

Acute Cholecystitis of a Duplicated Gallbladder with Double Cystic Duct in a 10 Year Old Boy

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A 10 year-old boy was referred to the children's emergency service with complaints of jaundice, vomiting, fever and right upper quadrant abdominal pain. He had Murphy's sign during his physical examination, and a history of thalassemia minor. Laboratory data revealed acute cholecystitis with significant elevations of cholestatic liver enzymes. An abdominal ultrasound (US) (ACUSON Antares Siemens Medical Systems, Erlangen, Germany) showed two hydropic gallbladders which had thickened echogenic separated walls containing millimetric gallstones and sludge formation with two cystic ducts en-

tering the common bile duct (Figure 1). The common hepatic duct and common bile duct were enlarged. Magnetic resonance cholangiopancreatography (MRCP) (AERA 1.5T Siemens Medical Systems, Erlangen, Germany) showed a normal liver with two gallbladders with wall inflammations, two cystic ducts and dilated common bile and hepatic duct due to gallstones (Figure 2, 3). The patient underwent a percutaneous transhepatic cholangiography (PTC) for the management of obstructive cholestasis (Figure 4). The gallstones in the common bile duct were successfully removed into the duodenum. Biliary drainage was maintained. After the laparoscopic cholecystectomy, the patient recovered.

Gallbladder duplication is an uncommon anomaly of the biliary tree in the paediatric population. Duplicated gallbladders



FIG. 1. Double gallbladders with double cystic ducts (white arrows) with inflamed walls (red arrows), sludge formation (stars) and stone (small black arrow) are shown on coronal ultrasound image

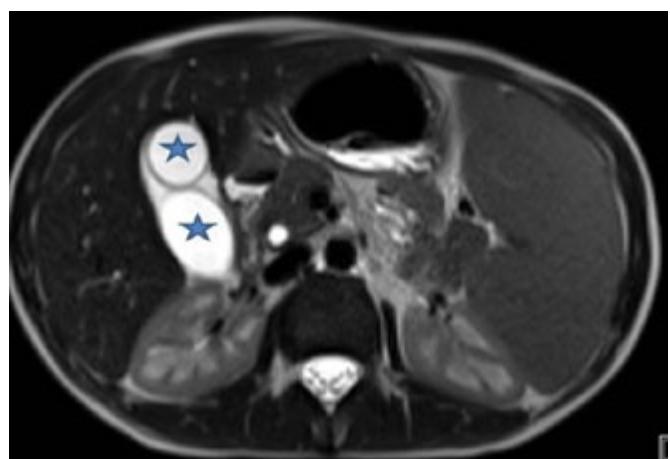


FIG. 2. Axial T2 HASTE image of MRCP shows two hydropic gallbladders with separated-inflamed walls (stars)

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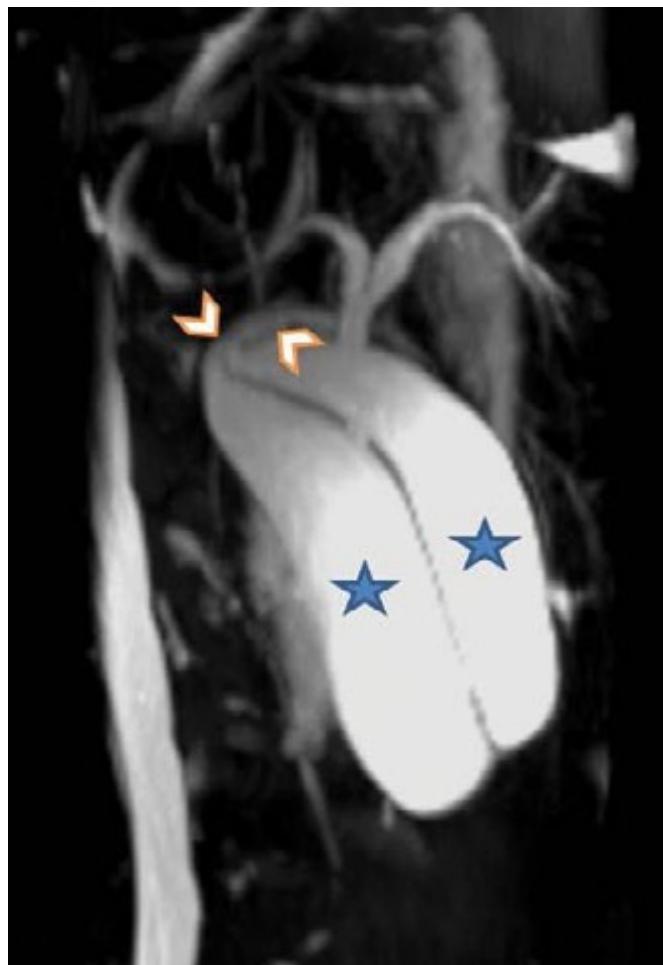


FIG. 3. 3D Coronal MIP image of MRCP demonstrates duplication of gallbladder (stars) with two cystic ducts (arrow heads)

are classified into subgroups based on the anatomy of the gallbladder and biliary ducts. “Ductular” type, in which cystic ducts are separately joined to the common bile duct, is the commonest variant of the gallbladder (1). Acute or chronic cholecystitis is observed due to stone or sludge formation; also, fistulas, torsion, papilloma or carcinoma may occur (2). US is the first line imaging technique for diagnosing the duplication anomalies (2). MRCP is a non-invasive imaging modality without X-ray exposure which can give an accurate diagnosis of duplication anomaly both in adults and children (3-5). PTC is a therapeutic invasive technique where stones or sludge formation can be removed to the duodenum or extracted in order to maintain biliary drainage in the same session (5). Surgical resection of duplicated gallbladders should be considered in symptomatic and complicated patients. In conclusion, a multimodality approach including PTC should also be considered to establish the diagnosis preoperatively and to maintain biliary drainage in obstructive cholestasis in children.

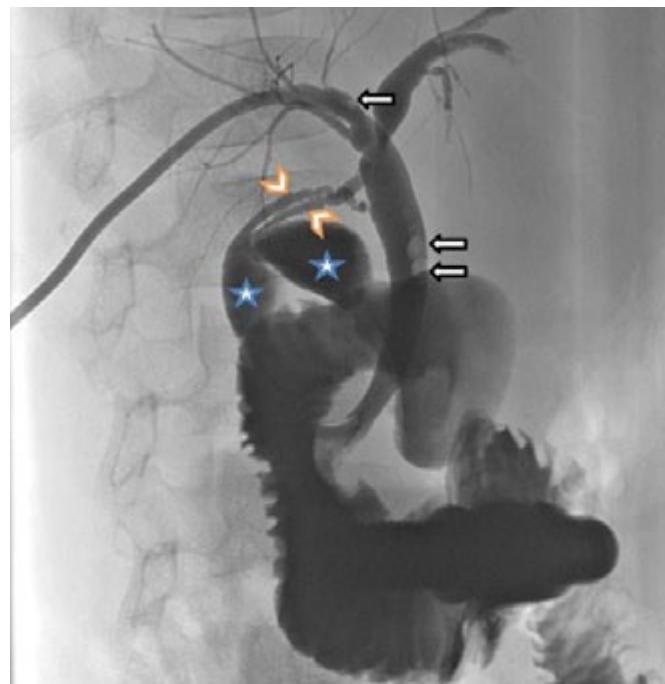


FIG. 4. Stones (white arrows) in enlarged common hepatic and common bile duct are demonstrated on PTC. Duplication of gallbladders (stars) with double cystic ducts (arrow heads) are shown

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Informed Consent: Written informed consent was obtained from the patient's parents for the publication of this case and any accompanying images.

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