

INSIDE
THIS
ISSUE

Morgellons Disease

Mites

Morgellons Disease

Introduction

Morgellons disease (MD), emerging in recent years, is a controversial dermatological disorder in which patients frequently claim that small insects are biting or living under their skin. Although most of the MD cases were reported in the United States of America, an increasing number of similar cases has been recognized worldwide.

Symptoms

Despite the lack of generally accepted MD symptoms by the medical community, patients always complain of stinging, burning, biting sensations and formation of unusual fibers found both subcutaneously and emerging from spontaneously appearing skin lesions.

Delusional parasitosis

Many medical practitioners regard MD as a form of "delusional parasitosis". In delusional parasitosis, patients hold a delusional belief that they are infested by parasites and experience a sensation similar to insects crawling on or under the skin. Centers for Disease Control and Prevention (CDC) of U.S.A. started a MD research in 2006 and found no infectious or environmental links to the disease. CDC suggested that the disease could be a form of delusional parasitosis.

Possible infectious agent(s)

In contrast, latest studies demonstrated that MD patient's skin lesions with unusual fibers are not self-inflicted or psychogenic. The fibers were proved to be originating from human epithelial cells. Studies discovered that MD patients are predominantly infected with *Borrelia burgdorferi*, the spirochetal agent of Lyme disease (a tick-borne disease). MD patients also demonstrated a higher than expected percentage of positive laboratory findings for other tick-borne diseases, suggesting the possible involvement of tick-borne co-infecting pathogens.

Conclusion

Presently, there is no definitive understanding of how MD is caused or transmitted. There is also no conclusive evidence showing that MD is a vector-borne disease. Patients who suspect suffering from MD or with similar symptoms should seek advice and treatment from medical professionals instead of pest control professionals. Moreover, keeping the living environment in good hygienic condition is essential in the prevention of pest infestation in premises.



Mites

Mites are placed in the class Arachnida and are related to ticks, spiders and scorpions. Most of them are very small and some are barely visible to the naked eye.

Mites are not insects. They lack wings and antennae. They differ from other arachnids by the total loss of body segmentation, resulting in the complete fusion of their bodies. Their mouthparts are grouped together at the front of the body in a sort of a false head known as the capitulum.

Mites form the most diverse group of all the Arachnida and are found throughout the world in decomposing organic matter and soil, on plants, in fresh water, in deep marine habitats, on and in animals. Mites have a large range of feeding habits, including internal and external parasites of vertebrates, invertebrates and plants, omnivores, fungivores, and detritivores.

Although mites do not produce venom like spiders and scorpions, some species of them are still of great medical and veterinary significance. This is because they can be important vectors of disease, and they themselves can cause allergic reactions. Mites can cause conditions such as scrub typhus, dermatitis, asthma and scabies in humans, as well as mange and respiratory problems in some animals. They are also of commercial and agricultural importance because they are parasites of crop and ornamental plants, parasites of honey bees, and infesters of foodstuffs. However, mites are extremely useful as bio-control agents, especially on other mites that are plant parasites.

Mites which we may encounter in our daily lives and have medical importance

Trombiculid mites

Some members in the genus *Leptotrombidium*, including *Leptotrombidium akamushi* and *L. deliense*, are the principle vectors of the scrub typhus disease. They mainly live on vertebrates including rodents and insectivores at its larval stage as ectoparasites. The adult and nymphal stages are free living and feeding on soil arthropods. The larvae of mites, about 0.2 mm long, crawl on the surface of soil or ground vegetation until they find a suitable host. The larvae attach to mammals (humans are accidental hosts) before developing into adults. In addition, the larvae attach firmly to the surface of the host's body with the mouth parts and suck up liquefied tissue. The biting behaviour of mites is conducive to disease transmission.



Leptotrombidium deliense is a rodent-borne disease vector for the transmission of scrub typhus

Prevention of Scrub Typhus

- Avoid sitting or lying in scrubby areas;
- Avoid hanging clothes on scrub or trees;
- Disinfest your pets regularly which have visited scrubby areas;
- Apply insect repellent on clothes and the exposed parts of the body before entering a scrubby area; and
- Wear light-colored long-sleeved clothes and long trousers for going into a scrubby area to enable easy detection of mites attached to the clothes, if any.

Dust Mites

As the name suggests, dust mites are usually found in dust. They present in large numbers in house dust under humid conditions. They are found in almost every home, where they live in dust which accumulates in carpets, bedding fabrics and furniture. As well as providing a habitat for the mites, house dust also contains their food source such as shed human skin scales. The feces of these small creatures contain a particular protein, which is the principal cause of allergic reactions in some people when inhaled into the lungs. The fecal pellets may also aggravate asthma patients.

Prevention of house dust mites

- Frequent vacuums the premises preferably with a water filter or High Efficiency Particulate Air filter (HEPA);
- Wash bedding, pillows and duvets in hot water at 55-60°C regularly and preferably encase pillows and mattresses with allergen-impermeable covers; and
- Remove, reduce or modify surfaces that provide favourable microhabitats with regard to food buildup and relative humidity (e.g. eliminate soft toys, loose- and long-piled carpeting and dense upholstery with many folds and tucks) for elimination of favourable breeding grounds for mites.

T. W. LEUNG, Pest Control Officer