Gastric Duplication Cyst in an Adult: Case Report

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Abstract. Duplication cysts of the stomach are uncommon findings in adult patients and diagnosis is often overlooked. Presenting symptoms are often non-specific, but complications, including chronic infections, ruptures or carcinoma arising in the cyst, are rare. We report a case of a non-communicating cyst of the stomach in a 67-year-old man.

Gastric duplication cysts (GDCs) are uncommon congenital anomalies and are rarely diagnosed in adults. Alimentary tract duplication cysts most frequently affect the ileum (35%), the oesophagus (19%), the jejunum (10%), the stomach (9%) and the colon (7%) (1). In 35% of patients, GDCs coexist with other congenital abnormalities such as annular or heterotopic pancreas, or vertebral anomalies such as spina bifida (2).

On consideration of the fact that these cysts are usually asymptomatic or, in any case, have no specific signs and symptoms, diagnosis is frequently made post-operatively (3).

We present a case of a non-communicating cyst of the stomach in a 67-year-old man, and describe the endoscopic appearance, as well as findings on computed tomography (CT) and pathological examination.

Case Report

A 67-year-old man had a 2-year history of epigastric discomfort worsening after meals. On physical examination, there was no evidence of a palpable abdominal mass. A gastroscopy was performed, showing an external swelling on the gastric fundus, with normal overlying mucosa (Figure 1). Ultrasonography confirmed the presence of a 6-cm ovoid mass, posterior to the gastric fundus, with displacement of the aorta medially, the spleen laterally and the left kidney inferiorly. A CT scan indicated that the lesion had clear-cut, regular margins, but could not be completely separated from the gastric fundus (Figure 2). After endovenous administration of contrast medium, there was no enhancement, even at a tardy stage. Pre-operative differential diagnosis included adrenal cortical adenoma, gastrointestinal stromal tumour (GIST) and duplication cyst of the stomach. At surgery, the mass appeared adherent to the muscle coats of the posterior wall of the gastric fundus and, local excision not being feasible, the surgeon opted for an upper, polar gastric resection with termino-lateral oesophago-gastric anastomosis and posterior folding of the residual fundus against reflux. No other duplication of the gastrointestinal tract was detected.

Macroscopically, a unilocular cystic mass, measuring 7x5x4 cm, was intimately adherent to the posterior wall of the gastric fundus. Opening of the cyst revealed abundant brown mucoid fluid. The cyst wall (0.4 cm in thickness) was grey-white and firm. Histologically, it consisted of mucosa, subepithelial connective tissue and one to two layers of smooth muscle with an outermost thin fibrous capsule. The largest portion of the mucosa was lined by gastric foveolar epithelium with occasional pyloric glands (Figures 3A and 3B). Small areas of erosion and ulceration, accompanied by an inflammatory cell infiltrate, were also present. Heterotopic tissues such as pancreas, ciliated bronchial epithelium and cartilage were not detected.

The patient had an uneventful recovery and is well and symptomless 6 months post-operatively. An X-ray with contrast medium, performed 6 weeks after surgery, demonstrated efficient functioning of the anastomosis and correct gastric outlet (Figure 4).

Discussion

GDCs are uncommon developmental anomalies found primarily in children, being rarely diagnosed in adults.
Kremer et al. described 9 cases, with only one adult patient (4). The presenting symptoms include epigastralgia, vomiting and anaemia. On physical examination, a palpable abdominal mass is most typically found. At times, there may be complications such as gastric outlet obstruction, gastric perforation and carcinoma arising in the cyst (5, 6). Recurrent episodes of pancreatitis can occur whenever the duplication is contiguous with the stomach (7).

Most gastric duplications are localised along the greater curvature. They may have a cystic or tubular configuration and may or may not communicate with the gastric lumen. Non-communicating cysts are more frequently encountered and can be identified as intramural defects with an irregular profile of the stomach at barium contrast radiography. Endoscopy may reveal a gastric mass with intact, erythematous or ulcerated overlying mucosa (8-10). CT and ultrasonography demonstrate the fluid content within the cyst, the former being the best method for studying such malformations and for establishing their size and connection with adjacent organs.

Communicating cysts are extremely rare and easy to diagnose as they usually fill with barium during a barium swallow. CT may even reveal a double compartment stomach, directly visualising the thickness of the duplication wall. The site of communication may also be located outside the stomach, in the duodenum or the oesophagus (11).
Figure 3. (A) Low-power view of duplication cyst of the stomach. (B) High-power view with foveolar epithelium and pyloric glands, supported by a loose, relatively acellular lamina propria.
In order to make a correct diagnosis, the cyst must be intimately connected with the gastric wall, surrounded by at least one muscle layer adherent to the muscle coats of the stomach (often without a cleavage plane between the cyst and the stomach) and lined with gastric mucosa, at times associated with islands of heterotopic intestinal, respiratory or pancreatic tissue (12).

Treatment of GDC is surgical. Where possible, the cyst is excised, or else, depending on the localisation, proximal or distal gastric resection may be performed.

References


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