

CASE AND RESEARCH LETTERS

Comet Sign in Dermatitis Due to *Pyemotes* Species*

Signo de la cometa en la dermatitis por *Pyemotes*

To the Editor:

The presence of linear or serpiginous tracks is a characteristic cutaneous sign of certain parasitic conditions. Although autochthonous cases of cutaneous larva migrans have been described in Spain, most cases are diagnosed in travelers from tropical regions.¹ However, in patients who have not traveled to tropical areas this finding entails a broader differential diagnosis, which should include comet sign. We describe the presence of this clinical sign in 2 adult patients with dermatitis caused by *Pyemotes* species.

A 25-year-old woman with no relevant dermatological history consulted in May due to the presence of pruritic lesions on the legs that had appeared 72 hours earlier. She had no extracutaneous signs and had not applied any topical preparations. Physical examination revealed several polygonal macules, from which painless erythematous tracks originated (Fig. 1). The patient reported having spent several hours in a rural accommodation in Segovia that was rarely visited during the rest of the year. Most of the furniture was wooden and the patient had noticed small holes in the wood accompanied by sawdust, signs of woodworm infestation. Dermoscopy revealed a microvesicle at the center of each polygonal macule (Fig. 2). Skin biopsy showed a



Figure 1 Multiple lesions exhibiting the comet sign on the leg of patient 1.

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Figure 2 Dermoscopic image of the lesions from patient 1.



Figure 3 Lesions exhibiting the comet sign on the abdomen of patient 2.

dermal infiltrate composed of eosinophils and lymphocytes. No epidermal changes were evident. Betamethasone cream was indicated as a symptomatic treatment, and resulted in lesion resolution after 72 hours (Fig. 3).

A 58-year-old woman was seen in June for multiple erythematous edematous macules with a central microvesicle. Serpiginous tracks similar to but larger than those described in case 1 emerged from the macules. The clinical picture had appeared 72 hours earlier, after the patient had spent a week in a rural accommodation in northern Italy. Initially, she had attended the emergency department of an Italian health center, where she had been prescribed doxycycline. Owing to the progression of the lesions, she had attended our hospital upon her return to Spain in order to obtain a second opinion. When asked about the characteristics of the place where she had stayed, she described a forest cabin

built of and entirely furnished with wood. When informed about the suspected diagnosis of *Pyemotes* dermatitis, she requested an entomological study of the cabin. The results revealed the presence of woodworm in wooden furniture, which was parasitized by mites of the genus *Pyemotes*. The patient's condition resolved fully after application of methylprednisolone aceponate emulsion for 14 days.

Both cases involve the characteristic findings of so-called *Pyemotes* dermatitis. This condition should be suspected in individuals who present with pruritic lesions predominantly in exposed areas and who have had contact with wooden furniture in rarely frequented accommodations that are usually closed for long periods. In these types of buildings it is common to find larvae of beetle species that burrow into wood (woodworm). Often, these larvae are parasitized by mites of the genus *Pyemotes*, which cause the associated dermatological presentation. Occupational outbreaks have been documented among field and harvest workers, since *Pyemotes* species can parasitize other insects that infect wheat, barley, peas, and other crops.^{2,3} Skin lesions develop after contact with the mite (approximately 24 h), without signs of epidermal penetration, resulting in a consequent inflammatory reaction. Because completion of the life cycle of *Pyemotes* species requires warm temperatures (25 °C), most cases published in the literature occurred during the months of May to October.⁴ This epidemiological detail can help orient the diagnosis.

Clinically, *Pyemotes* dermatitis can manifest with erythematous, edematous papules with a central dot or vesicle, similar to those caused by other arthropod bites, although the comet sign is a key characteristic.⁵ Described by Del Giudice et al in 2007,⁶ this sign is considered a unique feature of *Pyemotes* dermatitis. The initial lesion consists of an erythematous macule, from which a linear or serpiginous track emerges after 12 to 24 hours. In contrast to bacterial lymphangitis, the track is painless and does not follow a defined lymphatic path to the corresponding drainage node. The differential diagnosis also includes cutaneous

larva migrans syndrome, in which the cutaneous tracks cause alterations in the skin surface, a consequence of the movement of the larvae through the epidermis; and larva currens (caused by *Strongyloides stercoralis*), in which the tracks progress rapidly at a speed of approximately 10 cm per hour. Treatment is symptomatic: this condition self-resolves once contact with the mite ceases. Topical steroids and emollients can help control itching, which is the main symptom reported by patients.

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