

# Radiological Findings of Recurrent Pyogenic Cholangiopathy

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## Abstract

Recurrent pyogenic cholangiopathy (RPC), formerly known as oriental cholangiopathy, is an entity characterized by stenosis of the intrahepatic and extrahepatic bile duct, formation of pigmented intraductal stones and dilation. Our objective was to discuss the presence of recurrent pyogenic cholangiopathy in our present presentation with radiological images. RPC is a destructive disease caused by the intrahepatic and extrahepatic bile ducts, recurrent attacks of cholangitis, stasis in the bile ducts, formation of abscesses, strictures, and dilatations, as well as parasitic infections in etiology. Patients with RPC produce most commonly *E. coli*, *pseudomonas*, *klebsiella*, *proteus* species, and anaerobes in biliary cultures. Sonographic and CT findings include intrahepatic or extrahepatic duct stones, extrahepatic duct dilatation, relatively intermediate or intrahepatic duct dilatation, focal or large area bile duct dilatation, increased periportal echogenicity, segmental hepatocytrophy, and existing gall stones. Stones in the intrahepatic biliary tract can be removed by interventional radiology or surgery.

**Keywords:** Charcot trio, cholangiopathy, magnetic resonance imaging, pigmented stone, ultrasound

## Introduction

Recurrent pyogenic cholangiopathy (RPC), formerly known as oriental cholangiopathy, is an entity characterized by intra and extrahepatic bile duct stenosis, intraductal pigmented stone formation, and dilatation (1). Disease can rarely be confused with malignancies in the bile ducts. Our objective was to discuss the presence of recurrent pyogenic cholangiopathy in our present presentation with radiological images.

## Case

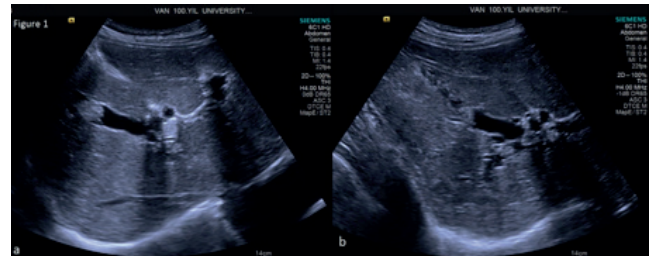
47-year-old patient; patient with known myelodysplastic syndrome and chronic renal failure has had a history of hospitalization several times in the last few months due to pain in the right upper quadrant, fever, jaundice (Charcot triad). She had been referred to our clinic with cholangitis and preliminary mass diagnosis at the external center, which she had previously referred to with similar complaints.

Ultrasonography revealed that the intrahepatic bile ducts were located in the central duct, proximal to the common bile duct, with an echogenic nodular appearance

(palestones) causing moderate dilation in the intrahepatic bile ducts (Figure-1a, 1b).

## Discussion

RPC is a destructive disease caused by the intrahepatic and extrahepatic bile ducts, recurrent attacks of cholangitis, stasis in the bile ducts, formation of abscesses, strictures, and dilatations, as well as parasitic infections in etiology. In Singapore, Japan, and Hong Kong, 2-5% of biliary stone diseases are associated with RPC (2). RPC is



**Figure 1a, 1b.** Ultrasonography revealed that the intrahepatic bile ducts were located in the central duct, proximal to the common bile duct, with an echogenic nodular appearance (palestones) causing moderate dilation in the intrahepatic bile ducts.

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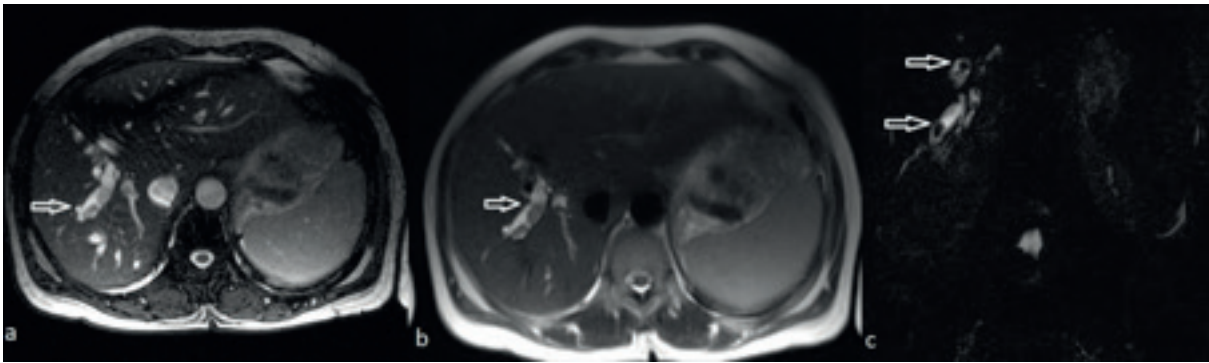
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**Figure 2a, 2b, 2c.** Magnetic resonance images; intrahepatic bile ducts are dilated, hyperintense, and hypointense nodular images are observed in the lumen.



**Figure 3.** The unenhanced thorax tomography images of the cross section showed a slight dilatation of the intrahepatic bile ducts in the right lobe of the liver.

characterized by recurrent episodes of abdominal pain, fever, and jaundice (Charcot triad) involving dilatation of the intra and extrahepatic channels and the feather with soft, pigmented stones. The cause of the disease is unknown, but the socioeconomic status, which is malnutrition, is more common in societies with low levels (3). The geographical coexistence of parasitic infection with recurrent pyogenic cholangitic biliary tract infection in regions where parasites are endemic should suggest that biliary tract parasitic infection plays a role in its pathogenesis. The three liver trematodes that most commonly infect humans are *Clonorchis sinensis*, *Opisthorchis* species and *Fasciola hepatica*. These organisms can cause disease by causing epithelial damage or bile duct obstruction in the biliary tract (4). Patients with RPC most commonly produce *E. coli*, *Pseudomonas*, *Klebsiella*, *Proteus* species, and anaerobes in biliary cultures (4). Sonographic and CT findings include intrahepatic or extrahepatic duct stones, extrahepatic duct dilatation, relatively moderate or intrahepatic duct dilatation, localized dilatation of lobar or segmental bile ducts, increased periportal echogenicity, segmental hepatic atrophy, and bile stones as currently present (5).

## Conclusion

Interventional radiology plays an important role in percutaneous biliary drainage of the affected liver segment, removal of pigment stones, balloon dilation of bile duct strictures, and repeated percutaneous procedures to clear pigment stones and sludge-like bile deposits. Lobectomy or segmentectomy operations can be performed when surgery is appropriate. Radiologists should keep RPC in mind because it can be mixed with tumors of the biliary tract.

### Data Availability

The data used to support this study are available from the corresponding author upon request.

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### Consent

Written informed consent was obtained from all participants involved in this study.

### Conflict of Interest

The author declares that the investigation was conducted in the absence of any commercial or financial relationship that could be construed as a potential conflict of interest.

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