Rudimentary Gallbladder Mimicking Choledochal Cyst

Pinky Thapar · Vishwanath Masurkar · Roji Philip ·
Muktachand Rokade · Abhay Dalvi

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Abstract Rudimentary gallbladder is a rare congenital anomaly. We present a case of an 18-year-old boy who was referred to us for surgical management of choledochal cyst. Clinical assessment and correlation of various investigations raised the possibility of rudimentary gallbladder rather than choledochal cyst. Laparoscopy evaluation confirmed the same and simple removal of the hypoplastic gallbladder cured him of his symptoms. Awareness of rare anomalies of the gallbladder and correlation of various imaging modalities aids in accurate diagnosis, thus avoiding major exploration.

Keywords Rudimentary gallbladder · Hypoplastic gallbladder · Choledochal cyst

Case Report

An 18-year-old male presented with intermittent episodes of pain in right hypochondrium since 2 years. Apart from dyspepsia, he had no history of jaundice, fever, loss of appetite, or weight. He had undergone right nephrectomy at the age of 1 month; details of which were not available. Prior to presenting to us, he had undergone a series of

investigations and was diagnosed to have choledochal cyst and advised for surgical intervention.

Examination

He was of average build with presence of transverse scar in the right hypochondrium and no other significant findings.

Investigations

Hematological and biochemical investigations were within normal limits. Ultrasonography reported an empty gallbladder fossa with a small noncommunicating biliary cyst and normal common bile duct. Magnetic resonance cholangiopancreatography (MRCP) suspected it to be a type 1 choledochal cyst (Fig. 1) and hepatobiliary iminodiacetic acid (HIDA) scan reported it to be a choledochal cyst arising from the cystic duct with absent gallbladder. We performed a 3-D ultrasound (Fig. 2) and computed tomography scan that indicated it to be a gallbladder remnant without any calculi or sludge. Reviewing all the previous investigations, we diagnosed it to be a shrunken gallbladder rather than a biliary cyst.

Management

We posted him for laparoscopic cholecystectomy. Intraoperative findings revealed a small, rudimentary, thin-walled gallbladder in the porta that was partly covered by the liver with an empty gallbladder fossa (Fig. 3a, b). Cystic duct was short and stout; it was clipped and gallbladder was dissected free. Postoperative course was uneventful. Histopathology showed a chronically inflamed gallbladder with mucosal ulcerations and fibrosis. He has no further attacks of pain and is fine at 18 months of follow-up.

P. Thapar · V. Masurkar · R. Philip · A. Dalvi
Department of Minimal Invasive Surgery, Jupiter Hospital, Thane,
Maharashtra, India

M. Rokade
Department of Radiology, Jupiter Hospital, Thane,
Maharashtra, India

P. Thapar (✉)
D-6, Vishram Dham, Veena Nagar Phase II, Mulund (West),
Mumbai-80, India
e-mail: pinkythapar71@gmail.com

Fig. 1 MRCP: Type 1 choledochal cyst

Discussion

The gallbladder lies on the undersurface of the liver between segments IV and V. Embryologically, it develops at approximately 2 weeks of fetal life by endodermal proliferation caudal to the developing liver. Anomalies of this process are fairly rare with respect to its size, shape, or number [1]. A rudimentary gallbladder is a small, nonfunctional, hypoplastic remnant with a size of about one tenth the normally developed gallbladder (Fig. 4). It is usually intrahepatic with a small duct and inconsistent arterial supply. There are very few reports (none from India) of this anomaly as compared with complete agenesis or absence of the gallbladder, which is more commonly reported.

Patients with associated anomalies (13 %) present early in childhood and many succumb due to the non-biliary anomalies. The rest of them remain asymptomatic their entire lives (54 %) or have symptoms (33 %)

Fig. 2 B-mode and 3-D ultrasound showing shrunken gallbladder

Fig. 3 **a** Intraoperative picture showing hypoplastic gallbladder in porta. **b** Intraoperative picture showing empty gallbladder fossa

compatible with hepatobiliary dysfunction such as right upper quadrant pain, nausea, dyspepsia, etc. warranting surgical intervention [2]. The diagnostic evaluation may be difficult, as these may mimic or be associated with other anomalies of the extrahepatic biliary tree; for example, choledochal cyst, biliary cyst, common bile duct agenesis/hypoplasia, etc.

Magnification in laparoscopy aids in identification of anomalous anatomy and precise dissection. Technically, slight modification in port placement for gentle but adequate liver retraction is required, since lateral retraction of miniature gallbladder alone does not suffice for achieving critical

Fig. 4 Specimen

view in Calot's triangle. Surgical removal of the gallbladder relieves patients of their symptoms, which are attributed to chronic inflammation of the nonfunctional rudimentary gallbladder.

Conclusion

Imaging modalities such as ultrasound, MRCP, and HIDA scan are useful diagnostic tools but require good interpretation and correlation of all the investigations. Awareness of rare pathologies and high index of suspicion in young symptomatic individuals are useful in appropriate diagnosis, especially if no gallstones are documented.

References

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