



# Accessory left bile duct draining into the stomach: a case description

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Submitted Jun 13, 2023. Accepted for publication Aug 10, 2023. Published online Aug 29, 2023.

doi: 10.21037/qims-23-865

**View this article at:** <https://dx.doi.org/10.21037/qims-23-865>

## Introduction

The presence of an accessory bile duct draining into an atypical site is a rare occurrence (1). The accessory bile duct is clinically relevant for preoperative or preprocedural planning and is known to be associated with tumors and unusual gastrointestinal (GI) symptoms (1,2). Among documented bile duct anomalies, an accessory bile duct draining into the stomach is particularly rare (1). Herein, we present the case of a patient with an accessory left bile duct draining into the stomach.

## Case presentation

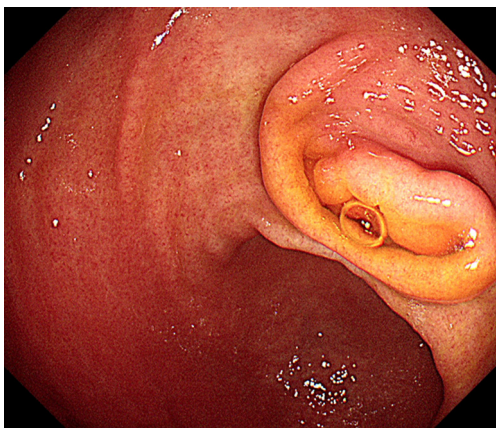
All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee(s) and with the Helsinki Declaration (as revised in 2013). Publication of this case report and accompanying images was waived from patient consent according to the Severance Hospital institutional review board.

A 48-year-old woman was admitted to our academic medical institution with a suspected gastric submucosal tumor, detected on endoscopy during a routine checkup. The patient had no symptoms, nor any medical or

surgical history. The results of physical examination were unremarkable, and laboratory tests performed upon admission showed no abnormalities.

Endoscopy revealed a 30 mm elevated lesion at the lesser curvature of the stomach, covered by normal gastric mucosa and an oval-shaped orifice with bile (*Figure 1*), which was a suspicious finding for an abnormal trajectory of the accessory bile duct. Endoscopic surface biopsy was performed and the pathological diagnosis was foveolar epithelium only. Contrast-enhanced computed tomography (CT) revealed a tubular structure with air bubbles originating from the left hepatic duct and extending to the gastric wall (*Figure 2*). T2-weighted image of magnetic resonance imaging (MRI) revealed a tubular cystic lesion arising from the left hepatic duct and opening into the lesser curvature of the stomach. A gastric pseudotumoral lesion or wall thickening measuring approximately 2.5 cm was observed at the opening into the lesser curvature side of the stomach (*Figure 3*). Magnetic resonance cholangiopancreatography (MRCP) revealed an accessory bile duct which connected the left hepatic duct and stomach (*Figure 4*). On contrast-enhanced CT, MRI, and MRCP, the length and diameter of the accessory bile duct were 8 and 0.7 cm, respectively. There were no other abnormalities on CT, MRI, and MRCP. Since the patient was asymptomatic;

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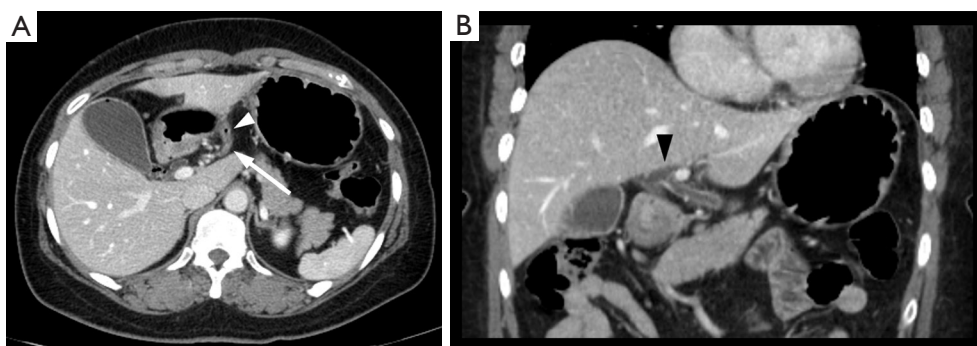
**Figure 1** Endoscopy showed a 30 mm elevated lesion at the lesser curvature of the stomach, covered by normal gastric mucosa and an oval-shaped orifice with bile.

she did not receive medical or surgical treatment.

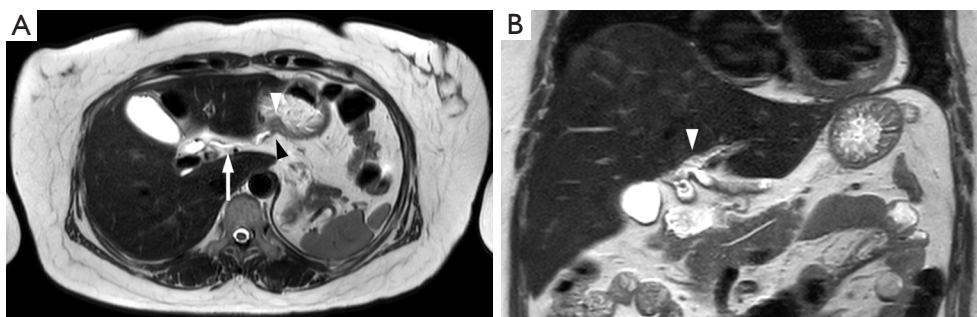
### Discussion

Biliary tract anomalies, such as accessory bile ducts opening into the extrahepatic bile ducts or gallbladder, are frequently encountered during medical imaging procedures (3). Other than the duodenal papilla, an opening of the biliary system into the upper GI tract via the accessory bile duct is exceedingly rare (4). In this case, we discovered an anomalous drainage of the left accessory bile duct into the lesser curvature of the stomach.

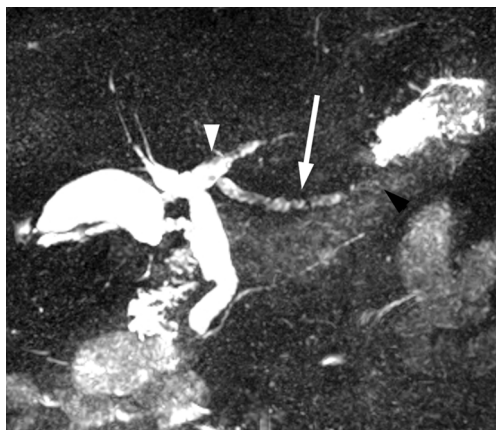
Obtaining accurate diagnosis for the accessory bile duct on endoscopy proved to be challenging. An anomalous opening of the accessory bile duct may mimic submucosal



**Figure 2** Contrast-enhanced computed tomography of accessory left bile duct draining into the stomach. (A) Axial image of contrast-enhanced computed tomography revealed a tubular structure (white arrow) with an air bubble (white arrowhead). (B) On coronal image of contrast-enhanced computed tomography, a tubular structure was originating from the left hepatic duct (black arrowhead) and extending to the gastric wall.



**Figure 3** Magnetic resonance imaging of accessory left bile duct draining into the stomach. (A) Axial T2-weighted image of magnetic resonance imaging demonstrated a tubular cystic lesion (white arrow). A gastric pseudotumoral lesion or wall thickening (white arrowhead) was observed at the opening (black arrowhead) into the lesser curvature side of the stomach. (B) On coronal T2-weighted image of magnetic resonance imaging, a tubular cystic lesion was arising from the left hepatic duct (white arrowhead).



**Figure 4** Magnetic resonance cholangiopancreatography of accessory left bile duct draining into the stomach. Magnetic resonance cholangiopancreatography image showed an accessory bile duct (white arrow) connecting the left hepatic duct (white arrowhead) and the stomach (black arrowhead).

tumors on endoscopy, potentially leading to misdiagnosis (1). Endoscopic ultrasound may be used to identify a tubular hypoechoic structure within a submucosal papillary mass; however, it lacks the ability to trace the tubular structure outside the gastric wall, hampering a definitive diagnosis (1). An accurate diagnosis can be achieved by employing other imaging modalities, such as CT, MRI, and MRCP. Among the aforementioned modalities, MRCP emerged as the most valuable tool for visualizing drainage path and opening morphology of the bile duct, making it the best choice for diagnosing anomalous openings of the accessory bile duct (1).

Although it may be an asymptomatic anatomic variance, an accessory bile duct may also cause various complications, such as calculous formation, cholangitis or cholecystitis. Rarely, it may lead to liver abscess, pancreatitis, pancreatic cancer, or gastric cancer (3,5,6). Gastric cancers have been reported more frequently in patients with an accessory bile duct opening into the stomach (6). This may be attributed to prolonged exposure of gastric mucosa to duodenal juice, bile, and pancreatic juice, resulting in atrophic gastritis and predisposing affected individuals to the development of gastric cancer (6). The relationships between these factors, however, remain uncertain (6).

In conclusion, we detected a 30 mm elevated gastric lesion with an oval-shaped orifice containing bile on endoscopy. Using CT, MRI, and MRCP, we correctly diagnosed the patient with an accessory left bile duct draining into the stomach. It is therefore important to consider the presence

of this anomaly and utilize imaging modalities to confirm the diagnosis.

### Acknowledgments

*Funding:* This research was supported by Basic Science Research Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Education (No. RS-2023-00244520).

### Footnote

*Conflicts of Interest:* All authors have completed the ICMJE uniform disclosure form (available at <https://qims.amegroups.com/article/view/10.21037/qims-23-865/coif>). The authors have no conflicts of interest to declare.

*Ethical Statement:* The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee(s) and with the Helsinki Declaration (as revised in 2013). Publication of this case report and accompanying images was waived from patient consent according to the Severance Hospital institutional review board.

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**Cite this article as:** Shin H, Kim M, Lee S. Accessory left bile duct draining into the stomach: a case description. *Quant Imaging Med Surg* 2023;13(10):7352-7355. doi: 10.21037/qims-23-865