

ISSN: 1936-6019

www.midsouthentomologist.org.msstate.edu

Palpable purpura from chigger bites (Acarina: Trombiculidae)

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Received: 11-I-2017 Accepted: 1-II-2017

Introduction

Chiggers or “red bugs” are mites in the arthropod class Arachnida, family Trombiculidae, which are common biting pests of people and animals throughout much of the world. Only the larvae are known to bite people and animals; nymphs and adults do not bite. In some parts of the Tropics, chiggers may transmit the agent of scrub typhus (Kim and Walker 2011), but in the U.S. they are primarily nuisance pests. In nature, the mites cluster in low vegetation in search of passing vertebrate hosts; once on a host, they climb up to areas where the skin is soft or the clothing is restricted, and attach to feed for 24-48 hours. In humans, attachment often occurs on the feet, ankles, legs, groin, or belt-line. They seem especially fond of the popliteal fossae as described in Alexander (1984). If left alone, feeding generally lasts 3 to 4 days, although chiggers attached to the skin may easily be removed by even the most casual scratching (Wharton and Fuller 1952). Dermal reactions are due to host immune responses to salivary proteins and may include pruritic macules, papules, and even bullae, but rarely, if ever, ecchymotic palpable purpura (Frazier 1969, Alexander 1984). Here we report a case of chigger bites in an adult woman that presented as ecchymotic palpable purpura.

Case

The patient was a 42-year-old Caucasian female who happens to be an entomologist. She noticed chigger bites on the backside of her legs after walking through grass and weeds in sandals in a rural area of central Mississippi during June 2016. By the third day after the outdoor exposure, she displayed itchy bright purple palpable lesions, primarily in the popliteal fossae (Fig. 1). She did not see a health-care provider, but photographs of the lesions were examined after-the-fact by a dermatologist (see acknowledgements). The patient self-treated the bites with Dermoplast® Pain-Relieving Antibacterial Spray (Prestige Brands, Tarrytown, NY) per label directions, primarily to relieve itching. By day 7, itching subsided and the lesions faded, leaving only faint papules. Over the next 2 weeks the lesions completely resolved.

Discussion

This particular manifestation of purpura was interesting because the patient reported having numerous chigger bites over her lifetime (photographs of a previous infestation of this same patient are published in a medical text (Goddard 2013), but she had never previously developed purple lesions. The reason purpura developed this time is unknown and the dermatologist offered no cause specific to this case. Rarely, other insect bites have been reported in literature to cause purpuric lesions such as *Aedes albopictus* (Skuse) (Culicidae) mosquitoes, but not chiggers (Rebora et al. 1993). Treatment of chigger bites usually involves over-the-counter medications such as hydrocortisone or calamine lotion (Alexander 1984). What effect, if any, of the patient’s use of Dermoplast® in this case in relation to the purpura is not known. On a broader note, if a patient presents with palpable purpura with signs or symptoms of a life-threatening emergency (such as meningococemia), they should be treated immediately and aggressively (Hartsell and Neff 2010). For non-life-threatening cases, a directed patient history may indicate potential etiologies such as recent infections, medications or drug ingestion, irradiation or chemical exposure, local trauma, or (as in this case), arthropod bites.



Figure 1. Palpable purpura resulting from chigger bites. Lesions 3 days after exposure (left), and lesions 7 days after exposure (right).

Acknowledgements

We are indebted to Dr. Louis Wise (Dermatologist, Jackson, MS) for clinical comments concerning this case.

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