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Diagnostic utility of dermoscopy in cutaneous reactions to *Thaumetopoea pityocampa*

Editor

Larvae of *Thaumetopoea pityocampa* (the pine processionary moth or PPM) are armed with microscopic hair-like material called setae for protection against predators (Fig. 1). When in contact with the skin or mucous membranes may cause rash, ocular lesions and more rarely anaphylaxis.^{1,2}

Reactions to *Thaumetopoea* larvae does not give any specific clinical signs and clinical diagnosis may be difficult. The diagnosis could be based on an exposure in the previous 24 h in an area with pine trees and the presence of skin manifestations: urticaria (with or without angioedema) or pruritic papular eruption. PPM-related disease is usually seasonal (January–April). Furthermore, other differential diagnoses should be excluded.¹

We conducted a research study aimed to evaluate the usefulness of dermoscopy in the diagnosis of PPM cutaneous reactions following the experimental exposure to PPM setae. Four human volunteers were subjected to dermoscopy studies after application of setae of PPM in an area of 1 × 1 cm at the volar side of the forearm. Later, we gently rubbed onto the skin with a soft plastic bulb. They were checked by dermoscopy, after 30 min, 1 day (D1), D7, D14, D21 and D28. Dermoscopy was



Figure 1 Detail of a *Thaumetopoea pityocampa* larvae. It has white large hairs and other (setae) brown colour, microscopic, much more numerous and located on the back. Note the multiple setae released by the caterpillar after disturbing it with a stick.

performed using a manual dermoscope DermLite DL3N (×10 magnification) and a videodermoscope FotoFinder Medicam 800HD (×20 to ×70).

All subjects showed a local itchy papular reaction in the area of exposure within 1 and 36 h that persisted between 1 and 4 weeks. Dermoscopy showed local inflammatory reactions in all subjects. They went from mild reaction with dilated capillaries and oedematous areas to marked increase in dermal vascular network, haemorrhagic extravasation of erythrocytes areas and abrasions from scratching.

Using manual dermoscopy, we did not find setae in any volunteer. With the VD (up to ×30 magnification) we detected the setae at 30 min in all cases; at D1, D7 and D14 in 3 subjects and at D21 in 1 of them. At D28, we did not appreciate them any longer. The best images were obtained with the maximum increase (×70) (Fig. 2).

The term entodermoscopy describe the use of dermoscopy as an aid in the *in vivo* diagnosis of skin infections and infestations.³ Dermoscopic patterns have been described for scabies, pediculosis, ticks, cutaneous larva migrans, tungiasis, tinea nigra, trombiculosis, cutaneous reaction to spider spines and to wasp stings, viral warts and molluscum contagiosum.^{4–7} It has been suggested that use of a dermoscope can help in the *in vivo* diagnosis of cutaneous reactions to PPM. We observed that all kind of dermoscopy showed unspecific local inflammatory reaction in all subjects, but using the manual dermoscopy the PPM setae were never observed.

According our data, ×10 magnification is not enough to detect the microscopic setae. Besides, their similar orange-brown colour to our skin and hair makes it more difficult for observation. However, when using VD we see the setae in all cases from 30 min up to ×30 magnification and through 2–3 weeks after the exposure. Our results agree with those of Fagrell *et al.*⁸ where they observed setae of *Thaumetopoea pini-*

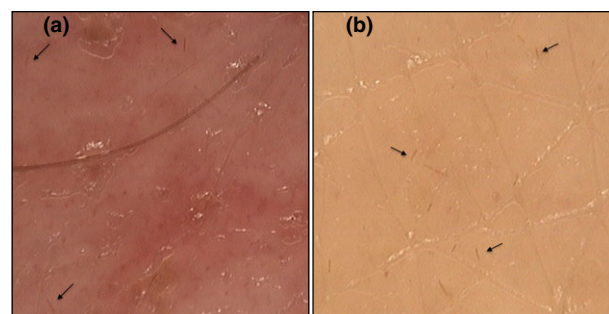


Figure 2 Videodermoscopy (×70) of the area exposed to setae (subject 2): (a) Day 7. Severe local inflammatory reaction and setae attached in the outer skin layer. (b) Day 14. The setae through the skin obliquely; the distal end with a harpoon like form enables the setae to lodge into the skin.

vora in the skin using a pen microscope ($\times 100$) after experimental exposure.

In conclusion, dermoscopy evaluation (up to $\times 30$ magnification) can be useful in the diagnosis of cutaneous reactions to processionary moths (*Thaumetopoea* spp.) or from other urticating Lepidoptera verifying that PPM setae are present in the affected areas during 2–3 weeks after the exposure.

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Syphilis screening, treatment and follow-up: strengths and weaknesses of the international guidelines

Editor

We read the article by Janier¹ on syphilis guidelines with great interest. In favouring a particular therapeutic strategy for socially important infectious diseases, public Institutions decide on the ground of social needs, mainly that of stopping the contagiousness by using non-expensive drugs. The guidelines of the Centers

for Disease Control and Prevention (CDC) and the International Union against Sexually Transmitted Infections (IUSTI) follow such a strategy, but whether they are the best possible recommendations for the syphilis screening, treatment and follow-up at the bedside is at least questionable.

As regards the screening, CDC recommends a non-treponemal test (NTT), such as the rapid plasma reagin (RPR) or the venereal disease research laboratory (VDRL) test, whereas IUSTI suggests a treponemal test (TT), namely the Treponemal enzyme or chemiluminescence immunoassay (EIA/CIA) or the *Treponema pallidum* passive particle agglutination assay (TPPA). Both guidelines suggest testing positive sera with a second TT to confirm the diagnosis and, in case of positivity, a quantitative NTT. This strategy may be argued: NTT may give false-negative results, especially in the very early and late stages of syphilis, and EIA/CIA has low specificity. For primary screening, we suggest to employ simultaneously both a NTT and a *T. pallidum* Haemagglutination assay which helps early/late stage infections to be identified.

In fact, in a recent CDC study, 56.7% of 4834 positive EIA/CIA tests had a non-reactive RPR test and, among these discordant sera, 31.6% proved false positive when tested by TPPA and fluorescent treponemal antibody absorption. If, in the same CDC study, only RPR had been used as screening test, as many as 38.8% of the RPR negative results would have proven false negative.²

As regards the treatment, our confidence in Benzathine penicillin G (BPG) is wavering because of the serological failures after treatment and the late complications in immunocompetent and HIV-patients treated with conventional regimens.^{3–6} Two and four million IU intramuscularly BPG are certainly able to cancel the early syphilis (ES) manifestations and infectiousness, but cannot prevent treponemes to spread into the central nervous system (CNS) nor are they able to cross-efficiently the blood-brain barrier.⁷ Even the administered BPG amount does not matter: neurological and cardiovascular alterations have been demonstrated, respectively, in 35.5% and 19% of 62 ES patients over-treated with BPG (60 million IU totally) and evaluated after 7 years.⁸

We wonder whether, in the past, we searched for late complications and neglected signs of early or atypical CNS involvement. A retrospective analysis at the Boeck time, demonstrated that 7% of untreated syphilis patients develop symptomatic neurosyphilis⁹ a figure decidedly lower than that we found after protracted therapy with BPG. Incidentally, this may suggest that, far from preventing late complications, BPG may even favour them, possibly making room for autoimmune reactions, as it occurs in another treponemal infection, Lyme disease.

To support this point of view, even in the absence of proper epidemiological studies, neurosyphilis still keeps an important place in the literature, as it is demonstrated by the 144 papers detectable on PubMed just in 2014, mostly describ-