

An 8-year-old boy is brought to the clinic due to abdominal pain and dark urine. His parents report that the symptoms began a week ago. He has no history of fever, nausea, or vomiting and is eating normally. He has not had any previous abdominal pain or trauma. Vital signs are unremarkable. Examination shows scleral icterus and mild abdominal tenderness. An abdominal mass is palpable in the right upper quadrant. Laboratory results are as follows:

Bilirubin, total	6.5 mg/dL
Bilirubin, direct	3.4 mg/dL
Amylase	91 U/L
Lipase	152 U/L

Ultrasonography shows an extrahepatic cystic mass and a normal gallbladder. Which of the following is the most likely diagnosis in this patient?

- ☐ A. Biliary atresia
- ☐ B. Biliary cyst
- ☐ C. Cholangitis
- ☐ D. Pancreatic pseudocyst
- ☐ E. Viral hepatitis

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- ☐

A. Biliary atresia [5%]
- ☒

B. Biliary cyst [73%]
- ☐

C. Cholangitis [2%]
- ☐

D. Pancreatic pseudocyst [18%]
- ☐

E. Viral hepatitis [2%]

Proceed to Next Item

Explanation:

User Id:

Biliary cysts	
Pathogenesis	<ul style="list-style-type: none">Type I cysts (most common): extrahepatic, single cystic dilatation of the bile duct
Clinical manifestations	<ul style="list-style-type: none">Classic triad of pain, jaundice & palpable massMajority of cysts present at age <10 years

[Proceed to Next Item](#)

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Pathogenesis	<ul style="list-style-type: none">• Type I cysts (most common): extrahepatic, single cystic dilatation of the bile duct
Clinical manifestations	<ul style="list-style-type: none">• Classic triad of pain, jaundice & palpable mass• Majority of cysts present at age <10 years
Diagnosis	<ul style="list-style-type: none">• Visualization on ultrasonography• ERCP
Treatment	<ul style="list-style-type: none">• Surgical resection to relieve obstruction & prevent malignant transformation

ERCP = endoscopic retrograde cholangiopancreatography.

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A **biliary cyst** (or choledochal cyst) is a congenital dilatation of the biliary tree. These dilatations may be single or multiple and can be intra- or extrahepatic. The most common **type** of biliary cyst (type I) is a single, extrahepatic cyst. Biliary cysts can be congenital or acquired.

Classic signs of a biliary cyst include **abdominal pain**, **jaundice** (due to obstructive cholestasis), and a palpable **mass**. However, the clinical presentation varies with age. The majority of patients are age <10. Infants can have jaundice and acholic stools, a presentation that resembles biliary atresia. Older children may have **pancreatitis**. Adults with biliary cysts commonly present with vague epigastric or right upper quadrant abdominal pain or cholangitis. The diagnosis is generally made by **ultrasound** or other imaging; endoscopic retrograde cholangiopancreatography may be needed if obstruction is suspected. Biliary cysts can transform into cholangiocarcinoma. **Surgical resection** relieves the obstruction and reduces the risk of malignancy.

(Choice A) **Biliary atresia** presents in early infancy with obstructive jaundice and acholic stools and is fatal without intervention. This child is too old to have biliary

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(Choice A) **Biliary atresia** presents in early infancy with obstructive jaundice and acholic stools and is fatal without intervention. This child is too old to have biliary atresia. Additionally, the presence of a palpable mass and a normal gallbladder on sonography in this case are also inconsistent with biliary atresia.

(Choice C) Cholangitis can be a complication of biliary obstruction; adults with biliary cysts are particularly prone to cholangitis. However, the absence of fever makes acute cholangitis unlikely in this case.

(Choice D) Pancreatic pseudocysts are a complication of acute or chronic pancreatitis. A pseudocyst is characterized by a palpable, epigastric mass and elevated pancreatic enzymes. If large enough, they can obstruct the biliary tree and cause jaundice. However, this child has not had pancreatitis, and his mass is in the right upper quadrant.

(Choice E) Viral hepatitis could cause the acute onset of abdominal pain, dark urine, and jaundice. However, this child has not had fever, nausea, or vomiting, which generally accompanies acute viral hepatitis. Furthermore, viral hepatitis does not explain the ultrasound finding of a cyst.

Educational objective:

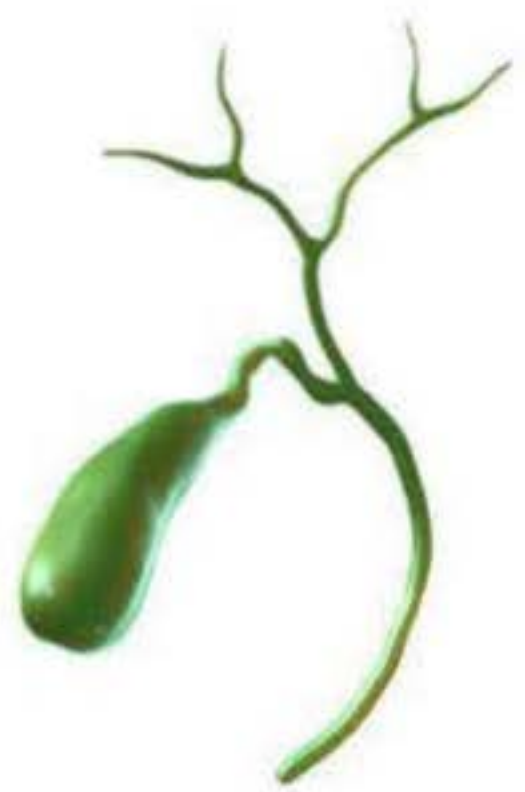
Biliary cysts are congenital or acquired dilatations of the biliary tree. They may be single or multiple, and extrahepatic or intrahepatic. Abdominal pain, jaundice, and a palpable mass are characteristic findings. Biliary cysts require surgical excision.

References:

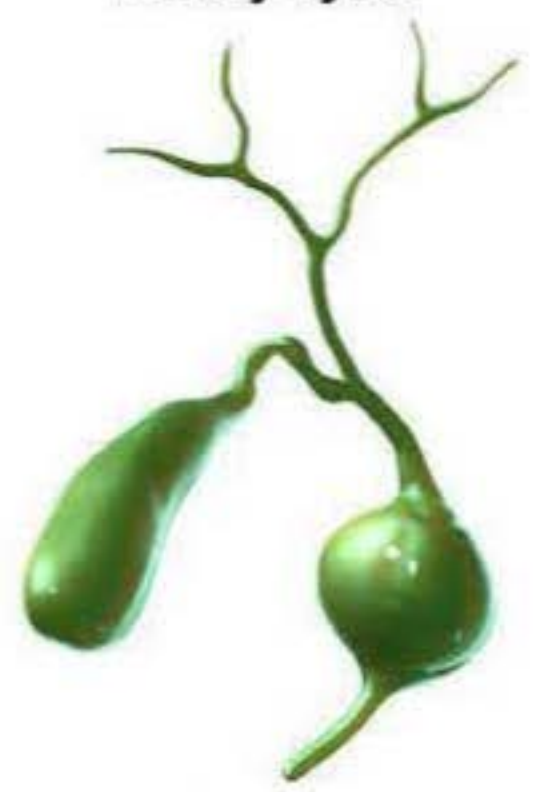
1. **Biliary cysts: a review and simplified classification scheme.**
2. **Diagnosis and management of choledochal cysts.**

Media Exhibit

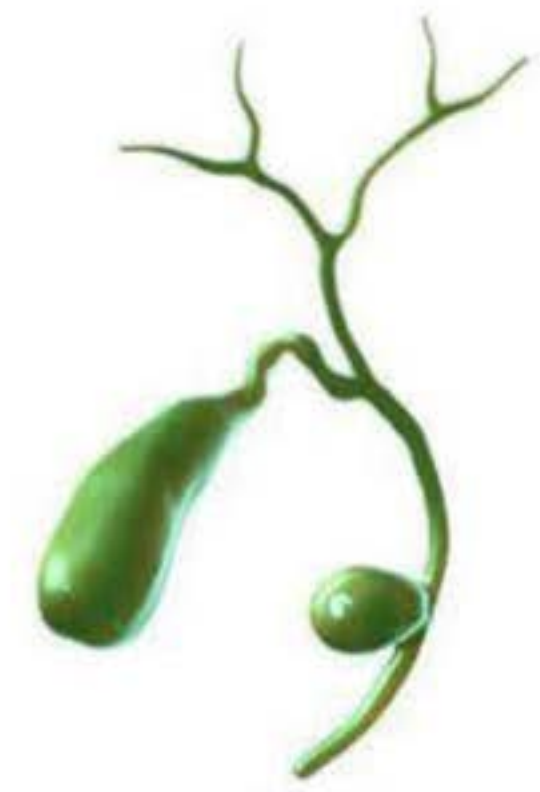
Biliary cysts



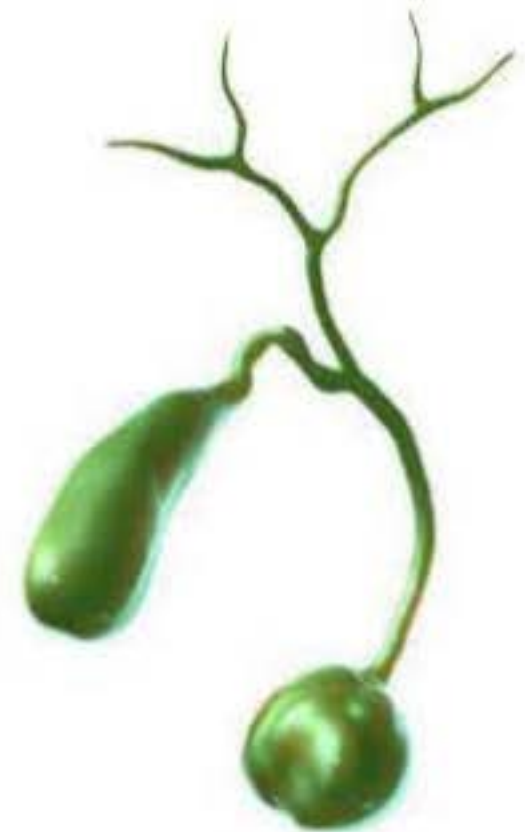
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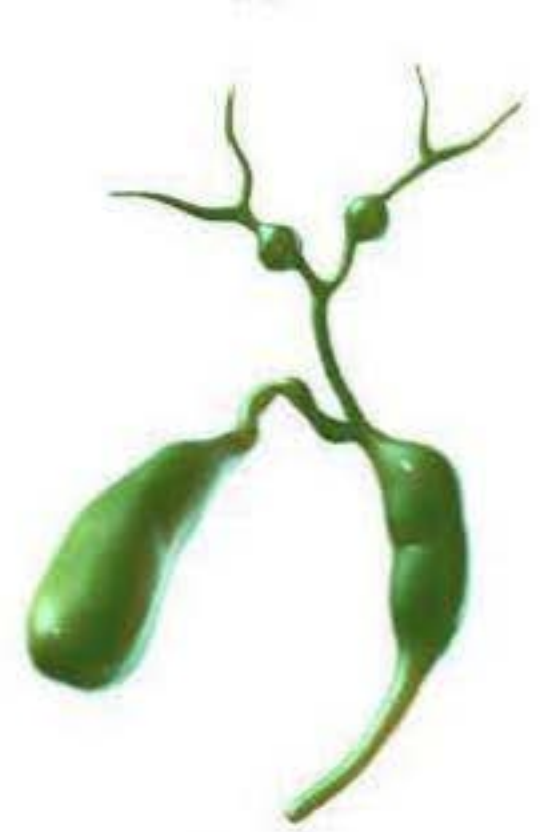
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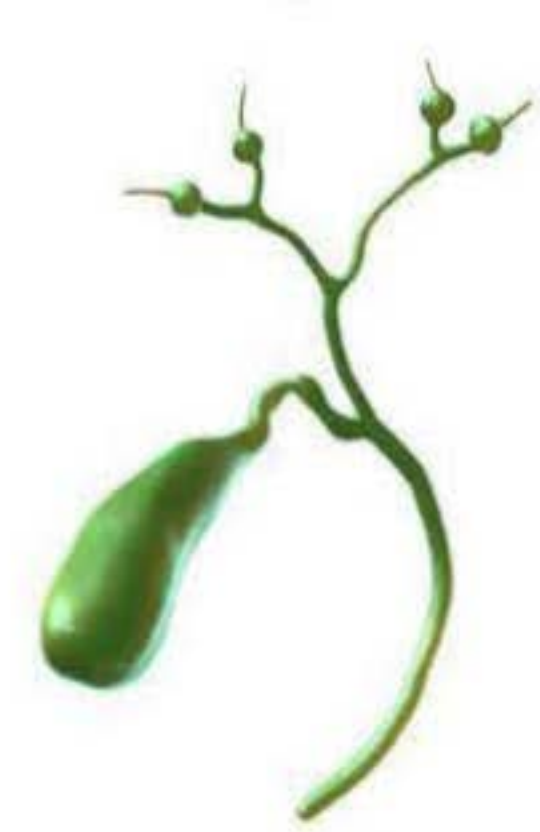
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Type III



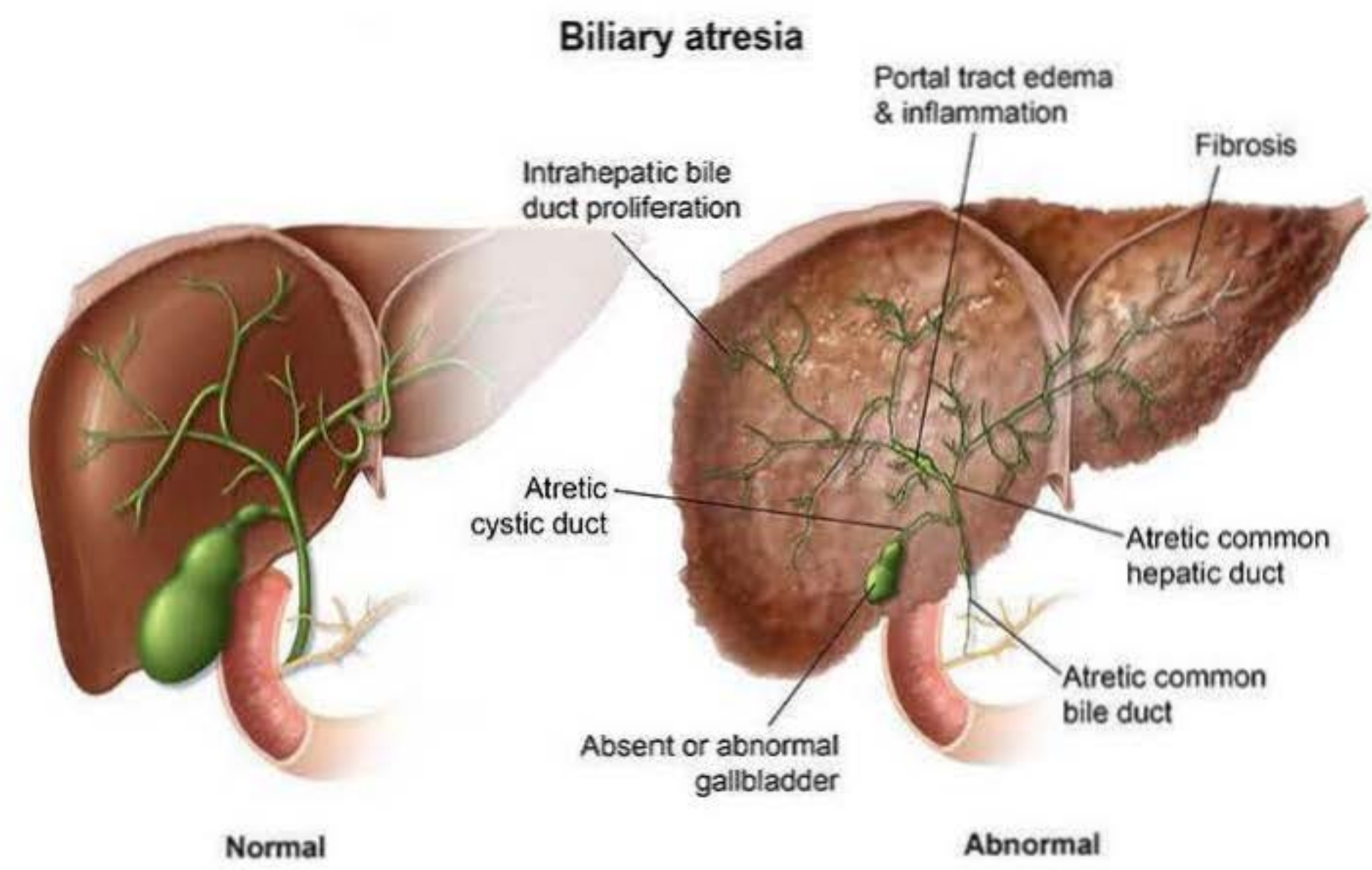
Type IV



Type V

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