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An adolescent girl with belly pain: One gallbladder too many?

Phillip Minar¹, Maria H. Alonso², Milton T. Smith³, and Rohit Kohli¹

¹Department of Pediatrics, Division of Gastroenterology, Hepatology, and Nutrition, Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio

²Department of Pediatric Surgery, Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio

³Division of Gastroenterology, Hepatology, and Nutrition, Department of Medicine, University of Cincinnati College of Medicine, Cincinnati, Ohio

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A 15 year old previously healthy girl presented with 3 months of right upper quadrant abdominal pain, persistent nausea, and seven kg weight loss. Her exam revealed right upper quadrant and epigastric tenderness. Laboratory investigations, including bilirubin and liver enzymes, were normal. An abdominal ultrasound revealed a contracted gallbladder and a small ovoid structure in the right upper quadrant suggesting a possible choledochal cyst. Magnetic resonance cholangiopancreatography (MRCP) better defined these lesions as a 2.8 × 2 × 2 cm "ovoid" cystic structure (small arrow in Figure 1) and a gallbladder (larger arrow Figure 1). On endoscopic retrograde cholangiopancreatography (ERCP) both structures filled with contrast with two completely separate cystic ducts attached to the common duct (Figure 2 and online-only images available at <http://links.lww.com/MPG/A94>).

She continued to be symptomatic and subsequently had a laparoscopic cholecystectomy. The intraoperative cholangiogram confirmed the ERCP findings. Accordingly, both gallbladders were removed. Examination of the resected specimens by histology confirmed two gallbladders and entirely separate cystic ducts (see online-only images).

Duplicated gallbladder is a rare anomaly of the biliary system with the reported incidence between 1 in 3800.¹ The differential diagnosis for a cystic structure in the gallbladder region includes choledochal cyst, folded gallbladder, gallbladder diverticulum, focal adenomyomatosis, fibrous or vascular band and duplication of any other structure in the biliary system². Although both ultrasound and MRCP are utilized in the evaluation of gallbladder anomalies, ERCP remains the gold standard to define this biliary tree abnormality³.

Corresponding Author Information Rohit Kohli, M.B.B.S, M.S., Department of Pediatrics, Division of Gastroenterology, Hepatology, and Nutrition, Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio, 45229, USA. rohit.kohli@cchmc.org; Phone: 513-636-8948; Fax: 513-636-5581.

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Causey et al. recently published a similar case and contend that defining the type of gallbladder duplication (based on the Harlaftis classification⁴ of multiple gallbladders) will aid in the selection of operative technique⁵. They reason that laparoscopy can be used for type 1 (the split primordial group, sharing a single cystic duct) and a traditional open approach should be used for type 2 (accessory gallbladder arising from separate primordium with two discrete ducts)⁵. The consensus from multiple case reports has been to only operate on symptomatic patients and remove both gallbladders given the risk of continued symptoms and non-functionality of either structure.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Figure 1. Magnetic resonance cholangiopancreatography (MRCP) noted a $2.8 \times 2 \times 2$ cm “ovoid” cystic structure (small arrow) and gallbladder (large arrow).

Figure 2. ERCP shows two completely separate cystic ducts (white arrows) attached to the common bile duct as well as two distinct gallbladders.

Figure 3.
Intra-operative image showing two separate cystic structures (white arrows).