



A 25-Year-Old Woman With Long-Lasting Abdominal Pain and Spleen Abscess

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A 25-year-old white woman presented at our outpatient clinic with a 36-month history of abdominal discomfort associated with relapsing fever (with spikes at 39°C) and weight loss (20 kg in 3 years). Before symptom onset, her medical history was unremarkable. She has 2 children in good health. During the past 3 years, she underwent extensive diagnostic evaluations, with an initial abdominal computed tomographic (CT) scan showing mesenteric panniculitis with necrotic lymphadenitis (Figure 1A) and fleeting small abscesses of the liver and spleen (Figure 2A and 2B). Results of QuantiFERON-TB Gold assay and serology for *Bartonella henselae*, cytomegalovirus, human immunodeficiency virus, and *Toxoplasma gondii* were negative. Blood cultures were also negative, as were results of stool examinations for ova and parasites and fecal occult blood tests.

After 12 months of investigations, abdominal laparoscopy with biopsy of mesenteric lymph nodes was performed, showing minimal fluid in the pouch of Douglas and chronic

granulomatous inflammation. Alcohol-acid-fast bacilli were not seen with Ziehl-Neelsen stain. A fluorine 18 fluorodeoxyglucose positron emission tomographic/CT scan showed nodularity in the abdominal-pelvic area in the context of the mesenteric fat and between the intestinal loops (standardized uptake value, 6.8) (Figure 1B).

At our first evaluation, the patient was asthenic and febrile and reported diffuse abdominal pain. Her children were asymptomatic. Abdominal ultrasonography showed pathological thickening of the last ileal loop and satellite lymphadenitis with necrotizing aspects. The spleen and liver were normal. Ileoscopy was subsequently performed, and histology revealed eosinophilic infiltration of the terminal ileum and ascending colon. After a few months the patient had recurrence of abdominal pain and fever, and ultrasonography showed a small abscess in the spleen, about 25 × 17 mm² (Figure 2C). A spleen biopsy was performed.

What is your diagnosis?

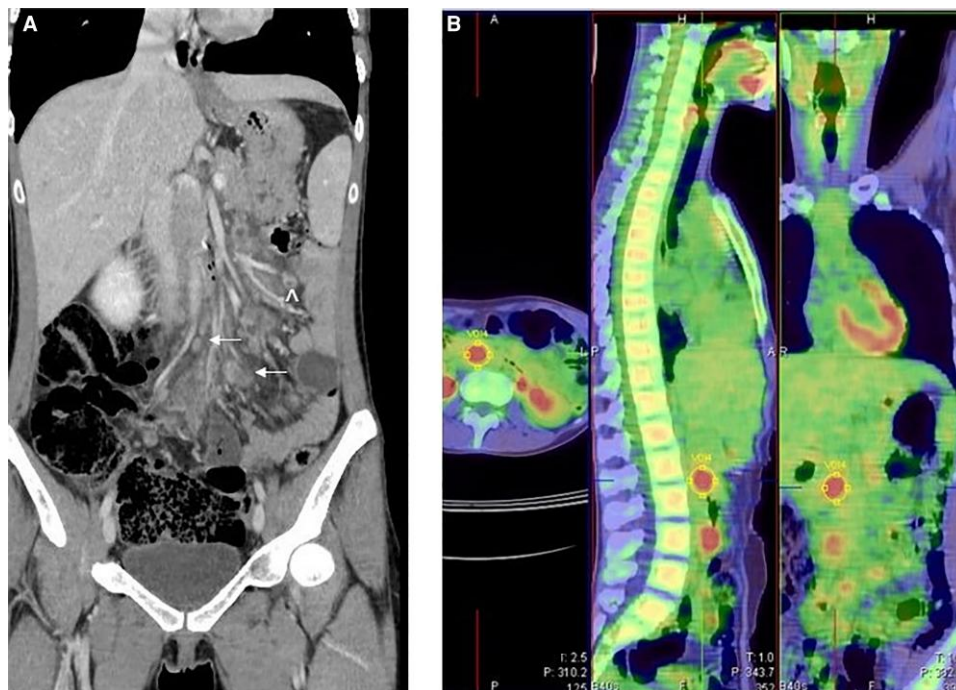


Figure 1. A, Coronal computed tomographic (CT) scan showing mesenteric panniculitis with enlarged lymph nodes (arrow) and necrotic lymphadenitis (arrowhead). B, CT-positron emission tomographic scan showing nodularity in the abdominal-pelvic area.

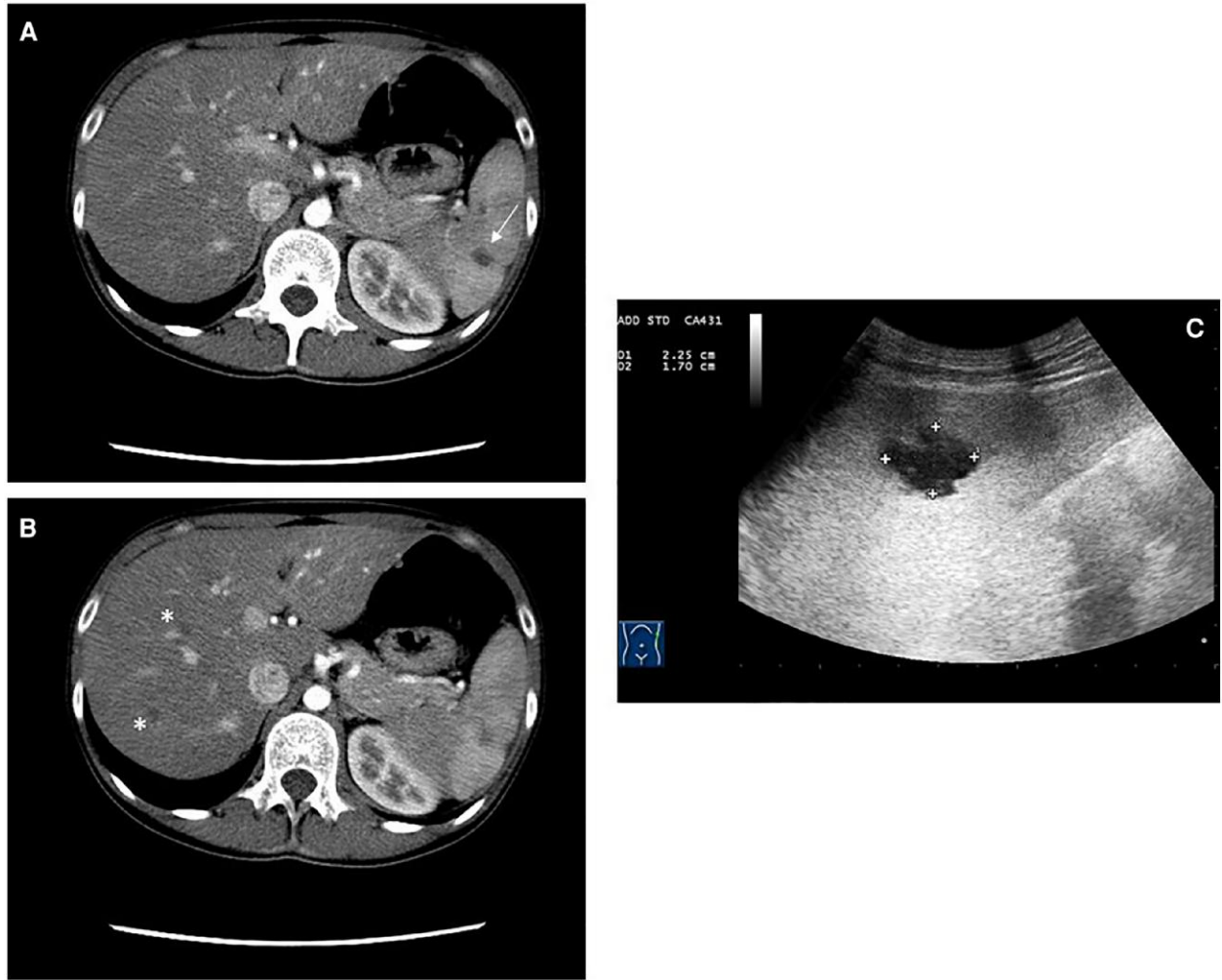


Figure 2. A, Axial computed tomographic (CT) scan showing abscess of the spleen (*arrow*). B, Axial CT scan showing abscesses of the liver (*asterisks*). C, Ultrasonography of the spleen, performed with convex probe, showing irregular hypoechoic nonvascular area compatible with abscess.

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Diagnosis: *Enterobius vermicularis* aberrant infection with spleen abscesses.

Histology demonstrated an egg of the nematode *Enterobius vermicularis* in the spleen tissue (Figure 3A). The biopsy core showed a fibrotic abscess wall in which an ovoid structure was found, characterized by a thin translucent shell with an amorphous eosinophilic content. Repeated ova and parasite stool examinations corroborated *E. vermicularis* infestation (Figure 3B).

E. vermicularis is among the most common causes of helminthic infection in humans. Humans are the only known natural host [1]. The female of *E. vermicularis* is about 8–13 mm long and characterized by a pointed tail, leading to the common name of “pinworm” [2]. Infection usually occurs in young schoolchildren living in overcrowded conditions, and transmission between family members is common [1]. In fact, *E. vermicularis* infection is caused by ingestion of the nematode’s eggs, mainly through the fecal-oral route, with eggs directly inoculated from the fingers into the mouth and/or through sharing of contaminated tools [3].

The adult *E. vermicularis* worm primarily colonizes and lives in the human ileum and cecum. During the night, the adult female moves to the human anal and perianal area, causing pruritus and discomfort and ultimately depositing thousands of eggs. Eventually, pinworm eggs hatch in the anal area, causing pruritus, scratching, and autoinfection through the patients’ contaminated fingers, perpetuating the worm’s life cycle [2].

E. vermicularis infection is normally benign, and most patients are asymptomatic. However, severe invasive infections, such as appendicitis, peritonitis, infections of the female genital tract (vaginitis, endometritis, salpingitis, or even infections involving the human embryo), and infections of the biliary tract and the liver mimicking cancer may occur, owing to extraintestinal migration of the adult worm and egg deposition [4–6].

The most common diagnostic test for *E. vermicularis* infection is the “scotch tape test,” whereby worm eggs can be identified, through microscopy examination, after applying adhesive tape on the unwashed perianal area in the early morning [2]. However, histopathological findings of eosinophilic colitis and/or infiltrates of eosinophilic tissues, with detection of eggs, may be used in more challenging infections [4].

Here we describe a case of aberrant infection of the spleen by *E. vermicularis* adult worms, diagnosed through histopathological detection of an egg in the spleen tissue. Our patient received

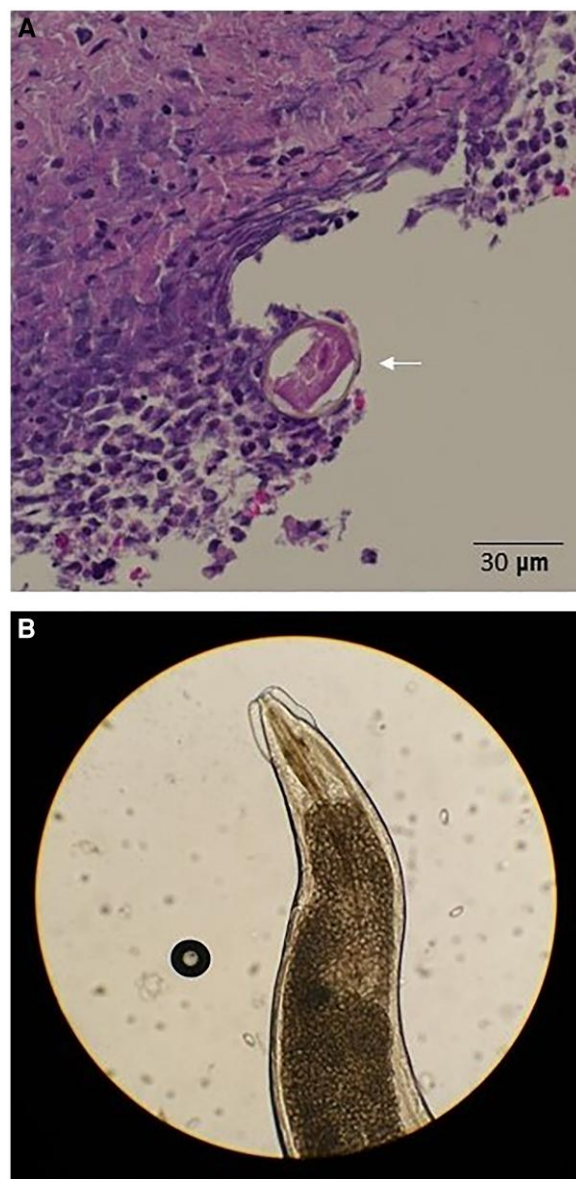


Figure 3. A, Granuloma of the spleen with a necrotic core and an ovoid structure characterized by a thin translucent shell with an amorphous eosinophilic content, compatible with a parasitic egg (arrow) (hematoxylin-eosin; magnification $\times 20$). B, Stool examination showing a female of *Enterobius vermicularis* with a pointed tail.

albendazole, with recovery of her symptoms. Spleen biopsy is rarely performed, and this infective localization could be underestimated.

Note

Potential conflicts of interest. All authors: No reported conflicts. All authors have submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. Conflicts that the editors consider relevant to the content of the manuscript have been disclosed.

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