A Young Man from Peru with Fever and Abdominal Pain
(See pages 842–3 for Photo Quiz)

Diagnosis: Fascioliasis.

Before the patient underwent cholecystectomy and endoscopic sphincterotomy, CT of the abdomen revealed calcifications within the gallbladder wall, multiple calcifications within a mildly enlarged common bile duct, and a large, irregular, crescent-shaped calcified density in the proximal portion of the duodenum (figure 1). After the patient underwent cholecystectomy and endoscopic sphincterotomy, his symptoms resolved, and his liver enzyme levels returned to reference ranges. Histopathologic findings included acute and chronic cholecystitis with a focal granuloma that contained eosinophils and a calcified ovum of *Fasciola* species (figure 2). The worm that had exited the common bile duct was identified as *Fasciola hepatica* (figure 3). Stool samples tested negative for ova and parasites. The patient was given triclabendazole through a compassionate-use protocol, and he tolerated the treatment well.

Fascioliasis is a zoonosis caused by the trematodes *F. hepatica* and *Fasciola giganta*. Sheep, cattle, goats, camels, deer, horses, and rabbits are definitive hosts. Approximately 2.4 million people worldwide are infected, and >180 million are at risk for infection [1]. Most cases occur in sheep-rearing areas of Central and South America, Europe, Africa, the Middle East, China, and Southeast Asia. Rare, sporadic cases are reported in North America [2].

Humans are infected either by ingesting metacercariae that are attached to freshwater plants, such as watercress, water lettuce, alfalfa, and parsley, or by drinking fresh water that is contaminated with viable metacercariae [3, 4]. The patient we describe later admitted to having eaten raw plants from mountain streams in Peru, and he likely became infected at that time.

There are 2 clinical stages of infection. The acute (or hepatic) stage is characterized by fever, abdominal pain, headache, pruritus, urticaria, weight loss, and eosinophilia [3]. Transaminase levels are in the reference range or are only minimally elevated, and bilirubin levels are typically in the reference range [3]. The chronic phase occurs when adult flukes migrate to the biliary tract. Symptoms either are absent or may include fatigue, weight loss, nausea, vomiting, abdominal pain, and diarrhea. Complications may include cholangitis, cholelithiasis, sclerosing cholangitis, or biliary cirrhosis [3, 4].

CT is the imaging modality of choice. Multiple nodular and tunnel-like branching hypodensities in the liver are characteristic of the acute phase of fascioliasis and represent the migratory tracts of larvae [3–9]. Biliary tract dilation, with or without
Figure 3. **Fasciola hepatica** liver fluke (length, 19 mm) that exited the common bile duct after endoscopic retrograde cholangiopancreatography.

filling defects, and hepatic or gallbladder calcifications may be seen during chronic infection [7–10]. Adult flukes may also appear as hyperdensities within the biliary tract [6].

Histologic findings include calcified eosinophilic granulomas with or without ova [2, 6, 10–12]. Endoscopic retrograde cholangiopancreatography may show crescent-shaped or leaf-shaped filling defects or alternating bile duct narrowing and fusiform dilation [3]. Serpiginous, yellow-white nodules on the surface of the liver may be seen by use of laparoscopy. An ELISA has a sensitivity of 100% and a specificity of 97.8% [13]. Examinations of stool samples for the presence of ova and parasites are not sensitive, because ova production is low and because excretion is intermittent. Ova are not detected during the acute phase of infection or in ectopic infections.

Treatment with praziquantel, mebendazole, or albendazole is ineffective. The treatment of choice is triclabendazole (Egaten; Novartis), which has an efficacy of 85% and has minimal side effects [3]. It is available in the United States, on a compassionate-use basis, through the Division of Special Pathogen and Immunologic Drug Products of the US Food and Drug Administration Center for Drug Evaluation and Research.

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