

# Yellow mercuric oxide: a treatment of choice for phthiriasis palpebrarum

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## Abstract

Thirty-five patients presenting with phthiriasis palpebrarum were all treated with a regimen of 1% yellow oxide of mercury ointment four times daily for 14 days. At the conclusion of treatment there was complete resolution of the signs and symptoms of the disease. No side effects due to the treatment were reported or detected. We have shown that 1% mercuric oxide ointment is both a safe and effective treatment for phthiriasis palpebrarum. We recommend it as the treatment of choice.

Phthiriasis palpebrarum, an odd dermatophthalmological condition often encountered in children, is an infestation of the eyelashes by *Phthirus pubis* (crab lice) and its ova. The various suggested forms of treatment<sup>1-12</sup> either have prohibitive side effects or present a technically difficult and uncomfortable form of treatment. We therefore reinstated the use of 1% mercuric oxide ointment.<sup>13</sup>

## Subjects and methods

Thirty-five patients (16 males and 19 females) with phthiriasis palpebrarum were seen at our clinic between September 1988 and April 1989, 60% during November-December 1988. The average age was 5.4 years (range 15 months to 19 years).

Most patients (83%) were referred by their family practitioners for further management of blepharitis or conjunctivitis which had not responded to treatment with topical antibiotic drops over periods ranging from one week to three months. Four (11%) other patients were asymptomatic family members of the former group who were discovered on epidemiological examination. Another two (6%) asymptomatic patients were referred by their parents after discovering nits attached to the lashes and eyebrows.

On slit-lamp examination all the patients had typical blepharoconjunctivitis, with pubic lice and ova on their eyelashes. A louse and ova were removed from each patient for diagnostic purposes, and they were treated with 1% yellow mercuric oxide ointment applied to the lid margins four times daily for 14 days. We explained to the patients or their parents that the ointment was to be well rubbed on the lashes and eyelid margins for at least one minute in order to introduce it into the hair follicles. Since the ova hatched to release the lice approximately after one week, we decided on a two-week treatment regimen. Patients were seen weekly for two weeks and again two months after therapy was initiated. At each follow-up visit the patients

were also carefully examined for known side effects of the treatment.<sup>11-15</sup>

A thorough epidemiological investigation was carried out, and the patients were referred to the dermatology clinic to exclude lice infestation of other body areas.

## Results

By light microscopy the parasites from each patient were shown to belong to the genus *Phthirus*. At the one-week follow-up visit there was resolution of the blepharoconjunctivitis. However, some viable ova remained attached to the eyelashes. One week later all patients remained asymptomatic, with hatched ova on their eyelashes. The two-months follow-up revealed asymptomatic patients without ova on their eyelashes. No known side effects of 1% yellow mercuric oxide ointment were either reported by the patients or detected on ocular examination.

Our series included one patient who, after being asymptomatic for two months after completion of therapy, was reinfected from the original (untreated) contact. After two weeks of treatment on the same regimen he was again rendered asymptomatic.

Eleven of the 35 patients traced epidemiologically revealed the source of infestation, and efforts were made to treat them. From the patients referred to the dermatology clinic only one 18-year-old female had *Phthirus pubis* infestation in the pubic area, which was successfully treated with gamma benzene hexachloride shampoo.

## Discussion

Phthiriasis palpebrarum is an uncommon condition in Israel. In view of the sharp increase in the frequency of pediculosis worldwide more cases of ocular involvement may be expected.

Pediculosis and phthiriasis occur in humans when sanitary conditions are inadequate. Typically, *Phthirus pubis* is found in the hair of the pubic and inguinal regions, the *Pediculus capitis* in scalp hair and *Pediculus corporis* on the seams of clothing. One would expect the *Pediculus capitis* to be the offending parasite and not the pubic louse, since the latter's usual site of infestation is remote from the eyelashes. However, the pubic louse is the most common cause of eyelash pediculosis. The head louse, which is frequently seen in children, is usually restricted to the scalp, and involvement of the eye region is extremely rare.<sup>1</sup>

The pubic louse dies quickly when separated from its host, its transmission from person to person usually being by sexual contact. The

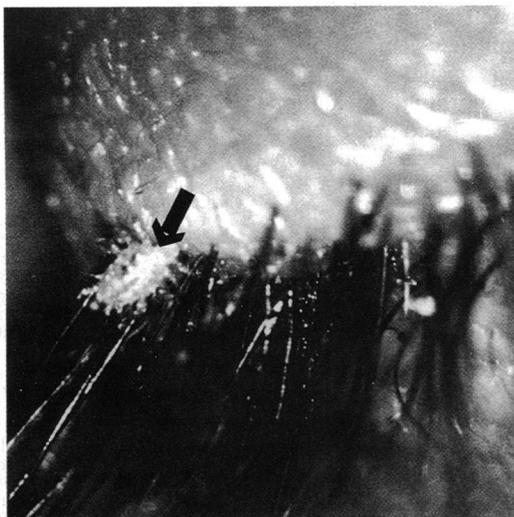
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Accepted for publication  
13 November 1990

Figure 1 *Phthiriasis palpebrarum*. One adult crab louse with the stout claws gripping on to the roots of the eyelashes (arrow).



pubic area is the most frequently affected, but an infected person may transfer the organism from one hairy area to another resulting in infestation of axillary hair, beard, eyebrows, and eyelashes. Phthiriasis palpebrarum is rare in normal adults but less rare in infants who are usually infested by direct passage of the lice from the axillary or chest hair of the parents, nurse, or attendant.<sup>2</sup>

Clinical characteristics of phthiriasis palpebrarum include itching and irritation of the eyelid margins, typical of blepharoconjunctivitis. These features are by no means invariable, for lice are often found on normal palpebral margins, but frequent itching, scratching, and rubbing lead to a true inflammation, which may be intense and persistent.

The crab louse has three sets of legs attached to the anterior part of the abdomen. The middle and hind sets are wider, with a stout claw and opposing tibial thumb on each leg. Four sets of small conical feet are present on the posterior part of the abdomen. Two segmented antennae protrude from the lateral aspect of the cylindrical head. Deeply pigmented digestive material could be seen dispersed throughout the broad oval abdomen extending to the posterior aspect of the louse.

The louse may be seen gripping on to the roots of the lashes or brows with its claws (Fig 1), while the nits and empty nit shells adherent to the base of the cilia may be deposited in great numbers (Fig 2). The lice themselves may be transparent

and difficult to see, but the tell-tale nits on the lashes are readily visible.

*Pediculus corporis* and *Pediculus capitis* can be easily distinguished from *Phthirus pubis* by their larger size (2 to 4 mm), their flattened, elongated, triple-segmented, fused thoraces and their long slender legs. In contrast, *Phthirus pubis* is usually 2 mm or less, has a broad oval abdomen and stout claw-like legs resembling a crab's – hence its name. Crab lice are better suited for grasping the shafts of hairs and remaining more localised.<sup>3,4</sup>

The effective management of phthiriasis palpebrarum requires thorough investigation and treatment of contacts, delousing of the patient, other family members, clothing, and bedding. Reinfestation can be prevented by sterilising clothing, linen, brushes, and combs at a temperature of 50°C for 30 minutes. Contaminated cosmetics should be destroyed. The epidemic spread of *Phthirus pubis* can be prevented by proper hygiene.

The most popular ocular treatment is the removal of the parasites with forceps.<sup>1,2</sup> Ronchese<sup>2</sup> states: 'The infant's head is held as firmly as possible with the help of assistants. In spite of batting eyelids, screams, and tears, the struggle will be a brief one and end to everybody's satisfaction.' In co-operative patients it is possible to remove the adult parasites with forceps under the slit-lamp. However, this procedure is not without discomfort for the doctor and his young patients, and the use of general anaesthesia or sedation may be necessary.<sup>5</sup>

A single application of gamma benzene hexachloride with careful nit removal is usually adequate to eradicate the lice. However, disadvantages include the high potential for ocular irritation and epithelial toxicity.<sup>6,7</sup> In view of reports of possible toxicity to the central nervous system this agent should be used with caution in infants, children, and pregnant women.

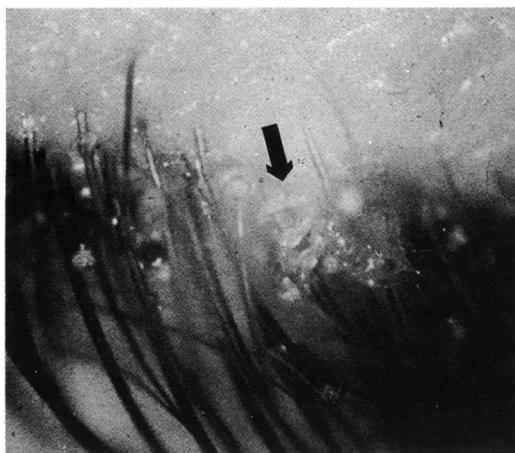
Anticholinesterase agents are reported to be as effective as 1% yellow mercuric oxide. But when applied in the standard concentrations used in the treatment of glaucoma unwanted ocular symptoms may be prohibitive.<sup>8</sup> Another disadvantage is that they do not affect the nits themselves.

Cryotherapy has been used recently in the management of phthiriasis palpebrarum.<sup>9</sup> It is advantageous in that it provides a fast cure and alleviates the need for repeated visits to the doctor. However, this treatment may be very uncomfortable and thus potentially dangerous for the young uncooperative patient. It is not generally accepted as a primary mode of treatment.

Argon laser phototherapy has the advantage of being a quick and effective method of treatment that can be done in one sitting.<sup>10</sup> Its disadvantages include occasional but tolerable stinging and slicing of eyelash stems carrying the nits. The eyelashes regain their normal length within a few days. This method cannot be used to treat young children owing to poor patient co-operation.

Known side effects of 1% yellow oxide of mercury ointment include damage to the eyelid, conjunctiva, and Descemet's membrane, and

Figure 2 Numerous *Phthirus pubis* eggs (nits) adherent to eyelashes of the upper eyelid. Note a transparent pubic louse (arrow) attached to the lashes.



lens discolouration,<sup>15</sup> as well as irritation and conjunctivitis.<sup>14</sup> The patient may also complain of photophobia, blurred visual sensation, mucous discharge, itching, burning, tearing, or gritty feeling. None of the described side effects, especially those seen with long-term application of mercuric oxide ointment, were detected.<sup>11-15</sup>

These results lead us to recommend 1% yellow mercuric oxide ointment as a cheap, simple, safe, and effective form of treatment for phthiriasis palpebrarum, especially for children.

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