

Flattened oval brown objects extracted from the bile duct

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Quiz

A 61-year-old man with intermittent abdominal pain and jaundice was referred to a tertiary hospital. During the physical examination, the patient had a soft and flat abdomen with normal bowel sounds. However, he had an icteric sclera and yellowish skin discoloration.

Laboratory data revealed a white blood cell count of 8,000/mm³, eosinophils at 1.1%, hemoglobin at 16.3 g/dL, and a platelet count of 210×10³/mm³. Liver function tests revealed elevated levels of aspartate aminotransferase (244 IU/L), alanine aminotransferase (177 IU/L), and alkaline phosphatase (174 IU/L). The total bilirubin was 3.78 mg/dL and the direct bilirubin, 2.18 mg/dL. Abdominal computed tomography revealed a small high-density lesion in the distal portion of the common bile duct (CBD) and diffuse dilatation of the bile duct extending to the peripheral segments (Fig. 1).

Endoscopic retrograde cholangiopancreatography revealed a round filling defect in the dilated CBD (Fig. 2A). The objects causing the defects were extracted using a four-wire basket. The procedure initially retrieved a round pigmented stone, followed by several flattened oval objects with similar shapes extracted from the bile duct (Fig. 2B, C).

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What is the diagnosis and treatment?

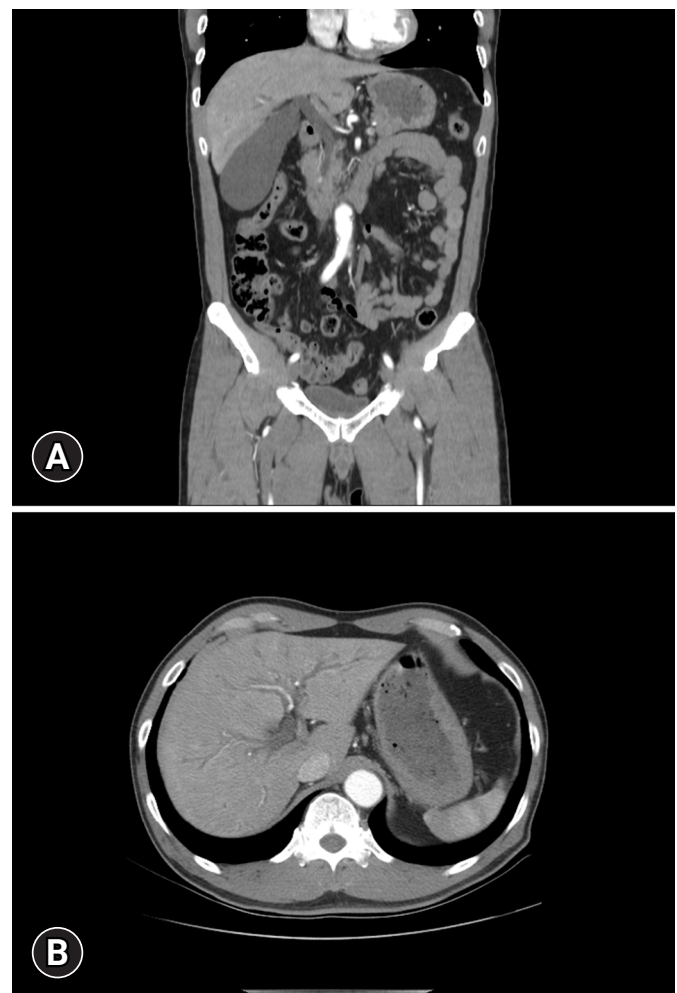


Fig. 1. Abdominal computed tomography findings. (A) Coronal view: a radiopaque lesion on the distal portion of the common bile duct. (B) Axial view: diffusely dilated bile duct from the peripheral to the distal portion.

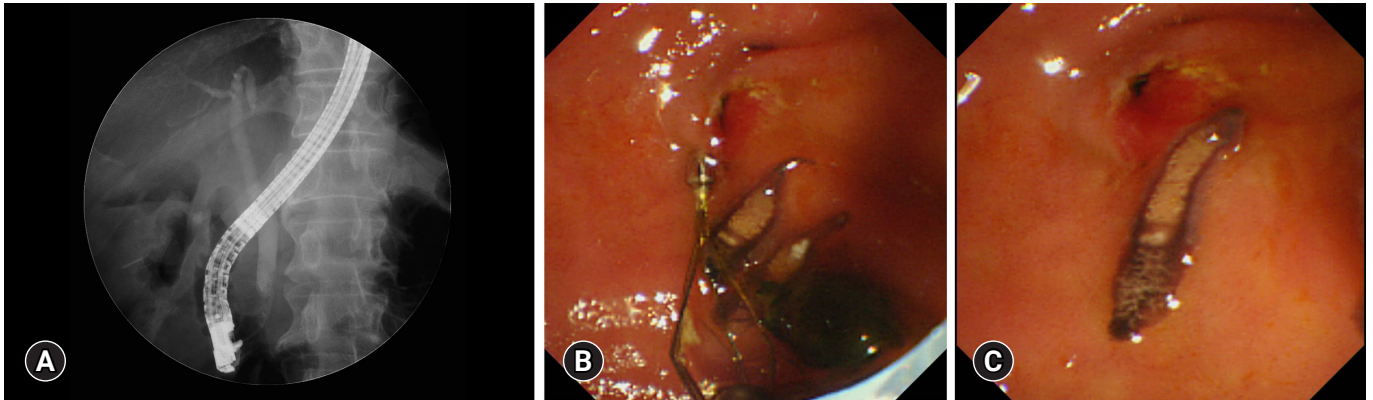


Fig. 2. Endoscopic findings. (A) Cholangiography showing round and irregular floating filling defects in the dilated common bile duct. (B, C) Multiple, yellow-colored oval objects with brown dots and rims are extracted from the bile duct.

Answer

The specimen was identified as a flat and elongated parasite resembling the shape of a leaf, with an average size of 15 mm (Fig. 3A, B). Both oral and ventral suckers were visible. The anterior part of the body prominently displayed the uterus, the central part contained the seminal vesicle, and a pair of highly branched testes were distinctly observed at the posterior end (Fig. 3C). The eggs were ovoid with an operculum and shoulder rim (Fig. 3D), which is characteristic of *Clonorchis sinensis*, a liver fluke.

C. sinensis is slender and leaf-shaped, with dimensions of 15 to 20 mm in length and 3 to 4 mm in width and is classified within the class Trematoda of the phylum Platyhelminthes. *C. sinensis* is predominantly found in Russia, Japan, China, Taiwan, Korea, and Southeast Asia, particularly in Vietnam.¹ The prevalence of infection by *C. sinensis* is influenced by the freshwater fish and shrimp species that harbor this parasite.

Although most patients with clonorchiasis exhibit asymptomatic or mild non-specific symptoms, similar to those of most human parasitic infestations, some experience increased frequency of palpable liver, nausea, indigestion, jaundice, diarrhea, or abdominal pain.² *C. sinensis* infection can cause acute or chronic cholangitis, cholecystitis, liver abscesses, and pancreatitis. It can also lead to an inflammatory response, epithelial hyperplasia, and occasionally cholangiocarcinoma, with a heightened incidence of cholangiocarcinoma in areas infested with flukes.^{3,4}

In clinical practice, clonorchiasis is often diagnosed incidentally through radiological screening, particularly during

abdominal ultrasonography conducted for other reasons, as the symptoms of *C. sinensis* infestation tend to be non-specific in most cases. Diagnostic modalities, such as magnetic resonance cholangiopancreatography and computed tomography, have significantly advanced the diagnosis of clonorchiasis. Changes attributed to *C. sinensis* infection include dilation, increased periductal echogenicity, and stricture of the intrahepatic bile ducts.⁵ Diffuse dilation is observed up to the peripheral margin of the liver in the intrahepatic bile ducts. However, the larger intrahepatic and extrahepatic bile ducts are usually not dilated or are minimally dilated. Diagnosis can be confirmed by the microscopic identification of eggs in stool samples. The formalin-ether sedimentation technique is more reliable than the direct smear method. Although serological ELISA can detect antibodies against adult *C. sinensis* antigens, it is sometimes unreliable owing to considerable cross-reactivity and low specificity.⁶

This case revealed mild intrahepatic bile duct dilation and a hyperechoic material in the distal CBD. Typical findings in *C. sinensis* include peripheral intrahepatic dilation of the bile duct and whitish floating materials in the gallbladder. The hyperechoic materials in the CBD were pigmented stones combined with parasitic bodies. After the endoscopic procedure, praziquantel was administered as an antiparasitic agent and the patient underwent cholecystectomy. Praziquantel is the drug of choice, and with the recommended standard regimen being 25 mg/kg taken three times per day.⁷ Other drugs such as triclabendazole, bithionol, albendazole, levamisole, and mebendazole, can also be considered.

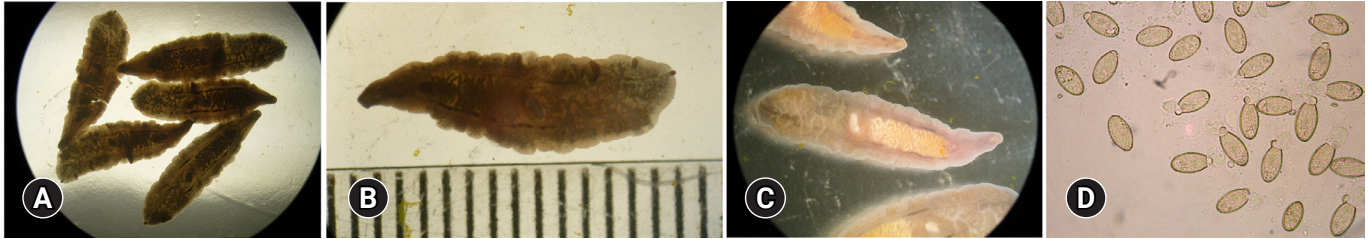


Fig. 3. Microscopic findings of the removed parasites. (A–C) Flat and elongated parasite, *Clonorchis sinensis* with an average size of 15 mm. (D) Eggs of *C. sinensis*.

Conflicts of Interest

Jae Min Lee is currently serving as a KSGE Publication Committee member; however, he was not involved in the peer reviewer selection, evaluation, or decision process of this article.

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