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Isolated omental duplication cyst with respiratory epithelium & pancreatic glands: Case report & review of literature

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ABSTRACT

Duplication cysts are uncommon congenital anomalies. They are usually in communication with or are attached to an adjacent segment of bowel. Rarely are they completely isolated from the gastrointestinal tract. To date, there have been 29 reported cases of non-communicating or isolated duplication cysts. Few contain respiratory epithelium and pancreatic glands. Patients may present with pain, an acute abdomen, bleeding or malignant degeneration. Differential diagnoses for an isolated cystic mass should include duplication cyst in the pediatric population. Recognition and awareness of these anomalies and their various presentations can aid in management. The unusual case of an isolated duplication cyst containing respiratory and pancreatic tissue, found within omentum, is presented with a review of the literature.

Alimentary tract duplication cysts are rare congenital anomalies, occurring 1 per 100,000 births commonly associated with the small intestine (47%), followed by colon (20%), esophagus (17%), stomach (8%), and duodenum (2%) [1–4]. Many duplication cysts communicate with or are attached to the gastrointestinal tract, sharing a common wall and vascular supply. Most are symptomatic and found within the first 2 years of life with rare presentations in adulthood [5]. Symptoms may be vague abdominal pain, bloating, and distention with complications such as bleeding, obstruction, infection, malignancy or perforation. They are described as tubular or cystic, occurring at any level in the alimentary tract. Rarely are duplications completely isolated and separate from bowel. To date, there have been 29 reported cases of intra-abdominal, non-communicating or isolated duplication cysts. Few cases containing pancreatic tissue have been reported [6]. Only 1 case of an isolated retroperitoneal duplication cyst was reported to contain pancreatic tissue [7]. An awareness of duplication cysts and their potential complications is important within the pediatric population presenting with abdominal complaints and a cystic mass on imaging. We present the first case of an isolated omental duplication cyst containing both pancreatic glands and respiratory epithelium, removed laparoscopically.

1. Case report

A 16-year-old female presented with a one-year history of intermittent right upper abdominal pain, which worsened during sports and running. She denied symptoms of nausea or vomiting. She had a normal appetite and regular bowel movements. On physical exam, she was tender to deep palpation in the right upper quadrant without peritoneal signs. A mass was not felt. Her laboratory exams were unremarkable. A computerized tomography (CT) scan demonstrated a 3.2 cm × 3.3 cm × 2.7 cm low-density cystic mass interposed but separate from the inferior pole of the right kidney, right hepatic lobe, and hepatic flexure of colon with fat preservation between critical structures and the cystic mass (Fig. 1). Follow-up magnetic resonance cholangiopancreatography (MRCP) of the abdomen revealed similar findings without communication to the enteric, hepatobiliary or pancreatic systems.

Due to her symptoms and inability to rule out a malignancy, she was taken to the operating room for a diagnostic laparoscopy revealing a well-circumscribed, smooth-walled, cystic structure located in the right upper quadrant and embedded within the greater omentum, sharing a single vascular pedicle (Fig. 2). There were no ascites, adhesions or peritoneal lesions. Her liver, bowel,

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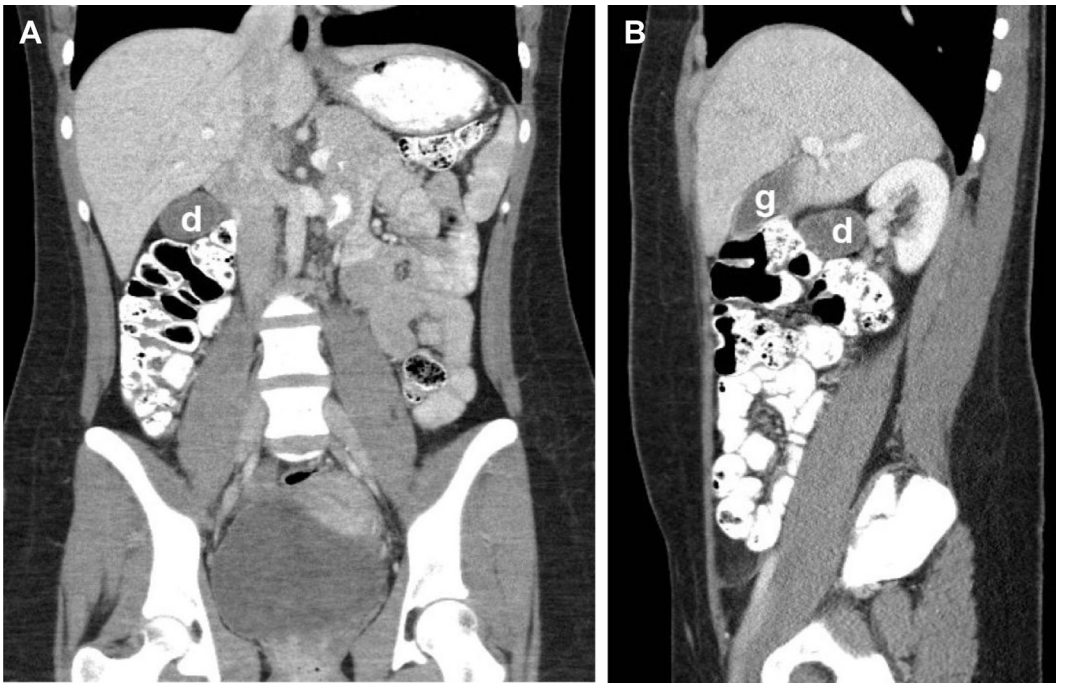

Fig. 1. CT abdomen, coronal (A) and sagittal (B) views demonstrating 3.2 cm × 3.3 cm × 2.7 cm low-density cystic structure separate from the right kidney, hepatic lobe, and colon with fat preservation, (g = gallbladder, d = duplication cyst).

appendix, and adnexal structures appeared healthy. The cystic mass was completely separate from the liver, gallbladder, duodenum and colon. A periumbilical 12 mm port and three 5 mm working ports placed in triangulation were used to assist in retraction and dissection, excising the mass laparoscopically. The periumbilical port site was enlarged to retrieve the freed cystic structure. Ex vivo, the mass was opened sharply revealing a clear gelatinous substance that was contained within a thick, smooth, muscular wall.

Pathology was consistent with a benign enteric duplication cyst. Histologically, low-power examination showed dual smooth muscle layers with an intact Auerbach's plexus, and several distinct mucosa types. High-power views displayed respiratory-type ciliated, pseudostratified columnar epithelium as well as exocrine pancreatic-type acini with cytoplasmic zymogen granules (Fig. 3). Mucinous-type epithelium can also be seen interspersed among the pancreatic-type epithelium. Postoperatively, the patient recovered well.

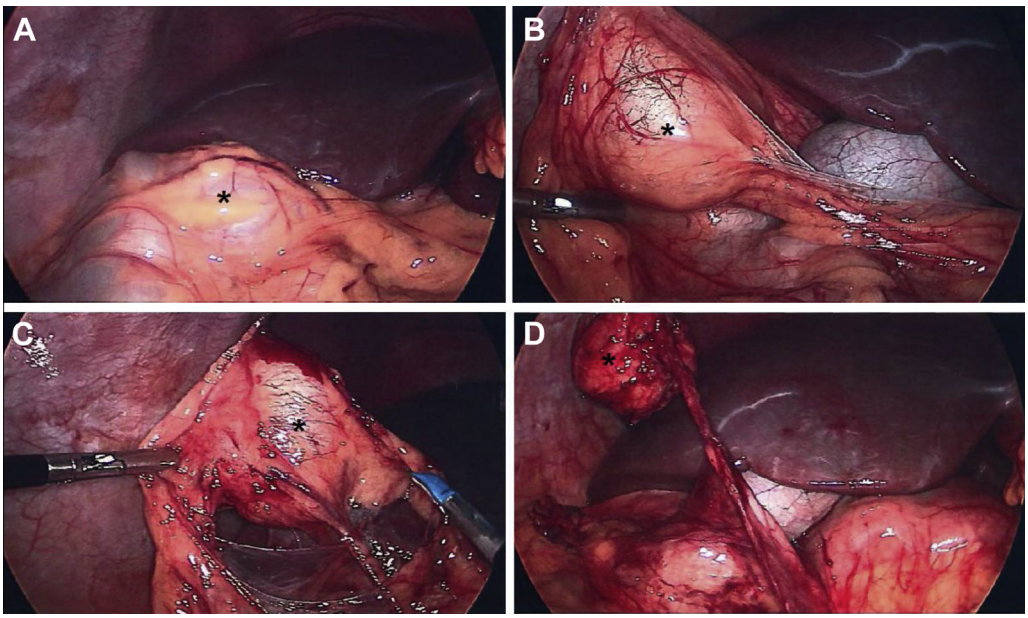

Fig. 2. Laparoscopic views of the duplication cyst (*) between liver and colon (A), embedded within omentum (B&C), sharing a single vascular pedicle after circumferential dissection (C&D).