

SHORT COMMUNICATION

Multidisciplinary Approach to *Pyemotes ventricosus* Papular Urticaria Dermatitis

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Mites are an important cause of human dermatosis. Although clinical diagnosis is often simple for the clinician, the identification of the causative mite is often troublesome. The identification and eradication of the agent causing the eruption is crucial for the resolution of the cutaneous disease (1). We describe here a case of *Pyemotes* dermatitis in which infested wood was the source of the problem.

CASE REPORT

A 35-year-old non-atopic man presented an intensely pruritic eruption he had had for 2 days.

Skin examination showed numerous scattered, small, erythematous, urticarial papules distributed over the trunk and forearms. Each papule was capped by a tiny vesicle or had a central haemorrhagic punctum (Fig. 1). The palms, soles and mucous membranes were spared. Past medical history was of no significance. The patient's wife had few similar lesions on her forearms.

A clinical diagnosis of multiple insect bites was made; however, the patient did not remember having been bitten and denied any contact with pets. On careful questioning he reported handled and having stored beech wood.

Examination of the wood revealed infestation by white larvae, sized 1–1.3 cm. Some specimens of larvae, together with sawdust, were delivered to the Animal Health sector of the Public Health Department and then the material (wood particles eroded as well as larvae of woodworms and their droppings) was taken to the



Fig. 1. Papulourticarial rash caused by *Pyemotes ventricosus*.

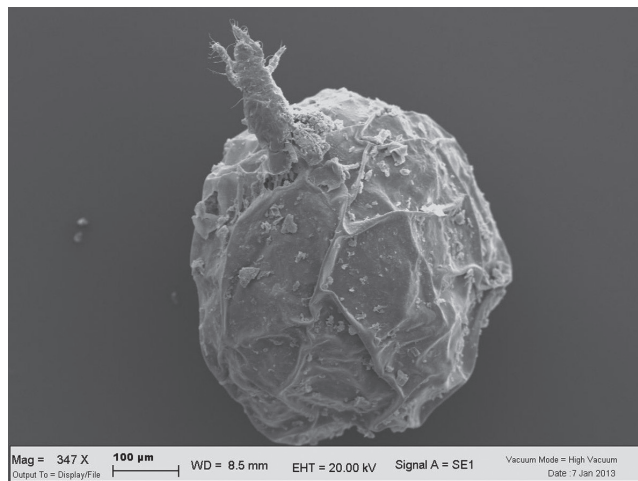


Fig. 2. Scanning electron microscopy analysis of a physiogastric female of *Pyemotes ventricosus*.

University Laboratory of Urban Ecology and processed for scanning electron microscopy (SEM) analysis (Fig. 2). The larvae were recognized as belonging to the Cerambycidae family and they were infested by mites of the Pyemotidae family. The mites, present in large numbers, were physiogastric females (Fig. 3) identified as *Pyemotes ventricosus* (Newport, 1850) on morphological and behavioural basis (2).

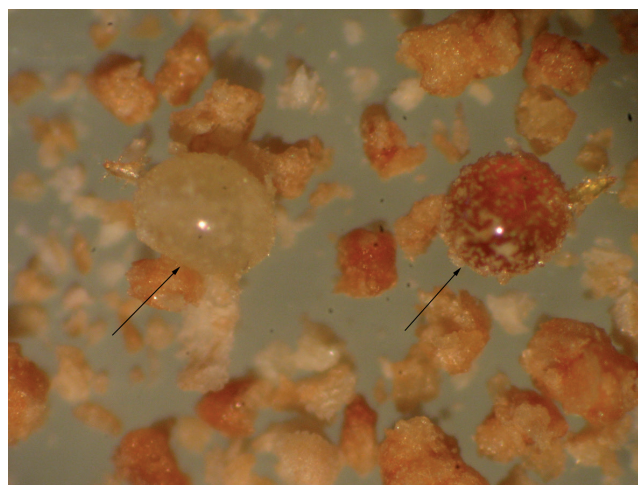


Fig. 3. Two physiogastric females (female with enlarge abdomen) of *Pyemotes ventricosus* on a background of sawdust particles (optical microscopy). Arrows indicate the rear part of the ball-shaped histerosoma (posterior abdomen).

The patient was treated with oral antihistamines and systemic corticosteroids at tapering daily dosage.

Removal of the wood led to resolution of the dermatitis.

DISCUSSION

P. ventricosus is a white-yellow predaceous mite that attacks and kills larvae or nymphs of a number of insects, including moths, beetles, wasps and bees, etc., that are usually found in grain, straw, plant-based food, firewood and old furniture. However, if normal food sources are reduced, *P. ventricosus* may attack horses, cattle, other mammals and humans. Human infestation occurs only accidentally and temporarily, when an individual comes in contact with infested material.

The skin eruption caused by *P. ventricosus* is known as “grain itch”, “barley itch”, “straw itch”, “hay itch”, “prairie itch”, “mattress itch” and “cotton seed itch” (3). It may be an occupational condition in farmers, bakers, dock-workers, packers and indoor workers. Both isolated cases and small outbreaks have been reported (1–5).

The first sign of this dermatitis is itching, which usually occurs within a few hours of contact with infested material, followed by an eruption of urticarial papules surmounted by pin-point vesicles, 10–20 h later. The vesicles are often destroyed by scratching (3). *P. ventricosus* bites are painless and therefore not correlated with dermatitis by the patient (6). A central hemorrhagic punctum is frequently seen; ecchymoses and brownish pigmentation may persist after resolution. The distribution of the eruption depends on the circumstances of the contact, and to some extent on the ambient temperature, which may condition the nature of the protective clothing worn at the time. Bacterial super-infections and systemic symptoms (fever, vomiting, and joint pain) are seldom described.

The mites are not visible to the naked eye, and reside only briefly on the human body, and thus are not found

by physicians during clinical examination; the diagnosis is often based only on clinical features and patient’s history (1–7). The patient is often reluctant to accept the diagnosis of insect bites, so the definitive diagnosis can be made only through mite identification. This may persuade the reluctant patient to carry out disinfection and environmental prophylactic measures.

Although *Pyemotes* spp. have been known since 1901 to cause dermatitis, only few documented cases have been reported in the literature. Even though *P. ventricosus* has been mainly reported to be associated with *Anobium punctatum* (1, 3), the common furniture beetle, exceptionally *P. ventricosus* can attack *Cerambycidae* and *Buprestidae* (8), both damaging beetles, as in the present report.

The authors declare no conflicts of interest.

REFERENCES

1. Del Giudice P, Blanc-Amrane V, Bahadoran P, Caumes E, Marty P, Lazar M, et al. *Pyemotes ventricosus* dermatitis, southeastern France. *Emerg Infect Dis* 2008; 14: 1759–1761.
2. Diaz JH. Mite-transmitted dermatoses and Infectious diseases in returning travellers. *J Trav Med* 2009; 21–31.
3. Fine RM, Scott HG. Straw itch mite dermatitis caused by *Pyemotes ventricosus*: comparative aspects. *South Med J* 1965; 58: 416–420.
4. Czarnecki N, Kraus H. Occupational dermatitis caused by *Pyemotes ventricosus*. *Z Hautkr* 1976; 51: 527–532.
5. Kelly R, Drummond FH. Skin eruption in a group of waterside workers due to a mite, *Pyemotes ventricosus*. *Med J Aust* 1961; 48: 797–798.
6. Nath R, Saikia L, Choudhury M, Mahanta J. Dermatitis due to straw itch mite in Assam. *Indian J Dermatol* 2007; 52: 199–200.
7. Micks DW. An outbreak of dermatitis due to the grain itch mite, *Pyemotes ventricosus* Newport. *Tex Rep Biol Med* 1962; 20: 221–226.
8. Webster, FM. A predaceous and supposedly beneficial mite, *Pediculus*. Becomes noxious to man. *Ann Ent Soc America* 1910; 3: 15–39.