A Pediatric Case of Human Biliary Fascioliasis
Parasitological and Radiological Diagnosis

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Abstract: An 11-year-old girl presented with severe right upper hypochondrial pain, fever, and severe pallor. Parasitological stool examination using Kato-Katz technique revealed a large number of huge operculated yellowish brown eggs. Abdominal ultrasonography revealed dilatation of the common bile duct associated with a moving shadow. Endoscopic retrograde cholangiopancreatographic sphincterotomy, basketing, balloononing, and extraction of Fasciola worms from the common bile duct were done.

Key Words: pediatric, children, hypochondrial pain, endoscopic retrograde cholangiopancreatography, Fasciola

CASE REPORT

An 11-year-old girl, from Toukh, Egypt (referred from Pediatrics Department to Parasitology Department, Faculty of Medicine, Benha University for stool examination), presented with history of recurrent severe pain in the right upper abdomen and recurrent low-grade fever since few months. She also complained of progressive weight loss, pallor, anorexia, easy fatigability, lack of concentration and decreased; effort tolerance, alertness, attention span, and learning ability. On clinical examination, it was found that she was mildly febrile, jaundiced with tender hepatomegaly. Heart and chest examinations were free. The hematological investigations showed microcytic hypochromic anemia (HB 9.00) with eosinophilia. The liver function tests were within normal limits, and total bilirubin was 3.00 mg/dL. Parasitological examination of stool samples using multiple Kato-Katz technique (10 slides) revealed large, oval, operculated, thin-shelled Fasciola eggs (mean no. of eggs in 10 Kato-Katz was 12 eggs). An ultrasonography of the abdomen revealed mild hepatomegaly (liver span = 133 mm) with homogenous echopattern associated with extrahepatic biliary obstruction, dilated common bile duct (CBD) measuring 9-mm diameter down to a small echogenic mobile structure (suspected parasitic worm) (Table 1, Fig. 1). Endoscopic retrograde cholangiopancreatography was performed wherein CBD was selectively cannulated, and the cholangiogram revealed irregular filling defects in CBD. Sphincterotomy was performed, and multiple worms were extracted using basket and balloon catheter (Fig. 2). After CBD clearance, 7F stint was placed for free bile drainage. The child required repeated doses (10 mg/kg) of triclabendazole for Fasciola infection treatment. Few weeks after worm extraction, the child regained her activity and concentration. Child is under follow-up without any complaints. A follow-up abdominal ultrasonography and stool microscopy did not show abnormalities.

DISCUSSION

Fascioliasis is an important zoonotic disease caused by 2 trematode liver fluke species: F. hepatica and Fasciola gigantica infecting several mammalian species including cattle, goats, sheep, and humans. F. hepatica is often over-laps with that of F. hepatica, and the 2 species are so closely related to each others, in terms of genetics, behavior, and morphological and anatomical structures that it is greatly difficult to distinguish them. In humans, liver fluke classification cannot be achieved by clinical, pathological, cprorogical, or immunological methods. The differential diagnosis between F. hepatica and Fasciola infection is very important because of their different transmission and epidemiological characteristics. Therefore, sophisticated molecular techniques are required to correctly identify and diagnose the infection.

School-aged children are disproportionately affected by fascioliasis in endemic areas. The flukes get into the small bile ducts inside the liver and the gallbladder where they live for 20 to 30 years. The flukes cause chronic inflammation of the bile ducts causing scarring (fibrosis) of the bile ducts and bile duct dilatation. Chronic inflammation and bleeding into the biliary tree could cause anemia. Anemia and iron deficiency can cause devastating long-term developmental impairment in children. Weight loss has also been described with fascioliasis, but the extent of this problem and association with malnutrition are unknown. Our case showed typical manifestations of anemia and pallor-associated weight loss. The diagnosis is based on identification of Fasciola eggs in the stool; however, stool examination alone may not be enough for the diagnosis in all stages of the infection, because the parasite cannot produce eggs before invasion of biliary tract. Our case was fortunately primarily diagnosed parasitologically through detection of Fasciola eggs in stool using repeated Kato-Katz technique, which detected heavy infection (egg load >250 eggs/g feces). Radiological examinations are very useful in the diagnosis of many parasitic infections especially those affecting the liver. Ultrasound allows diagnosis of schistosomiasis-induced perportal fibrosis and bladder abnormalities. Liver abscesses can be differentiated from other focal lesions such as cysts or neoplasms. For amoebic abscesses, invasive
In case of fascioliasis, move-
Nonpharmacologic therapy in-
www.infectdis.com
Diagnostic Ultrasonographic Criteria in Liver and
Artesunate is also
Infectious Diseases in Clinical Practice
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Fasciola gigantica
Parasitology
Artemether has been
and
Fasciola hepatica
Treatment of this condi-
worm extracted by
62x48
2
Image 62x103 to 290x263
due to tropical hypereosinophilia.
hyoechogenic splenic foci and ultrasonographic abnormalities
directly with ultrasound. Filaria-induced damage also includes
peripheral lymph node enlargement, dilatation of the
CBD, intrahepatic biliary channels, and thickening of the gall-
bladder and echogenic, nonshadowing multiple particles in the
gallbladder or in the CBDs. Radiological investigation confirmed
our laboratory diagnosis. Ultrasonographic images of our patient
were compatible with fascioliasis, showing homogenous echopattern
associated with exohepatic biliary obstruction, dilated CBD down to a small echogenic mobile structure (representing
the worm). Tri A short sphincterotomy is often adequate to
achieve removal of these soft parasites. Treatment of this condition can be divided into pharmacologic and nonpharmacologic
therapy. Triclabendazole is a safe and efficacious drug when administered to a pediatric population living in a fascioliasis endemic area. In terms of efficacy, a single administration of triclabendazole was effective in reducing considerably the number of infected individuals, the mean intensity of infection, and the proportion of high-intensity infections and in keeping these indicators at low levels for a few months after treatment. Artemether has been demonstrated in vitro to be equally effective. Artemunate is also useful in human fascioliasis; however, it is slightly less potent than
triclabendazole and artemether. Nonpharmacologic therapy involves the use of ERCP with sphincterotomy and removal of the parasites from the biliary tree.
In conclusion, parasitic involvement of liver and biliary tree is an important differential diagnosis in patients with jaundice. Fascioliasis is an important public health problem and should be considered in children with mentioned nonspecific symptoms and eosinophilia and should be a differential diagnosis when bile duct dilatation is encountered on the ultrasound images, particularly at endemic regions. Health education is needed for the population at risk in rural areas to raise their awareness about the issue importance, magnitude, complications, mode of infection, and preventive and control measures especially about raw vegetable consumption and how their food habits can augment or minimize this health problem. Ultrasonography is an important diagnostic and therapeutic tool and can help in the diagnosis and noninvasive management of several liver parasites.

| TABLE 1. Diagnostic Ultrasonographic Criteria in Liver and CBD |
|---------------|------------------|
| **Finding**   |                  |
| Liver         | Mild hepatomegaly(liver span = 133 mm) with homogenous echopattern |
| CBD           | Dilated CBD measuring 9-mm diameter Small echogenic mobile structure (representing the parasitic worm) |

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**REFERENCES**


