BRIEF REPORT

Case Description of Ascariasis

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Ascaris lumbricoides are among the medically important worms belonging to the phylum Nematoda (roundworms) that are parasites of the human gastrointestinal tract. Despite current sanitation and hygiene standards in the United States, infection due to intestinal roundworms is not uncommon in children and adults. A high index of suspicion is warranted as patients may present anywhere along a spectrum of illness from asymptomatic to acutely ill. The following is a case presentation and discussion of *Ascaris lumbricoides*, the common roundworm or intestinal longworm. *Arch Fam Med. 2000;9:1193-1194*

REPORT OF A CASE

A 37-year-old man presents to your office after passing something he thought was a rubberband in his stool. He was worried when he saw the object moving in the toilet. He is otherwise healthy and is taking no medications. He has had no recent changes in bowel habits or stool appearance. He denies fever, abdominal pain, cough, or rash. He does not smoke, drink alcohol, or use recreational drugs. He is physically active and recently completed a weeklong backcountry hiking expedition in the Southeastern United States. He has had no other recent travel. He presents with a stool sample for your review (**Figure 1**).

Given the clinical history and presentation, the following are probable diagnoses: (1) *Ascaris* (roundworm) infection (**Figure 2**), (2) *Toxocara* (visceral larva migrans) infection, (3) *Trichuris* (whipworm) infection, or (4) rubberband ingestion.

COMMENT

Ascariasis is a globally distributed nematodal infection. It is estimated that 1.3 billion people are infected worldwide.[1] Four million people are infected in the United States, with a preponderance in the rural Southeast. Transmission is fecal-oral. The life cycle of *Ascaris lumbricoides* is straightforward. Adult worms inhabit the human small intestine. Eggs are laid within the intestine and passed through the feces. The eggs are relatively hearty, and can survive for years within the soil. After several months of maturation, larvae develop within the eggs. At this stage, the eggs are infectious. Humans are infected when they ingest particles from contaminated soil. Infection rates are highest in areas with poor public health and low hygienic standards, or areas that use human waste as fertilizer ("night soil").[2]

Following ingestion, the eggs enter the host jejunum, where the larvae hatch and penetrate the jejunal mucosa. The larvae enter the portal circulation and travel to the lungs. There, the larvae mature and molt twice before breaking through the alveolar capillary membrane and entering the alveoli. The larvae ascend the bronchial tree and are then swallowed by the host. The larvae return to the small intestine, where they develop into adult worms. The adult worms can survive for 1 to 2 years.[3]

Clinical manifestations of *Ascaris* infection correlate with the organism's life cycle. During the phase of pulmonary mi-

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Figure 1. *Patient specimen.*

gration, patients present with cough, dyspnea, chest discomfort, or hemoptysis. If infected by mature adult worms, patients can present with symptoms of visceral obstruction. Adult worms can obstruct the small bowel, biliary tree, pancreatic ducts, or appendix. Presentation in this setting varies from an acute abdomen to biliary colic to symptoms consistent with a bowel obstruction.

Diagnosis of ascariasis is based on identification of the ova or a mature worm in stool samples. Eosinophilia is often present (especially during the phase of pulmonary migration). Abdominal films may show incidental evidence of worms in gas-filled loops of bowel. If the patient undergoes ultrasonography or endoscopic retrograde cholangiopancreatography, worms can be directly visualized.

Treatment is intended to prevent secondary complications. Mebendazole, 100 mg orally twice daily for 3 days or 500 mg orally once, is the treatment of choice.[4]

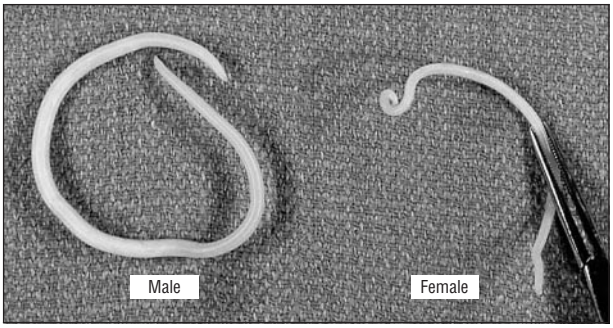

Figure 2. *Male and female* Ascaris lumbricoides.

Albendazole, 400 mg orally once, and pyrantel pamoate, 11 mg/kg once (maximum dose of 1 g), are acceptable alternatives. Pediatric doses are equivalent to adult doses; however, little is known regarding use of these drugs in children younger than 2 years.[4] All of these medications are category C (not approved for use during pregnancy). Iron therapy may be necessary to correct associated anemia.

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