

Trident-shaped Dermatitis in a Child

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Mites can cause significant human skin lesions, although establishing a link with a specific pathogen can be problematic (1). Sometimes a specific dermatological aspect can suggest a particular pathogen. We report here a case of paediatric dermatitis with an unusual aspect caused by an ectoparasite.

CASE REPORT

A 3-year-old child with a previous medical history of acute community-acquired pneumonia, atopic dermatitis, and asthma was admitted to our paediatric emergency unit in June for inflammatory erythematous dermatitis of her right foot (Fig. 1). The condition was discovered in the afternoon, was extremely itchy, and local inflammation led to transient functional weakness. The lesion was characterized by a central red spot on the heel with 3 centrifugal serpiginous tracks. There was no recent history of stings or bites. She had no other symptoms, fever, satellite adenopathy or other

similar lesions. There was no family history of similar dermatitis. She had no previous contact with animals and had not travelled recently or stayed anywhere she was not in the habit of staying. She lived with her family in a house with old wooden floors (Fig. 2). A dermatology consultation confirmed the diagnosis of *Pyemotes ventricosus* dermatitis due to so-called “comet sign”. She was discharged with a combined treatment of acetaminophen and an antihistamine (desloratadine). The dermatitis resolved within the subsequent 12 h.

DISCUSSION

Pyemotes ventricosus belongs to the phylum Arthropoda, order Acari, sub-order Prostigmata, genus *Pyemotes*. Over 30 different species of *Pyemotes* have been identi-



Fig. 1. Erythema associated with 3 inflammatory tracks in a 3-year-old girl.



Fig. 2. Photograph showing indirect proof (holes) of the presence of the wood-boring beetle (*Anobium punctatum*) in the old wooden floor of the child's bedroom.

fied (1). The *P. ventricosus* group is commonly known as “straw itch mites” or “grain mites” (2). *P. ventricosus* is an ectoparasite that lives on different hosts, such as the larvae of *Anobium punctatum* (furniture beetle), a type of wood-boring beetle. This mite is only just visible to the naked eye (length 0.16 mm (male) to 0.22 mm (female)). Human infestation occurs when infested materials (wood, wooden furniture, grain, feed, hay bales) are held or handled (2, 3). Such infestation occurs in seasonal outbreaks and is more frequent during the summer, with a peak between May and September (4). Outbreaks usually end within 1 week (2). Although well-known since the mid-19th century, particularly in workers exposed to agricultural products, foresters, antique dealers, school or house occupants, very few published cases have involved children (5–10). After a usually painless bite, the patients present with highly itchy lesions consisting of a pinhead-sized central vesicle/urticarial lesion (the site of the mite’s bite) surrounded by a rapidly expanding erythematous macule (8). Cutaneous manifestations can be limited to a single lesion or manifest through multiple aspects (7). When a linear or serpiginous erythematous track called a “comet sign” is present (30% of cases) (2), the diagnosis is oriented toward *Pyemotes ventricosus* dermatitis and a clinical differentiation with other arthropod bites or stings (2, 3, 5, 9). Usually there is 1 inflammatory track per lesion. The current case is unusual because there were 3 separate tracks, comparable to a “trident” rather than a comet feature. The origin of this linear feature has been associated with a specific sign of self-limiting lymphangitis (5, 11), while the hypothesis of a parasite migration was excluded by the histological normality of the epidermis along the erythematous track (7). The upper limbs (71%), back (67%), chest and abdomen (56%) are the sites most involved (1). A history of atopy was observed in 22% of the patients (1). The lesions evolve within 24 h and typically resolve in 1–3 weeks. Other symptoms have been reported, such as fever, nausea, vomiting, arthralgia, and headache (1, 12). Most patients are treated with a combination of topical corticosteroids and oral antihistamines (7).

The suspected furniture or materials infested by the *Pyemotes* host insects can be removed from the environment and/or the expertise of a medical entomology professional can be solicited to confirm the infestation and provide the most adapted control measures (1, 13, 14).

In conclusion, *pyemotes*-related dermatitis has been rarely reported in children. The current case has an unusual dermatological aspect (“trident-shaped tracks”) and location (plantar). The comet sign is not pathogno-

monic and not very frequent. Its presence helps to make a distinction in the diagnostic challenge of similar skin reactions after arthropod bites or stings. If absent, the diagnosis can be based on a set of arguments: the seasonality (summer months), the customary appearance (central lesion with lymphangitis), the complaints (pruritus) and furniture or wooden ceiling beams as source of parasitized *A. punctatum* (Fig. 2).

The authors have no conflicts of interest to declare.

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