What's Eating You? Millipede Burns

Frank A. Lacy, MD; Dirk M. Elston, MD

PRACTICE **POINTS**

- The most common site of involvement of millipede burns is the foot, followed by other commonly exposed areas such as the arms, face, and eyes. Covered parts of the body are much less commonly affected.
- Millipede burns may resemble child abuse in pediatric patients; therefore, physicians should be aware of this diagnosis when unusual parts of the body are involved.

Millipedes often are regarded as harmless but are capable of causing adverse reactions through the secretion of toxic chemicals. Millipede burns cause localized pigmentary changes that may be associated with pain or burning in some patients. Clinical suspicion and physical examination are paramount to the diagnosis of millipede burns.

Cutis. 2019;103:195-196.

Clinical Presentation

Millipedes secrete a noxious toxin implicated in millipede burns. The toxic substance is benzoquinone, a strong irritant secreted from the repugnatorial glands contained in each segment of the arthropod (Figure 1). This compound serves as a natural insect repellant, acting as the millipede's defense mechanism from potential predators.[1] On human skin, benzoquinone causes localized pigmentary changes most commonly presenting on the feet and toes. Local lesions may be associated with pain or burning, but there are no known reports of adverse systemic effects.[2] Affected patients experience cutaneous pigmentary changes, which may be dark red, blue, or black, and spontaneously resolve over time.[2] The degree of pigment change may be associated with duration of skin contact with the toxin. The affected areas may resemble burns, dermatitis, or skin necrosis. More distal lesions may present similarly to blue toe syndrome or acute arterial occlusion but can be differentiated by the presence of intact peripheral pulses and lack of temperature discrepancy between the feet.[3,4] Histologic evaluation of the lesions generally reveals nonspecific full-thickness epidermal necrosis, making clinical suspicion and physical examination paramount to the diagnosis of millipede burns.[5]

Diagnostic Difficulties

Accurate diagnosis of millipede burns is more difficult when the burn involves an unusual site. The most common site of involvement is the foot (Figure 2), followed by other commonly exposed areas such as the arms, face, and eyes.[2,3,6,7] Covered parts of the body are much less commonly affected, requiring the arthropod to gain access via infiltration of clothing, often when hanging on a clothesline. In these cases, burns may be mistaken for child abuse, especially if certain areas of the body are involved,

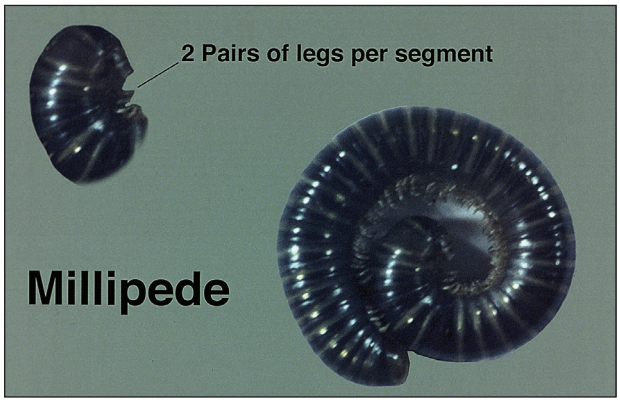

FIGURE 1. Millipedes (Diplopoda) are identified by their elongated cylindrical bodies with 2 pairs of legs per body segment (4 legs total).

Dr. Lacy is from the West Virginia University School of Medicine, Morgantown. Dr. Elston is from the Department of Dermatology and Dermatologic Surgery, Medical University of South Carolina, Charleston.

The authors report no conflict of interest.
Figure 1 is in the public domain.

Correspondence: Frank A. Lacy, MD, PO Box 9001-A, One Medical Center Dr, Morgantown, WV 26506 (FLacy@mix.wvu.edu).

FIGURE 2. Millipede burns can mimic ischemia if located on distal extremities. Reprinted with permission from Verma and Bourke.[7]

such as the groin and genitals.[2] The well-defined arcuate lesions of the burns may resemble injuries from a wire or belt to the unsuspecting observer.

Conclusion

Although millipedes often are regarded as harmless, they are capable of causing adverse reactions through the secretion of toxic chemicals. Millipede burns cause localized pigmentary changes that may be associated with pain or burning in some patients. Because these burns may resemble child abuse in pediatric patients, physicians should be aware of this diagnosis when unusual parts of the body are involved.

REFERENCES

1. Kuwahara Y, Omura H, Tanabe T. 2-Nitroethenylbenzenes as natural products in millipede defense secretions. *Naturwissenschaften*. 2002;89:308-310.
2. De Capitani EM, Vieira RJ, Bucaretchi F, et al. Human accidents involving *Rhinocricus* spp., a common millipede genus observed in urban areas of Brazil. *Clin Toxicol (Phila)*. 2011;49:187-190.
3. Heeren Neto AS, Bernardes Filho F, Martins G. Skin lesions simulating blue toe syndrome caused by prolonged contact with a millipede. *Rev Soc Bras Med Trop*. 2014;47:257-258.
4. Lima CA, Cardoso JL, Magela A, et al. Exogenous pigmentation in toes feigning ischemia of the extremities: a diagnostic challenge brought by arthropods of the Diplopoda class ("millipedes"). *An Bras Dermatol*. 2010;85:391-392.
5. Dar NR, Raza N, Rehman SB. Millipede burn at an unusual site mimicking child abuse in an 8-year-old girl. *Clin Pediatr (Phila)*. 2008;47:490-492.
6. Hendrickson RG. Millipede exposure. *Clin Toxicol (Phila)*. 2005;43:211-212.
7. Verma AK, Bourke B. Millipede burn masquerading as trash foot in a paediatric patient [published online October 29, 2013]. *ANZ J Surg*. 2014;84:388-390.