CASE REPORT

Fascioliasis: a case report presentation

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ABSTRACT

Fascioliasis (liver fluke disease) is a zoonosis of significant public health relevance, caused by parasites of the genus *Fasciola*, specifically of the species *Fasciola hepatica*, a helminth of the class Trematoda, which exhibits a lanceolate morphology and is involved in the zoonotic cycle through contamination of bodies of water and aquatic vegetation, including watercress, by means of metacercariae, its infective form. Their life cycle includes a migration phase from the host's intestine to the liver, where they mature and settle in the bile ducts, causing pathological changes such as direct hepatic lesions, bile duct obstruction and a systemic inflammatory response. Clinically, these events manifest through predominantly hepatic and gastrointestinal symptoms secondary to hepatic involvement, which can escalate to severe complications such as cirrhosis and hepatic abscesses in the absence of early diagnosis and adequate treatment.
We present the case of a 54-year-old female patient who was admitted to the emergency room with a condition characterized by headache, vomiting, cough, palpitations and exertional dyspnea. The initial diagnostic evaluation, guided by the ultrasound finding of choledocholithiasis, led to an endoscopic retrograde cholangiopancreatography (ERCP) that revealed the presence of a single papilla. This finding, along with the described symptoms, facilitated the diagnosis of hepatic fascioliasis caused by *Fasciola hepatica*, which was later removed. Likewise, it underscores the importance of including this parasitosis as a differential diagnosis for hepatic and gastrointestinal diseases, particularly in compatible epidemiological contexts or a history of exposure to contaminated freshwater sources.

Keywords: Endoscopy; Fasciola hepatica; Choledocholithiasis; Fascioliasis (Source: MeSH NLM).

INTRODUCTION

Fascioliasis is a parasitic infection that can be transmitted to humans and is caused by the trematode *Fasciola hepatica* and, to a lesser extent, by *Fasciola gigantica*. This parasite has a worldwide distribution, except in Antarctica, and an estimated 50 % of the reported cases occur in South America, with Peru, Bolivia, and Ecuador being the most affected countries [1]. In Peru, it is considered a zoonosis and poses a public health problem, as local and regional livestock areas are the most affected. An infected animal becomes a key biological vector that, combined with the parasite's high egg production capacity, generates multiple foci of infection, facilitating rapid spread to other animals and humans and complicating its eradication [1,2].

Fasciola hepatica is a hermaphroditic trematode characterized by a lanceolate shape and a fleshy appearance. Its dimensions range from 2 to 5 cm in length and approximately 1.5 cm in width [2]. Bovine and ovine livestock are its primary hosts, while freshwater snails are its intermediate hosts, and contaminated plants and water are its sources of transmission. The consumption of aquatic plants (such as watercress, alfalfa, lettuce, etc.) or foods cooked with water containing immature parasite larvae can turn humans into accidental hosts [1].

CLINICAL CASE

A 54-year-old female patient from the province of Paucartambo, a farmer with a history of raising bovine and ovine livestock, was admitted to the Emergency Department of Hospital Regional del Cusco due to the following symptoms, which she had been experiencing for six days: cough, vomiting, headache, exertional dyspnea and general malaise. Consequently, she was hospitalized with a diagnosis of community-acquired pneumonia (CAP). Once the condition was resolved, she was transferred to the Department of Internal Medicine, where laboratory tests revealed abnormalities such as

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Received: February 5, 2024
Reviewed: April 1, 2024
Accepted: May 2, 2024

decreased urea at 11 mg/dL, leukopenia and a stool ova and parasite test showed *Ascaris lumbricoides* eggs. In addition, an ultrasound was performed, which revealed choledocholithiasis. Therefore, the patient underwent an endoscopic retrograde cholangiopancreatography (ERCP), during which a single papilla with fibrotic appearance was observed in the second portion of the duodenum. Based on this finding, a papillotomy was performed, and a *Fasciola hepatica* specimen was removed (Figure 1), with undulating movements observed after removal (Figure 2). It was concluded that this was a case of fascioliasis caused by *Fasciola hepatica*, and the patient was treated with a single oral dose of triclabendazole at 10 mg/kg.

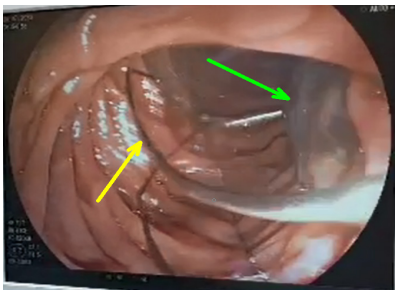

Figure 1. Stone extraction basket for the common bile duct (yellow arrow) and *Fasciola hepatica* (green arrow)

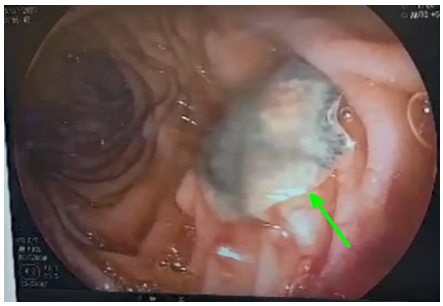

Figure 2. Live *Fasciola hepatica* with undulating movements

DISCUSSION

Fascioliasis is a foodborne trematodiasis caused by two species of the genus *Fasciola*: *hepatica* and *gigantica*. In our country, these parasites are commonly referred to by various names, such as *duelas* or *alicuyas* [3].

Both *Fasciola* species are leaf-shaped and large enough to be clearly visible; *Fasciola gigantica* is noticeably larger and can reach up to 5 cm in length [4,5]. It should be noted that in the Americas, the only species transmitted is *Fasciola hepatica*—the causative agent in the present clinical case—which is commonly found in temperate climates and is easily transmitted, as it parasitizes many types of plant-eating animals, and its larvae are found on aquatic vegetation [6,7].

The life cycle of this parasite begins when the definitive host or a human excretes feces containing its eggs, which then fall into fresh water, where they embryonate [8]. The miracidium hatches from them and, equipped with a tail, swims through the aquatic environment in search of an intermediate host: freshwater snails of the genus *Lymnaea* [8,9]. The trematode undergoes several developmental stages within the snail before being released as a cercaria, which then transforms into a metacercaria and encysts on vegetation—most commonly watercress—that is eventually ingested by humans or other animals, which can become infected [8].

Transmission occurs via the oral route, with the contaminated food bolus reaching the stomach. The larva is then released from the metacercaria as gastric juices break down its envelope. The parasite enters the small intestine, migrates through the intestinal wall and the peritoneal cavity to Glisson's capsule, penetrates the liver, and ultimately reaches the bile ducts, where it completes its establishment [10].

Relevant predisposing factors for infection with *Fasciola hepatica* include limited access to basic household services such as electricity and water, as well as a lack of knowledge about the disease in livestock [11]. Other strongly related risk factors include the consumption of aquatic plants, food contaminated with feces, and climatic conditions. The latter play a key role in the transmission of *F. hepatica* to mammals, as its geographic distribution is determined by the presence of *Lymnaea* snails, which inhabit water bodies that support their reproduction and viability of the larvae [11,12].

Clinical signs are divided into three categories according to the stage of infection: acute or hepatic, latent (with the adult parasite) and chronic or biliary. The acute phase symptoms appear between 6 and 12 weeks after ingestion of the metacercariae. Some of the most common symptoms are inflammation, fever, stomach discomfort, anorexia, nausea, diarrhea, urticaria, cough and hepatomegaly [13,14]. The chronic phase—which begins approximately the sixth month and can last up to ten years or more—is asymptomatic, although it may cause hepatomegaly, epigastric pain and right upper quadrant pain. Over time, it can also lead to cholelithiasis, cholangitis, cholecystitis and obstructive jaundice [13,14].

The most common complications of fascioliasis are subcapsular hematoma, rupture, abscesses, severe anemia, jaundice, cholangitis, cholecystitis, pancreatitis or choledocholithiasis—as seen in this patient—sometimes requiring invasive or surgical procedures due to biliary tract obstruction [15].

Differential diagnoses vary according to the stage of infection. Some of these include toxocariasis, ascariasis, strongyloidiasis and acute schistosomiasis [14].

For diagnosis, it is important to suspect fasciolosis when the patient presents with abdominal pain and/or hepatomegaly, along with a dietary history of ingestion or consumption of watercress or raw vegetables exposed to contaminated water, in combination with laboratory tests [7].

Diagnosis is based on the detection of antibodies, which may take two to four weeks to become detectable after initial infection and should remain positive through the chronic

phase [16]. It should be noted that the most reliable tests include the identification of eggs in feces or bile aspirates, serological examination and the use of biochemical markers (elevated serum levels). However, the microscopic technique for the identification of eggs in feces has low sensitivity, as it requires repeated testing and egg concentration [5,16]. In the case presented, three samples were required, and eggs were found only in the last one—but from *Ascaris lumbricoides*, not *Fasciola hepatica*—demonstrating that, although it is a useful test, it has low sensitivity.

Treatment for fascioliasis consists of standardized anthelmintic therapy. The drugs used are triclabendazole, administered at an oral dose of 10 mg/kg over one to two days; nitazoxanide, with an oral intake of 500 mg twice a day for one week, and other alternatives (endoscopy and surgery) [14]. In this case, the patient was treated with triclabendazole 10 mg/kg, with subsequent follow-up.

Author contributions: ERCP, JWCC, DHAJS, QUIQ, EGMO and HVF participated in the design, protocol, writing, interpretation of the data, critical review, and assume responsibility for the manuscript.

Funding sources: This article was funded by the authors.

Conflicts of interest: The authors declare no conflicts of interest.

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