

Images in Clinical Tropical Medicine

Fatal Disseminated Strongyloidiasis with Periumbilical Purpura

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A 42-year-old male patient living with HIV in northern Brazil presented to the emergency room with a 1-week history of dyspnea and generalized itching. He had abandoned antiretroviral therapy for 2 years.

Physical examination revealed respiratory distress and hypotension. Laboratory findings included leukopenia without eosinophilia, a CD4 T-helper cell count of 7 cells/ μ L, and an HIV viral load of 39,331,629 copies. Chest computed tomography showed diffuse ground-glass opacities. Respiratory tract polymerase chain reaction for severe acute respiratory syndrome coronavirus 2 and *Mycobacterium tuberculosis* were negative.

During the initial 24 hours, despite fluid resuscitation, the patient deteriorated and required vasoactive drugs and ventilatory support in the intensive care unit, where corticosteroids and sulfamethoxazole/trimethoprim were started for presumed *Pneumocystis* pneumonitis. During intensive care unit admission, a detailed examination of the skin revealed purplish macules and papules on the periumbilical area, abdomen, and flanks (Figure 1A), with linear and serpiginous configurations resembling thumbprints (Figure 1B).^{1,2}

Treatment with oral ivermectin for strongyloidiasis and meropenem as empirical therapy for enteric Gram-negative pathogens³ was started; however, despite intensive care and hemodynamic support, the patient worsened progressively to multiple-organ dysfunction and died 6 days after admission.

A punch skin biopsy was obtained before the outcome and histological examination showed filariform larvae of *Strongyloides stercoralis* in the dermis, between collagen bundles,

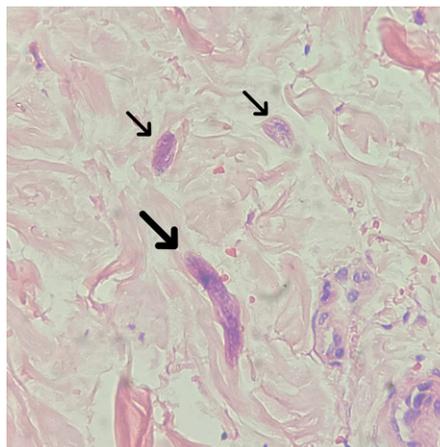


FIGURE 2. Skin biopsy with filariform of *Strongyloides stercoralis* larva in dermis, full length (thick arrow) and transverse section (thin arrows), surrounded by collagen bundles (hematoxylin–eosin stain, $\times 40$ magnification). This figure appears in color at www.ajtmh.org.

with no surrounding inflammatory reaction (Figure 2). The finding of *S. stercoralis* parasites outside the digestive and respiratory tract is the hallmark of disseminated strongyloidiasis.^{3–5}

Disseminated strongyloidiasis is far more associated with human T-cell leukemia virus type 1 co-infection than with HIV infection alone, but unfortunately it could not be ruled out because of the lack of diagnostic testing availability. This



FIGURE 1. (A) Purpuric rash involving the periumbilical area, abdomen, and flank in an HIV patient with disseminated strongyloidiasis. (B) Close-up of the rash showing purple macules and papules in the periumbilical area resembling thumbprints (arrow). This figure appears in color at www.ajtmh.org.

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clinical picture emphasizes that even in endemic areas for strongyloidiasis, clinical suspicion remains low, delaying treatment and increasing mortality.

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REFERENCES

1. Weiser JA, Scully BE, Bulman WA, Husain S, Grossman ME, 2011. Periumbilical parasitic thumbprint purpura: *Strongyloides* hyperinfection syndrome acquired from a cadaveric renal transplant. *Transpl Infect Dis* 13: 58–62.
2. Randi BA, Felício MF, Lázari CS, Duarte MI, Halpern I, Ho YL, 2016. A woman with AIDS and a neglected disease presenting with coma, periumbilical purpuric rash, and alveolar hemorrhage. *Clin Infect Dis* 63: 1262–1263.
3. Belga S, MacDonald C, Houston S, 2019. Disseminated strongyloidiasis. *JAMA Dermatol* 155: 957.
4. Salluh JI, Bozza FA, Pinto TS, Toscano L, Weller PF, Soares M, 2005. Cutaneous periumbilical purpura in disseminated strongyloidiasis in cancer patients: a pathognomonic feature of potentially lethal disease? *Braz J Infect Dis* 9: 419–424.
5. Bank DE, Grossman ME, Kohn SR, Rabinowitz AD, 1990. The thumbprint sign: rapid diagnosis of disseminated strongyloidiasis. *J Am Acad Dermatol* 23: 324–326.