Direct Choledochoscopic Visualization of Living Clonorchis sinensis in the Biliary Tract

Ma Zhili, Yuan Lei, Yang Xiaohong, Fan Ning, Wang Genshu

Department of Liver transplant and Surgery of Guangdong Provincial Hospital of Chinese Medicine, Guangdong Provincial Engineering Research Center of Precicion Intelligent Surgical Equipment, The Second Affiliated Hospital of Guangzhou University of Chinese Medicine, Guangzhou, China

A 73-year-old man was admitted with right upper quadrant abdominal pain of one week's duration. In November 2023, he suffered from choledocholithiasis and underwent endoscopic retrograde cholangiopancreatography at another hospital, which was reportedly successful. During the current admission, magnetic resonance cholangiopancreatography revealed multiple common bile duct stones and edematous thickening of the gallbladder wall, consistent with acute cholecystitis (Figure 1a).

The complete blood count results revealed a normal eosinophil count of 0.07×10^9 cells/L (reference range: 0.02–0.52×10^9 cells/L). However, the patient resided in a clonorchiasis-endemic region and reported a history of raw freshwater fish consumption. Consequently, stool examination was performed and confirmed the presence of *Clonorchis sinensis* eggs. Considering the large size and multiplicity of the common bile duct stones—favoring surgical exploration for complete clearance—together with concomitant cholecystitis requiring cholecystectomy, the patient opted for a single-stage procedure combining both the operations.

Intraoperatively, multiple common bile duct stones measuring ~ 1.0 cm in diameter were identified (Figure 1b). Notably, intraoperative choledochoscopy revealed live *Clonorchis sinensis* within the intrahepatic bile ducts (Figure 1c, Videos 1 and 2). The diagnosis of clonorchis sinensis infection was further confirmed by pathological examination of the extracted parasites (Figure 1d). Postoperatively, the patient received a 5-day course of oral albendazole at a dose of 400 mg twice daily for anti-parasitic treatment.

Clonorchiasis is a food-borne parasitic disease caused by the trematode *Clonorchis sinensis* and remains prevalent in tropical areas of Asia.[1] Humans acquire infection through ingestion of raw or undercooked freshwater fish or watercress contaminated with metacercariae. Early infection is often asymptomatic or present with vague and non-specific manifestations, such as asthenia and anorexia, which overlap with those of more common gastrointestinal conditions, thereby resulting in an insidious clinical course and frequent diagnostic delays.[2] Chronic clonorchiasis is a well-recognized etiology of hepatolithiasis and an established risk factor for cholangiocarcinoma. Chronic inflammation and mechanical irritation induced by adult flukes may also lead to biliary obstruction, recurrent cholangitis, and progressive hepatic fibrosis or cirrhosis.[3]

Given the risk of long-term chronic infection and serious complications, individuals with a history of consuming raw or undercooked freshwater fish in endemic areas should undergo stool screening for parasite ova, regardless of eosinophil count. Early diagnosis and intervention lowers the risk of clonorchiasis-related complications. Moreover, reducing the disease burden depends on effective public health strategies that discourage raw fish consumption and implement active screening of high-risk populations.

Corresponding author: Wang Genshu, Department of Liver transplant and Surgery of Guangdong Provincial Hospital of Chinese Medicine, Guangdong Provincial Engineering Research Center of Precicion Intelligent Surgical Equipment, The Second Affiliated Hospital of Guangzhou University of Chinese Medicine, Guangzhou, China

e-mail: wgsh168@163.com

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ORCID iDs of the authors: F.G. 0000-0002-6426-6436; D.Ö.E. 0000-0001-9102-7548..

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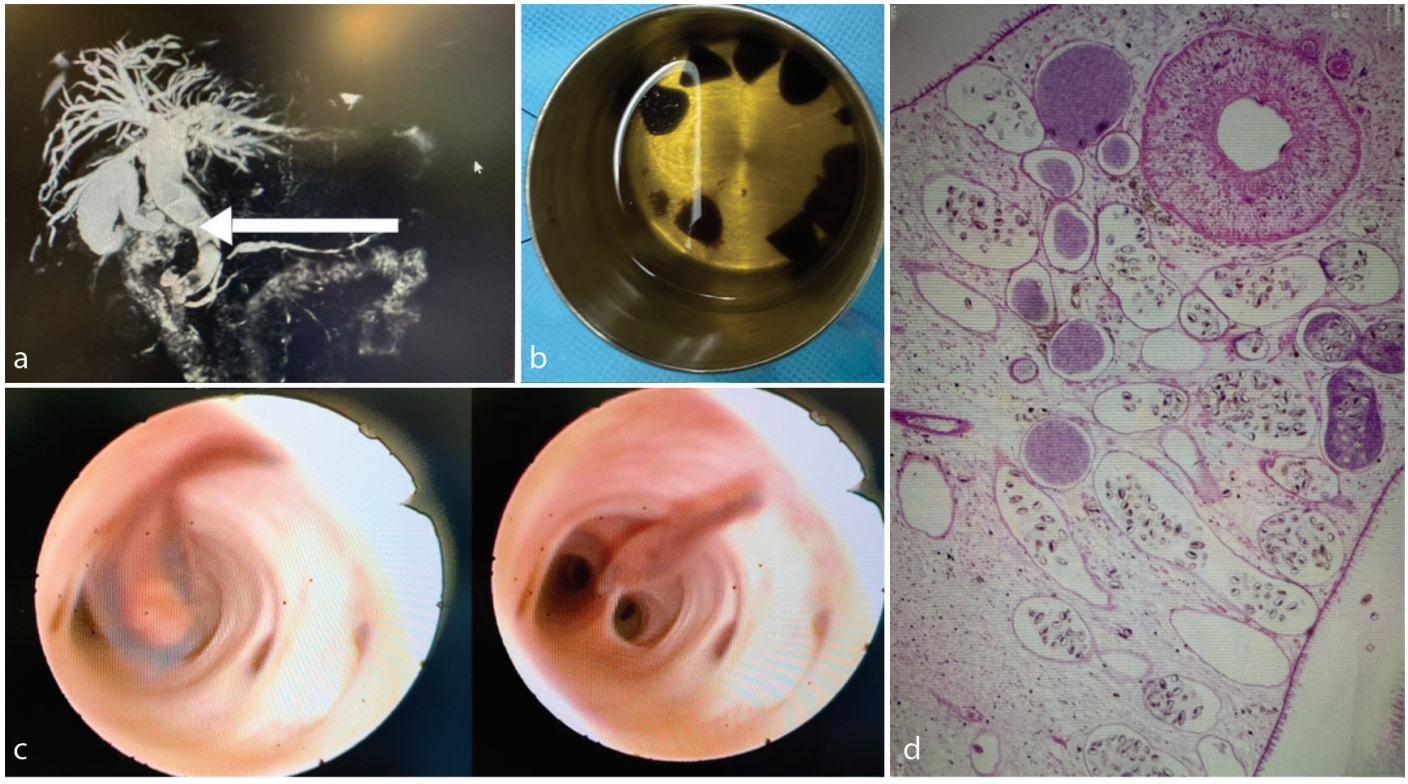

FIG. 1. (a) Magnetic resonance cholangiopancreatography shows multiple stones in the common bile duct (white arrow). (b) The stone retrieved during common bile duct exploration. (c) Direct choledochoscopic view of a live adult *Clonorchis sinensis* within intrahepatic bile duct. (d) Histopathological examination of the extracted worm confirms the diagnosis of clonorchiasis (hematoxylin and eosin staining).

Video 1. https://youtu.be/Xc-KhNWOPCQ

Video 2. https://youtu.be/Ul8O5UqxoWU

Informed Consent: Informed consent was obtained from the patient described in this report.

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