen must be washed and heat dried after each treatment, to avoid re-infestation [3,10,17]. A control is necessary two weeks later for the detection of lice and nits of *P. pubis*.

**Conclusion**

Phthiriasis palpebrarum is more frequent in children. It can be misdiagnosed as blepharitis. The patients with the symptoms of itching of the eyelids and with clinical findings resembling seborrhoea accumulation on eyelashes must be carefully examined by prolonged observation and slit lamp.

**Disclosure of interest**

The authors declare that they have no conflict of interest concerning this article.

**References**


