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LETTER TO THE EDITOR

Millipede accident: a differential diagnosis of cyanotic lesion on the toes

Acidente por Milipede: um diagnóstico diferencial de lesão cianótica no pododáctilo

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Dear Editor,

Millipedes, popularly known as "gongolos," are arthropods belonging to the class Diplopoda. As a defense mechanism, they secrete toxins that cause irritation and discoloration on contact with the skin.[1] The resulting lesion often has a violaceous, necrotic appearance, which may resemble tissue ischemia, making clinical differentiation challenging.[2] We report a typical case of a lesion caused by contact with millipedes and highlight an unusual differential diagnosis that may mimic vascular compromise.

A 56-year-old patient, with no previous medical history, native of Rio de Janeiro, Brazil, sought medical attention for a violaceous lesion on the right hallux, with 2 days of evolution, which appeared after wearing her usual footwear. She reported the presence of an arthropod inside the shoe. Physical examination revealed an erythematous-violaceous macule on the distal phalanx of the hallux, without pain or other associated symptoms (Fig. 1). Extremities were warm, peripheral pulses and capillary refill time were normal. Histopathological examination revealed no evidence of vascular compromise or melanotic hyperpigmentation (Fig. 2). There was complete resolution of the lesion in 60 days after expectant management.



Figure 1. A: blackened erythematous-violaceous macule on the right hallux. **B:** complete resolution after 60 days. **C:** dermoscopy of the right hallux showing violaceous macule. **D:** millipede (*acknowledgement: Markus Bluthner free image Unsplash*).

Millipedes have segmented bodies, each with two pairs of legs and inhabit dark, humid environments. There are over 12,000 known species, *Rhinocricus padbergi* being the most common in Brazil.[1,3] When threatened, millipedes secrete defensive fluids through specialized glands distributed along their bodies.[3] Their

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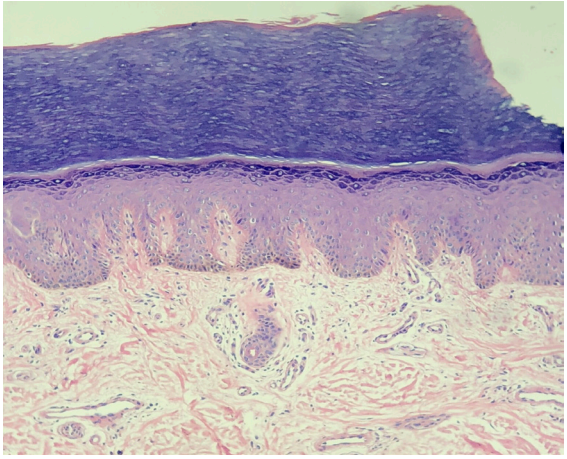


Figure 2. Histopathology - Melanotic pigmentation in the basal cell layer consistent with the patient's prototype (HE 100×).

composition varies among species and include irritating chemicals such as benzoquinone, hydrogen cyanide, quinazolinones, and phenols.[4,5] Benzoquinones are involved in the tanning of arthropod's cuticles and cause discoloration when in contact with the skin by triggering pigmenting chemical reactions.[6-8]

Accidental human contact often occurs on the toes, when wearing closed shoes. The lesions present as pigmented macules, varying from erythematous-violaceous to brown or blackish.[8] Despite their necrotic appearance, they represent only a local inflammatory reaction and skin staining and tend to be asymptomatic or cause mild transient sensations of burning. Prolonged contact with the arthropod can cause vesicles, blisters, or ulcerations.[1] Differential diagnosis for acral lesions should include peripheral acute arterial occlusion, caused by cholesterol or atherothrombotic embolization. It presents as purpura, petechiae, nodules and necrosis, typically associated with sudden pain, pallor, cold extremity, paresthesia, and paralysis.[1-3]

Diagnosis is clinical and supported by the patient's report of contact with the arthropod. Complete resolution occurs over several weeks to months without intervention. Some reports suggest the use of ether or alcohol on recent lesions due to their solvent properties[1]. In symptomatic cases, analgesics and topical corticosteroids are recommended.[1,6] Recognizing a typical case of exogenous pigmentation caused by millipedes is important to avoid misdiagnosis invasive procedures and unnecessary treatments.

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Conflicts of interest

None.

Ethical considerations

Protection of humans and animals. The authors declare that no experiments involving humans or animals were conducted for this research.

Confidentiality, informed consent, and ethical approval. The authors have followed their institution's confidentiality protocols, obtained informed consent from patients, and received approval from the Ethics Committee. The SAGER guidelines were followed according to the nature of the study.

Declaration on the use of artificial intelligence. The authors declare that no generative artificial intelligence was used in the writing of this manuscript.

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