Case Report

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A 6-year-old girl with abdominal pain and hepatomegaly; Fasciloa hepatica with an unusual presentation

Fatemeh Farahmand[1], Ruhollah Edalatkhah[2], Sara Memarian[3], Hojatollah Jafari-Fesharaki[4], Behdad Gharib[5]

1- Professor, Department of Pediatric Gastroenterology, Children's Medical Center, Tehran University of Medical Sciences, Iran
2- Fellowship, Department of Pediatric Gastroenterology, Children's Medical Center, Tehran University of Medical Sciences, Iran
3- Resident, Department of Pediatrics, Children's Medical Center, Tehran University of Medical Sciences, Iran
4- Fellowship, Department of Pediatric Intensive Care, Children's Medical Center, Tehran University of Medical Sciences, Iran
5- Pediatric Gastroenterologist, Children's Medical Center, Tehran University of Medical Sciences, Iran

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Corresponding author:
Ruhollah Edalatkhah

Email:
drr.edalatkhah1358@yahoo.com

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ABSTRACT

We present a girl afflicted by Fasciola hepatica who was firstly considered to have other causes of jaundice and abdominal pain; however, she had eosinophilia. The clinicians initially ruled out the possibility parasitic infection via having one negative stool examination. According to the epidemiologic characteristics of the region, the patient belonged to hypereosinophilia and hyper IgE; we repeated the stool exam 3 times and the experienced parasitologist confirmed the diagnosis.

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Introduction

Fasciola hepatica is not a rare disease but sometimes, presents with confusing signs and symptoms that may lead to several unnecessary medical workups. Fasciola hepatica is a common disease in the sheep-rearing areas (1). Human species is an accidental host for Fasciola hepatica (2), afflicted via eating watercress grown in sheep-raising rural area and also occasionally infected via taking water containing viable metacercariae (3) or via

eating contaminated liver of sheep which is not properly cooked.

Case Report

A 6-year-old girl (who was an inhabitant of northwest of Iran) was referred to our hospital with the complaint of recurrent fever, anorexia, abdominal pain, nausea and vomiting. Her problem started from one year before with loss of appetite, weight loss and severe generalized abdominal pain constant most of the times of the day. Abdominal pain became worse after eating food. She had several medical visits in other centers.

On examination, her weight was 25 kg (95^{th} percentile for age) and her height was 117 cm (50^{th} percentile). She has hepatomegaly (the border of liver was 4 cm below the costal border), and pale conjunctivae. The rest of examination was normal. Her past medical history including history of drug and allergy problems and family history (including infections and malignancies in the family) were unremarkable. The blood work assessments results, in the other hospital, were as follows:

White blood cells (WBC): 26400 /mm^3, Neutrophil:22%, Lymphocyte: 24%, Eosinophil: 47%, Hemoglobin (Hb): 8.5 g/dl, Mean corpuscular volume (MCV): 78.3 fl, and Platelet (Plt): 248000 /mm^3.

Aspartate transaminase (AST):98 IU/l, Alanine transaminase (ALT): 104 IU/l, Alkaline phosphatase (ALP): 1616 IU/l, Bilirubin total: 0.4 mg/dl, Erythrocyte sediment rate (ESR): 102 mm/hour (reference range: up to 10), and Immunoglobulin E (IgE): 314.9 mg/dl (reference range: 1.03-161.3).

A stool examination had been performed in another medical center and was negative for parasitic disease. Anti-toxocara antibody had been checked and was negative, too. Continuing workup for abdominal pain, abdominal utrasonography showed normal size and echo of the liver, maximum normal size of the spleen, normal kidneys and several mesenteric lymph nodes. Chest X-ray and heart echocardiography were normal. Anabdominal computerized tomography (CT) scan performed and reported as: liver span at the midclavicular line was 125 cm which was larger than normal size; intrahepatic bile ducts (IHDs) were dilated and seemed to be because of sludge; common bile duct and gallbladder were dilated, too. A small hypodence lesion with diameters of 13 . 15 mm in the right liver lobe was seen. The spleen was larger than normal with the length of 131 mm.

Pathologic work-ups were as follows: a bone marrow aspiration performed and reported as hypereosinophilic marrow (eosinophilic hyperplasia). Liver biopsy reported as congenital hepatic fibrosis and lymph node biopsy showed reactive changes. A diagnostic laparotomy was performed and omental biopsy taken which was normal, too.

These workups were performed in another medical center. We performed another lab test and the results were as: WBC: 16600 /mm^3, Neutrophil: 58%, Lymphocyte: 32%, Eosinophil: 3.5%, Hb: 9.8 g/dl, and Plt: 359000 /mm^3.

AST: 145 IU/l, ALT: 156 IU/l, ALP: 1087 IU/l, Gamma-glutamyl transferase (GGT): 831 IU/l, Total bilirubin: 2.8 mg/dl, and Direct bilirubin: 1.6 mg/dl.

The liver biopsy which was previously done, was reviewed again by our pathologist and hypereosinophilia was reported; so, we considered that parasitic infection could be more probable and we decided to perform another "three-days stool exam" to search for evidences of parasitic infection. The parasitologist reported Fasciola hepatica in the stool specimen (Figure 1) and a magnetic resonance cholangiopancreatography (MRCP**)** revealed local narrowing at common hepatic duct possibly due to inflammatory change and IHDs dilatation (Figure 2).

The patient was administered triclabendazole with the dose of 10 mg/kg daily for 2 days.

On the follow-up visit, two month later, the eosinophils percentage was 1% and

absolute eosinophil count was 91/µl, AST: 25 IU/l, ALT: 13 IU/l, GGT: 161 IU/l, and ALP: 574 IU/l. She was visited several times up to 12 months after being discharged and her condition and medical laboratory workups were completely well and normal.

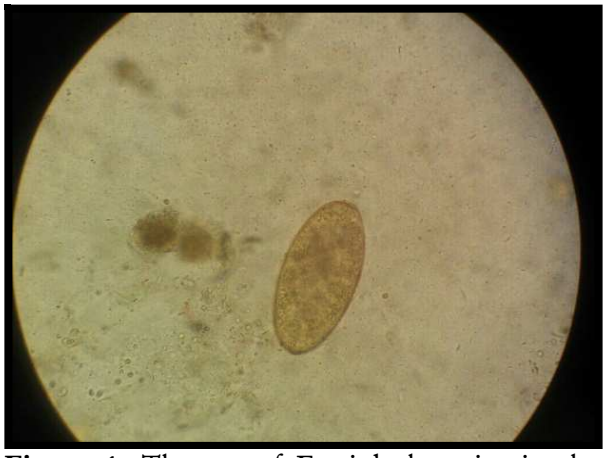

Figure 1. The egg of Fasciola hepatica in the stool specimen

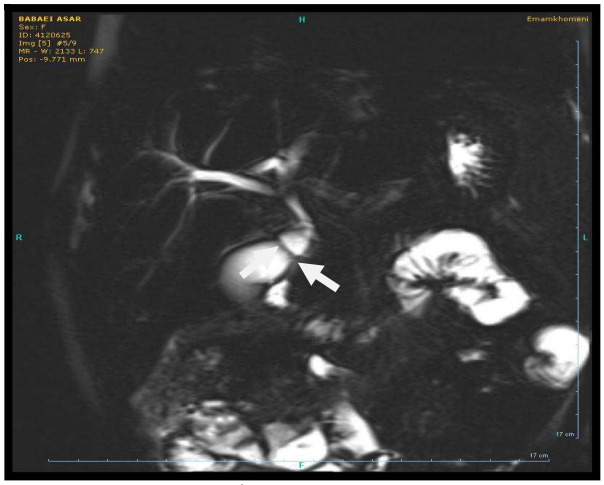

Figure 2. The magnetic resonance cholangiopancreatography (MRCP) revealed local narrowing at common hepatic duct possibly due to inflammatory change and dilatation of intrahepatic bile ducts (IHDs)

Discussion

The liver phase of the fasciolasis is characterized by right upper quadrant pain, hepatosplenomegaly and fever. In the biliary phase, most of the acute symptoms improve. Rarely, obstructive jaundice or biliary cirrhosis may occur. Apart from identifying the eggs in the stool specimen, serology may suggest the diagnosis, too. Imaging may show hypodense liver lesions (which was identified in our patient). Children may present the disease dramatically with generalized edema, hepatic cirrhosis and esophageal varisces (4).

Peripheral eosinophilia has nearly always been accompanied with faosciolasis and the infection should be considered when the patient is presented with abdominal pain, hepatomegaly and eosinophilia (5). Diagnosis of fasciolasis can be a clinical challenge. It is reported that fasciolasis can be presented with cough, cervical and inguinal lymphadenopathy, and hepatosplenomegaly and initially may be considered to be tuberculosis infection (6).

Identifying the egg parasite in the stool exam, duodenal aspirates, or bile specimens can confirm the diagnosis. In the acute phase of infection or in case of ectopic fascioliasis, the eggs may not be found in the stool exam. Few months after getting the infection (3-4 months) eggs may be found in the stool (7); however, the rate of positive stool samples have been reported between 0 and 72% in fascioliasis (8-12). Morphologically, eggs are nonembryonated, ovoid shape, and large (130-150 . 60-90 . m^2), having a small operculum. The shape of the egg is similar to that of Fasciolopsis buski (which is an intestinal trematode). The amount of eggs in stool specimen varies widely because they are released intermittently, and multiple concentrated stool specimens should be examined (13).

Fasciola hepatica may cause bile duct obstruction and inflammation and the endoscopic retrograde cholangiopancreatography images should be performed to rule out the other possible pathologies. It may cause recurrent cholangitis, severe hemobilia, acute pancreatitis and lithiasis of the bile duct or gallbladder (1).

In the case presented here, stool examinations performed in the other medical center were negative for parasites, probably because the patient was in an acute phase of

infection, and the patient sustained a lot of unnecessary procedures, such as diagnostic laparotomy.

As fascioliasis is increasingly encountered worldwide, physicians should be aware of this disease in non-endemic areas as well as in high-endemic areas such as Portugal, the Nile delta, northern Iran, parts of China, and the Andean highlands of Ecuador, Bolivia, and Peru (14). Administering praziquantel does not lead to proper response. A single dose of triclabendazole 10 mg/kg (a well-tolerated benzimidazole) is the first-line treatment which has been very effective against mature and immature flukes of Fasciola hepatica (15). Oral triclabendazole (10 mg/kg once or twice) or bithionol (30-50 mg/kg once daily every other day for 10-15 doses) are the recommended treatments (4).

We reported this case to remind the clinicians the importance of considering the epidemiology of the disease for clinical diagnosis. The patient was from a rural area that was endemic for parasitic diseases and presented with abdominal pain which is a common complaint in pediatrics. Those clinicians who visited the patient initially had notified hypereosinophilia and asked for stool examination test. Depending on the pathophysiology of Fasciola hepatica, the stool exam could be negative in the acute phase of infection or in case of ectopic fascioliasis. This case shows the importance of the understanding of pathophysiology and epidemiology of the disease in preventing of performing unnecessary procedure. Fasciolasis should be considered in patients with abdominal pain, hepatomegaly and eosinophilia, especially in patients from endemic and rural areas.

Conflict of Interests

Authors have no conflict of interests.

Acknowledgments

None.

References

1. Ozer B, Serin E, Gumurdulu Y, Gur G, Yilmaz U, Boyacioglu S. Endoscopic extraction of living Fasciola hepatica: case report and literature review. Turk J Gastroenterol 2003; 14(1): 74-7.
2. Moghadami M, Mardani M. Fasciola hepatica: A cause of obstructive jaundice in an elderly man from Iran. Saudi J Gastroenterol 2008; 14(4): 208-10.
3. Chan CW, Lam SK. Diseases caused by liver flukes and cholangiocarcinoma. Baillieres Clin Gastroenterol 1987; 1(2): 297-318.
4. King CH, Bustinduy AL. Flukes (Liver, lung and intestinal). In: Kliegman R, Stanton B, Geme J, Schor NF, Behrman RE, Editors. Nelson textbook of pediatrics. 20th ed. Philadelphia, PA: Elsevier Health Sciences; 2015. p. 1747-8.
5. Kang BK, Jung BK, Lee YS, Hwang IK, Lim H, Cho J, et al. A case of Fasciola hepatica infection mimicking cholangiocarcinoma and ITS-1 sequencing of the worm. Korean J Parasitol 2014; 52(2): 193-6.
6. Rohela M, Jamaiah I, Menon J, Rachel J. Fasciolopsiasis: A first case report from Malaysia. Southeast Asian J Trop Med Public Health 2005; 36(2): 456-8.
7. Chen MG, Mott KE. Progress in assessment of morbidity due to Fasciola hepatica infection: a review of recent literature. Trop Dis Bull 1990; 87(4): R1-R38.
8. Bjorland J, Bryan RT, Strauss W, Hillyer GV, McAuley JB. An outbreak of acute Fascioliasis among Aymara Indians in the Bolivian Altiplano. Clin Infect Dis 1995; 21(5): 1228-33.
9. Han JK, Choi BI, Cho JM, Chung KB, Han MC, Kim CW. Radiological findings of human Fascioliasis. Abdom Imaging 1993; 18(3): 261-4.
10. Han JK, Han D, Choi BI, Han MC. MR findings in human Fascioliasis. Trop Med Int Health 1996; 1(3): 367-72.
11. van Beers B, Pringot J, Geubel A, Trigaux JP, Bigaignon G, Dooms G. Hepatobiliary Fascioliasis: noninvasive imaging findings. Radiology 1990; 174(3 Pt 1): 809-10.
12. Arjona R, Riancho JA, Aguado JM, Salesa R, Gonzalez-Macias J. Fascioliasis in developed countries: a review of classic and aberrant forms of the disease. Medicine (Baltimore) 1995; 74(1): 13-23.
13. Graham CS, Brodie SB, Weller PF. Imported

Fasciola hepatica infection in the United States and treatment with triclabendazole. Clin Infect Dis 2001; 33(1): 1-5.
14. Liu D. Molecular detection of human parasitic pathogens. Boca Raton, FL: CRC Press; 2012. p. 343-51.
15. Millan JC, Mull R, Freise S, Richter J. The efficacy and tolerability of triclabendazole in Cuban patients with latent and chronic Fasciola hepatica infection. Am J Trop Med Hyg 2000; 63(5-6): 264-9.