Bloody Diarrhea Associated with Hookworm Infection in Traveler Returning to France from Myanmar

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To the Editor: Human hookworm infections are commonly caused by 2 anthropotonic species, Necator americanus and Ancylostoma duodenale. However, A. ceylanicum, a zoonotic hookworm of canids and felids, is emerging as the second most common human hookworm in Southeast Asia (1–4). Two haplotypes of A. ceylanicum hookworm have been identified, 1 specific to humans and 1 specific to humans, dogs, and cats (4,5). We report a case of patent enteric A. ceylanicum hookworm infection in a man from France who had visited Myanmar.

In December 2014, a 33-year-old man with no medical history sought care in France after 3 weeks of fever, vomiting, dyspnea, bloody diarrhea, and weight loss (7 kg). He had returned from a 3-week trip to Myanmar 1 month earlier. Two days after his arrival in Myanmar, he had pruritic erythematosus macules on the buttocks after sitting in a public park in Rangoon while wearing short pants; this sign was followed by a dry cough.

Laboratory data showed leukocytosis (17.43 x 10⁹ cells/L) with hypereosinophilia (55%) and a hemocrit of 56.1%. Direct examination of hemorrhagic stool showed numerous Charcot-Leyden crystals (CLCs) and 150–200 eggs/g feces of unembryonated hookworm ova (mean size 57.6 x 38.4 µm) (Figure, panel A). Rhabditiform and filariform larvae were isolated by stool culture (Figure, panel B). On the basis of clinical history and data suggestive of eosinophilic enteritis, which is uncommon in patients infected with parasites adapted to humans, a zoonotic hookworm species was suspected.

For species identification, DNA was extracted from larvae by using the DNeasy Tissue Kit (QIAGEN, Hilden, Germany) at the Faculty of Veterinary and Agricultural Sciences, University of Melbourne (Parkville, Victoria, Australia) and subjected to PCR specific for the ribosomal internal transcribed spacer region of hookworms (1). Testing was conducted at the University of Melbourne because this institution has the technical expertise for identifying hookworm. In addition, haplotype characterization was performed by using PCR specific for the mitochondrial cytochrome oxidase-1 gene (4). Bidirectional DNA sequences of PCR products (Macrogen Inc., Seoul, South Korea) were analyzed by using Finch TV 1.4.0 (Geospiza Inc., Seattle, WA, USA). The ribosomal internal transcribed spacer region had 100% sequence identity with an A. ceylanicum sequence in GenBank (DQ381541). Neighbor-joining analyses with MEGA 4.1 (http://www.megasoftware.net) clustered the isolate within the A. ceylanicum haplotype specific for animals and humans (4).

By the third day of albendazole therapy (400 mg/d), clinical improvement was observed and stool specimens were negative for hookworm ova. However, eosinophilia...
Ancestrum. However, recent climate changes, coupled with developments in tropical climates; the possibility of spread in temperate regions; and the development of filariiform larva requires high temperatures and a moist environment. However, recent climate changes, coupled with poor sanitary conditions, could promote emergence of tropical species, and recently, rare cases of autochthonous hookworm-related cutaneous larva migrans have been reported in Europe (10).

This report highlights the risk for zoonotic ancylostomiasis in travelers visiting countries to which A. ceylanicum hookworm is endemic among animals. It also emphasizes the usefulness of copromolecular techniques for species-specific diagnosis.

References


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