Oriental Cholangiohepatitis (OCH): Radiologic Features

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Agenda

- Patient presentation
  - Initial presentation
  - Radiologic findings

- Oriental Cholangiohepatitis
  - Pathogenesis
  - Differential diagnosis
  - Relative Roles of Imaging Tests
  - Management
Our Patient: Initial Presentation

- 83-year-old female who has a history of having undergone cholecystectomy and choledochoduodenostomy

- Apparently, over the past five years she has been having repeated episodes of cholangitis manifest as fevers and right upper quadrant abdominal pain.
Our Patient: Biliary duct air on CT

- Scattered pockets of air are seen throughout the biliary tree
  - consistent with the patient's prior choledochoduodenostomy.
- Diffuse dilation of the intrahepatic biliary ducts
Our Patient: biliary duct dilatation on CT

- Scattered pockets of air are seen throughout the biliary tree
  - consistent with the patient's prior choledochoduodenostomy.
- Diffuse dilation of the intrahepatic biliary ducts

C+ 3mins delay
Our patient: biliary ducts dilatation with air on coronal CT
Our patient: filling defect on ERCP

- Air fills the intrahepatic biliary ducts.
- There is markedly dilated left intrahepatic duct which demonstrates irregular filling.
- There is an irregular filling defect at the right central intrahepatic biliary duct.
Oriental Cholangiohepatitis
Oriental Cholangiohepatitis

- Oriental cholangiohepatitis (OCH), also known as
  - Oriental cholangitis
  - recurrent pyogenic cholangitis
  - Intrahepatic pigmented stone disease

- characterized by recurrent attacks of fever, chills, abdominal pain, and jaundice (Charcot's triad of acute cholangitis)
Oriental Cholangiohepatitis: pathogenesis

- The bile ducts are markedly abnormal, characterized by extrahepatic and intrahepatic ductal dilatation with focal areas of stricturing in the intrahepatic biliary tree.
- The biliary wall is fibrotic with inflammatory cell infiltration.
Comparison our p’t #1:
OCH on ultrasound

- Extrahepatic bile ducts dilation: 85-100%
- Intrahepatic bile ducts dilation: 66-79%
- Stones (85-90%): are more echogenic than the liver parenchyma and adjacent tissue
Comparison our p’t #2: OCH on CT w/o contrast

- Full extent of ductal dilatation
  - Dilatation of the extrahepatic ducts is detected clearly.
  - Central, larger intrahepatic biliary dilatation
  - bile ducts tapering abruptly toward periphery
Comparison our p’t #3:
OCH on CT w/ contrast

- Localized dilatation from obstruction by stricture or stone.
  - Often the stones are hypodense detection rate: 63-81%
- Wall of the bile ducts may enhance
  - Acute cholangitic episode
Our patient: comparison OCH on CT w/o contrast

- stones are detected more easily on unenhanced scans, and enhanced CT scans are better in the detection of subtle intrahepatic biliary dilatation.

Comparison our p’t #4: OCH on ERCP

- Disproportionately severe dilatation of the extrahepatic ducts with mild or no dilatation of the intrahepatic ducts
  - Acute tapering
  - Straightening
  - Rigidity
  - Multiple focal strictures
  - Decrease in arborization
Our patient: ERCP

- There is markedly dilated left intrahepatic duct which demonstrates irregular filling.
- Irregular filling defect at the right central intrahepatic biliary duct.
- Stones! Strictures! Acute tapering!
Differential diagnosis of bile duct dilatation

- **Obstruction**
  - Stricture
  - Stones

- **No Obstruction**

**Neoplasms**
- Cholangiocarcinoma
- Gallbladder adenocarcinoma
- Pancreatic adenocarcinoma
- Metastasis

**Post-inflammatory**
- Pancreatitis
- Post radiation or chemotherapy

**Inflammatory**
- AIDS cholangiopathy
- Biliary parasites
- Primary sclerosing cholangitis

- Caroli disease
- Choledochal cyst
- Recurrent Pyogenic cholangitis
- Primary sclerosing cholangitis
DDx. 1: gallstones caused bile duct dilatation on CT

- Gallstones passed into the extrahepatic duct
  - dilatation mainly proximal to the stone
  - In OCH: dilated diffusely regardless of the level of the stone
DDx2: Clonorchiasis on CT

- Clonorchiasis
  - diffuse dilatation of the intrahepatic bile ducts with no or minimal dilatation of the large bile ducts
  - Periductal changes are more severe in clonorchiasis
  - Stones and flukes of *C. sinensis* can be differentiated easily.

*RadioGraphics, 28, 1307-1323,*
DDx3: cholangio CA. on CT

- Biliary obstruction by malignant tumors
  - cholangiocarcinoma and cancer of the pancreas or ampulla of Vater
  - The entire biliary tree proximal to the mass is dilated
  - *An obstructing mass can be detected!!*
DDx4: Sclerosing cholangitis on CT

- Sclerosing cholangitis
  - dilatation is focal and discontinuous
    (beaded appearance and serpiginous course)
DDx5: Caroli disease on CT

- Caroli disease
  - A developmental anomaly
    - segmental saccular dilatation of the intrahepatic ducts
    - Result in stasis, cholangitis, liver abscess, and stone formation
  - Occurs in a younger age group
  - Differentiation is possible by noting the dilated saccules in the intrahepatic bile ducts
Imaging Tests: us + CT

• Sonography
  – the main technique used for screening and diagnosis in suspected OCH

• CT is not a screening procedure, but it is recommended when
  – sectional imaging is mandatory but sonography is not confirmative or is equivocal
  – when space-occupying lesions complicate OCH
  – when hepatic resection is planned
  – When imaging guidance is needed for complex drainage procedures
Imaging Tests: Direct cholangiography

- Direct cholangiography
  - “Road map” in patients undergoing surgical intervention
  - Necessary for the detection of residual stones after surgery
  - Assessment of biliary stricture and choledochoenteric fistulas
  - Preprocedural biliary intervention
Management of our patient

- Treatment of acute complications, such as cholangitis
  - fluid resuscitation, antibiotics, and biliary drainage.

- Prevention of the long-term complications
  - Clearance of stones
  - Hepatic resection
Reference

- Uptodate, Oriental cholangiohepatitis
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