

A case of fascioliasis mimicking malignancy

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Abstract

Fascioliasis is a zoonotic infection usually observed in developing countries and is endemic in Southeast Anatolia, Turkey. Sometimes, its clinical symptoms may mimic and resemble those of other diseases, such as malignancy or stone. Fascioliasis, initially considered as malignancy, can lead to unnecessary invasive procedures. A 69-year-old man presented with hepatic masses. Positron emission tomography (PET/CT), upper gastrointestinal endoscopy and colonoscopy performed to detect the primary tumour showed no lesion, except in the liver. The patient had eosinophilia and a history of raising livestock in an endemic area. The result of the indirect hemagglutination test for *Fasciola hepatica* was 1/320. Serologic evaluation and dynamic computed tomography confirmed the diagnosis. Occasionally, it may be difficult to differentiate fascioliasis from malignancy. Fascioliasis should be considered in the differential diagnosis of patients with suspicious masses in the liver, especially in those living in endemic areas, prior to conducting invasive procedures.

Keywords: *Fasciola hepatica*; fascioliasis; malignancy.

INTRODUCTION

Fascioliasis is a zoonotic infection commonly observed in developing countries and has the highest prevalence in sheep-rearing areas (1).

The infection is endemic in Southeast Anatolia, Turkey. The prevalence of Fascioliasis in Turkey is 0.03%–0.8% (2). Definitive hosts are sheep and goats. Humans are incidental hosts in the life cycle of this parasite and most often acquire infection by consuming watercress that has been grown in sheep-raising areas. The infection may also be transmitted via other freshwater plants (1).

The complex lifecycle of the parasite includes a hepatic phase and a biliary phase. Flukes cause destruction of the hepatic tissue and obstruction in the biliary ducts through thickening, dilatation and fibrosis of the segmental bile ducts (3).

Up to 50% of *F. hepatica* infections are asymptomatic. Common symptoms are pain in the right upper quadrant of abdomen, fever, hepatomegaly and marked eosinophilia observed intrahepatic phase. Other symptoms include jaundice, anorexia, nausea, vomiting, myalgia, cough and

urticaria (3). Owing to the non-specific symptoms and findings of these diseases, diagnosis and treatment are commonly delayed.

Most common laboratory findings are elevated liver enzymes (ALT and AST) and cholestasis enzymes (ALP and GGT) (4). Eosinophilia, which is present in all infections at all stages, can be used as a diagnostic factor in ectopic and early stage infections in which eggs are not present in stool samples.

Diagnosis is typically made via serology or detection of parasites in stool upon clinical suspicion (3). Sometimes, diagnosis may be delayed or difficult in the course of the disease because clinical symptoms may mimic or resemble those of other diseases.

Patients may present with malignancy-like clinical presentations such as liver masses, extrahepatic cholestatic jaundice, weight loss and fever. Infections that are initially diagnosed as malignancy can lead to unnecessary interventions, including invasive procedures (2).

Stool examination is not sufficient for diagnosis. Eggs are not detected in stool samples during the acute

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phase of infection or when ectopic fascioliasis has occurred. In such cases, immunoserological tests can be used in the early hepatic stage, but enzyme-linked immunosorbent assay (FAST-ELISA) testing is more rapid and reliable, with a sensitivity of 95% (5). The infection can be shown more easily via endoscopic retrograde cholangiopancreatography (ERCP). The organisms can be removed directly (6).

Typical radiological imaging of fascioliasis is more likely to be correctly reported by radiologists in areas in which the disease is prevalent (7). Computed tomography scans may reveal burrow tracts made by the worms and dilation of the bile ducts.

The first-line treatment is a single dose of triclabendazole (10 mg/kg), which is effective at all stages of fascioliasis with a cure rate higher than 90% (8).

Here we present a case that was initially thought to be that of malignancy, and the diagnosis of fascioliasis was made without unnecessary invasive procedures.

CASE REPORT

A 69-year-old man, who had abdominal pain for several months, was admitted to the hospital. Physical examination revealed minimal tenderness in the right upper quadrant, and abdominal ultrasonography revealed heterogeneity in the liver parenchyma with two solid lesions (40 mm and 50 mm in diameter) in the right hepatic lobe. Based on radiological findings, the pre-diagnosis was that of malignancy. The patient was referred to the department of medical oncology with hepatic masses, which led to the suspicion of metastasis of an unknown origin or cholangiocarcinoma.

Abdominopelvic CT revealed multiple, hypodense, irregular, nodular focal lesions of different sizes in segments of the right hepatic lobe (figure 1). In addition, intraabdominal lymphadenopathy was identified with the largest lymph node having a diameter of 1.5 cm. Results of upper gastrointestinal endoscopy revealed gastritis, and those of colonoscopy showed normal findings. Owing to the initial suspicion of malignancy, positron emission tomography (PET/CT) was performed to detect the primary tumour. PET/CT images showed no lesion except in the liver. Laboratory values revealed mild leukocytosis (11,150 mm³) with eosinophilia (65%), which led to the suspicion of a parasitic infection. Peripheral blood smear confirmed eosinophilia. All other parameters were normal, and all tumour markers, including Ca 19-9 and carcinoembryonic antigen, were within normal limits. To obtain tissue for pathological diagnosis, a biopsy was planned but not performed. Because the patient had eosinophilia and a history of raising livestock in an endemic area, parasitic disease and paraneoplastic syndromes were suspected at first. For differential diagnosis, stool examinations were performed, but there were no eggs, likely because the patient was in the acute phase of infection. Serologic evaluations were performed. The result of an indirect hemagglutination test for *F. hepatica* was 1/320 (FAST-

ELISA). In the current case, dynamic CT confirmed the diagnosis; thus ERCP was not performed for diagnosis and treatment. The patient was treated with triclabendazole (a single oral dose of 10 mg/kg). After three weeks, the patient's symptom resolved and eosinophilia disappeared. Follow-up serological tests and CT confirmed the eradication. After three months, serological tests returned to normal, and CT showed regression of the mass and lymphadenopathy.

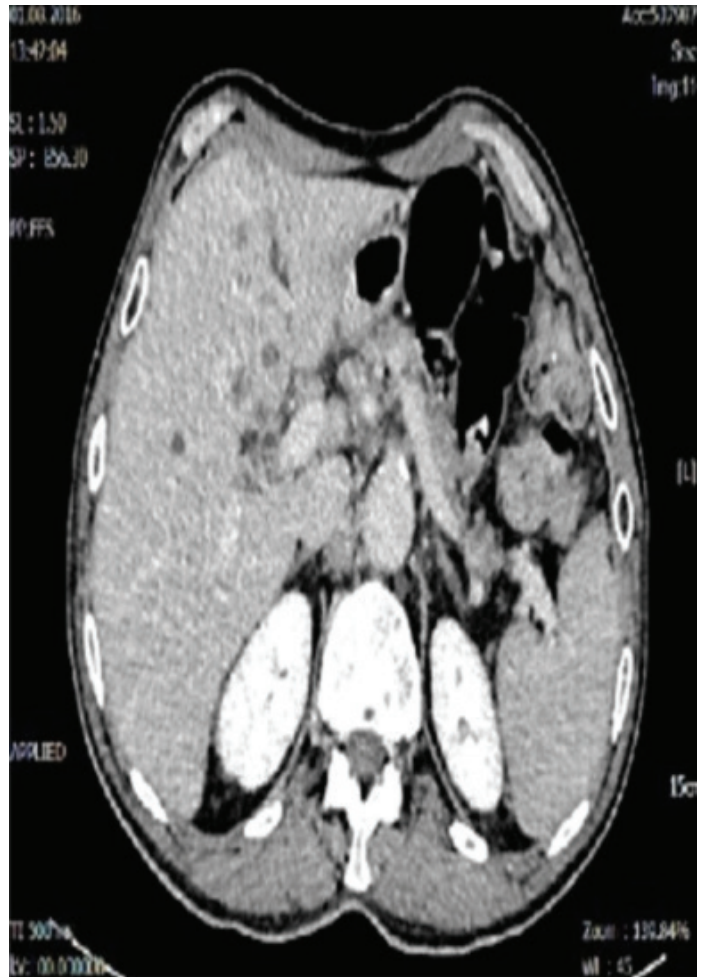


Figure 1. Appearance of locally irregular hypodense areas associated with *Fasciola hepatica* in liver in dynamic computerized tomography.

DISCUSSION

Presentations of helminthic infections can initially be similar to those of some cancers. In a review article, *F. hepatica* infections and some other helminthic infections have been reported to mimic different malignancies (9).

Usually, diagnoses of helminthic infections are based on histology from tissue samples obtained during biopsy or surgery. Invasive procedures and investigations can be avoided in some cases if helminthic infections are considered early and appropriate diagnostic methods are performed. Diagnosis can be established by identifying helminth eggs in stool, duodenal aspirates or bile specimens and serological testing (9).

The only clinical complaint in the present case was of abdominal pain. The patient had no fever or weight loss, and all of these symptoms were non-specific. Abdominal ultrasonography showed hepatic masses, but levels of all tumour markers were within normal values. Gastrointestinal endoscopy, colonoscopy and positron emission tomography showed no lesion, except in the liver. To obtain tissue for pathological diagnosis, a biopsy was planned but was not performed. Because the patient had a history of raising livestock and eosinophilia, helminthic disease and paraneoplastic syndromes were suspected at first. The history of cattle raising and hypereosinophilia were useful indicators for diagnosing fascioliasis. Physicians practicing in endemic areas should be aware of this disease.

While evaluating patients with liver masses with concurrent hypereosinophilia, such as in the present case, it is essential to include parasitic infections in the differential diagnosis, especially in patients living in endemic regions. Our initial suspicions were those of primary or secondary hepatic malignancy for this patient. However, serological studies and radiological imaging revealed a parasitic infection. CT images of *F. hepatica* are sometimes confused with malignancy or stones, as reported in our case (10,11).

Radiologic examinations are helpful in the diagnosis of fascioliasis. CT usually helps in diagnosis of 90% of patients with acute fascioliasis. Characteristic features are multiple small, sharply non-confined hypodense lesions, microabscesses showing branching and subcapsular localisation of lesions (12).

CT scan and serology were performed to establish a definite diagnosis in the present case. On radiological examinations, intrahepatic fascioliasis showed multiple locally irregular hypodense areas. Essential serologic tests for diagnosing acute fascioliasis include FAST-ELISA, complement fixation, indirect immunofluorescence (IIF), counter-electrophoresis, indirect hemagglutination and double diffusion. These tests are quite sensitive (9). IgG antibody against *F. hepatica* was positive in our patient. Another diagnostic method is the determination of *Fasciola* ovaries and adult form in biliary aspiration via ERCP (13).

Several drugs, such as praziquantel, bithionol or triclabendazole, can be used for treating fascioliasis. The patient was treated using triclabendazole. There were no side effects, and a single dose was effective. Follow-up examination revealed that all symptoms and eosinophilia were resolved. Triclabendazole is recommended as the first step in the treatment of fascioliasis because of its ease of use and good tolerance (14); treatment of fascioliasis has a success rate of 80%–100%. With therapy, surgery may be necessary in extreme cases to clear the biliary tract (15).

CONCLUSION

In conclusion, sometimes fascioliasis is difficult to differentiate from malignancies, such as hepatic

malignancy, liver metastasis or cholangiocarcinoma. Fascioliasis should be considered in the differential diagnosis of patients with suspicious masses in the liver, especially in endemic areas, before conducting further investigations and invasive procedures.

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