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Gastric Duplication Cyst Presenting as Gastric Outlet Obstruction in a 7-Year-Old Boy: A Case Report

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Abstract

Gastric duplication represents about 2% - 9% of gastrointestinal tract duplication. Its diagnosis is easily missed given its multiple unconventional clinical presentations. We present a case report of a gastric duplication cyst in a 7-year-old boy to create awareness on the pathology and for clinicians to have a high index of suspicion when faced with this pathology. Due to our LMICs setting, diagnosis isn't done through antenatal ultrasound as it is seen in the west but within the first decade of life with an abdominal CT scan. The resource limited setting equally had an impact in our surgical management. Yet this do not change our patient's prognosis.

Keywords

Gastric Duplication, Gastric Outlet Obstruction, Boy

1. Introduction

Gastrointestinal tract (GIT) duplication is a rare congenital abnormality that occurs anywhere along the alimentary tract [1] [2]. They are common in the ileum, esophagus, and colon, while rare in the stomach, pharynx and tongue [3] [4]. These were first described by WE Ladd in 1934 [5] [6].

Gastric duplication (GD) represents 2% - 9% of GIT duplication, with an incidence of 17/1,000,000 and most cases are identified in early childhood [1]-[3] [7].

It is more common in females than males (8:1). These patients present clinically with diverse symptoms ranging from epigastric pain, vomiting, feeding difficulty, gastrointestinal bleeding, weight loss, fever to asymptomatic abdominal mass which can vary according to the patient's age, the size and location, and the type of the lesion [1] [2] [4]. Making it's diagnosis to be easily missed during routine evaluations. Diagnostic confirmation often requires complementary imaging exams and treatment is always surgical [7].

We present the first presentation reported in Cameroon concerning a gastric duplication cyst presenting as a gastric outlet obstruction at the Yaoundé Central Hospital (YCH).

2. Case Presentation

A 7-year-old boy was brought to our service after presenting with early post prandial vomiting, a painful left hypochondria abdominal mass which he graded 7/10 on the visual analogue scale and weight loss of about 10 % of his total body weight evolving for about 2 months.

There was no history of fever or change in bowel habits, no rectal bleeding.

He has no abdominal surgeries, no relevant perinatal history, past medical or family history and is on no routine medications.

There was no history of drug use by the mother during pregnancy.

On physical examination, he was asthenic and looked cachectic (weight: 13 kg). His vital parameters were within normal range. On examination of the abdomen there was a smooth, tender, immobile, rubbery abdominal mass measuring about 8 cm × 6 cm. There was no associated anomaly. The rest of the physical examination was unremarkable.

Given the above presentation of a gastric outlet obstruction we had as differential diagnosis a mesenteric cyst, pancreatic pseudocyst, gastric duplication (**Figure 1**).

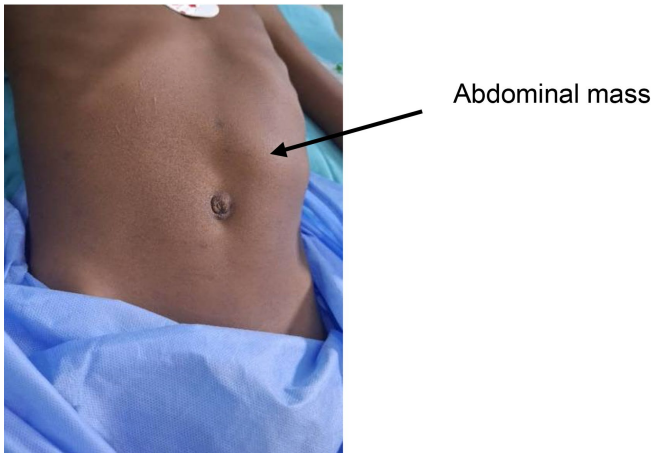

Figure 1. Showing abdominal mass (YCH photo library).

A diagnostic evaluation by computed tomography (CT) was done, which

demonstrated a thick walled left subhepatic cystic-appearing lesion near the pylorus, and a fluid filled stomach measuring 77 × 63 × 51 mm. An ultrasound guided puncture of the mass was done after which there was a marked increase in the volume of the mass. We concluded on a gastric duplication and the patient was planned for surgery (Figure 2).

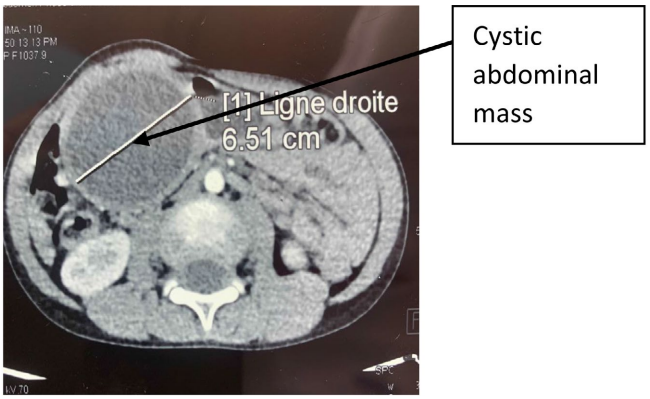

Figure 2. Abdominal CT scan showing cystic abdominal mass (YCH photo library).

Pre-operative blood work ups were done and the patient prepared for the laparotomy on the second day in the ward.

Intra-operative findings noted, an intraluminal cystic gastric mass along the distal 2/3rd of the greater curvature of the stomach. Without communication with the gastric cavity but obstructing the pylorus (Figure 3).

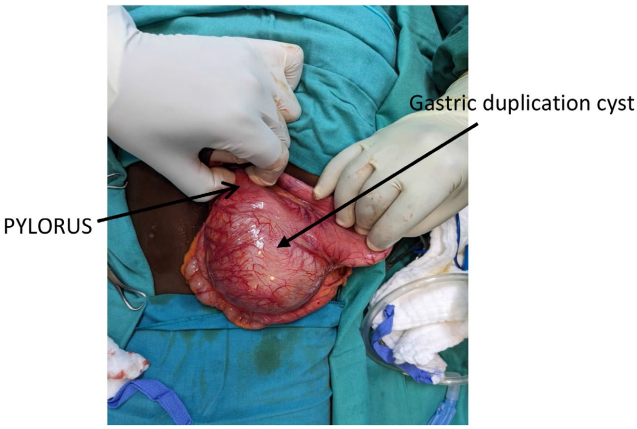

Figure 3. Gastric duplication cyst (YCH photo library).

Intra-gastric partial excision of the mass, mucosectomy and drainage were performed (Figure 4).

The gastric breach was closed using omentoplasty (omental patch) (Figure 5).

A lamellar drain is placed in the abdominal cavity after cleaning and layer-by-layer closure.

Post-operative, the patient's evolution was uneventful. He was discharged on the eighth post-operative day on oral medication and semi-solid meals.

The histopathological result confirms cystic gastric duplication. Revealing a normal gastric wall architecture, a hypertrophied muscularis, a thick antral mucosa and well differentiated epithelia.

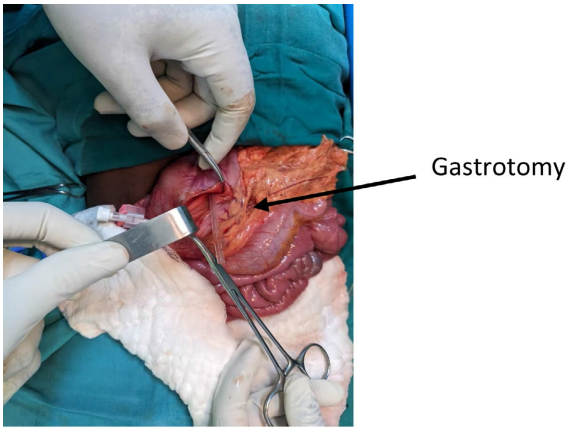

Figure 4. Trans gastric cyst resection gastrotomy (YCH photo library).

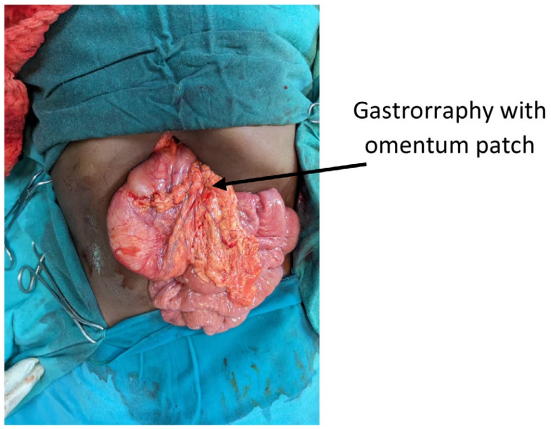

Figure 5. Gastroplasty + Omentum patch (YCH library).

3. Discussion

Gastric duplication is a rare congenital malformation of the gastrointestinal tract that accounts for approximately 2% - 9% of gastrointestinal malformations and is more common in females than males (8:1) [1] [3] [8]. The case presented is that of a 7-year-old boy. According to a study carried out by Liu *et al*. in 2022 most children with GDC were below the age of 2.

Gastric duplication cysts (GDCs) are often found at the greater or lesser curvature, can be spherical or tubular, and can sometimes communicate with an adjacent GI structure. In the vast majority of cases, GDCs are spherical non-communicating cysts. This was the case with our patient.

GDC's are diagnosed in the first years of life and commonly present as an abdominal mass or with vomiting due to gastric outlet obstruction [1] [5] [9]. Our patient presented with a painful abdominal mass, early post prandial vomiting and unexplained weight loss.

Gastric duplication has no specific clinical manifestations, causing the clinical diagnosis depend mainly on imaging examinations. These examinations includes radiography, ultrasound, computerized tomography (CT) and magnetic resonance imaging [1] [4] [5] [8]. With the advent of prenatal ultrasound gaining popularity in the western world, therefore an increase in prenatal diagnosis with rapid neonatal management [1] [9].

In the case above a CT scan was made which helped us identify the pyloric cystic mass. Our definitive diagnosis was gotten during surgery.

In a report given by Zhang *et al*. in 2017, gastric duplications were managed with laparoscopic-assisted resection of the cyst but in our case an open laparotomy was done given we are in a LMIC [8].

In Africa, Emeka *et al*. [10] reported a case of GDC as a rare cause of recurrent massive lower gastrointestinal haemorrhage which was diagnosed intra operatively.

This points out the complexity of its diagnosis and the invasive nature.

4. Conclusions

We present the first reported case in Cameroon of gastric duplication cyst in a 7-year-old boy after presenting with post prandial vomiting and a painful left hypochondria abdominal mass with weight loss.

Digestive duplication is a rare clinical situation which can occur in any site of the digestive tract even more so when it involves the stomach. Clinical presentation is far from uniform and the diagnosis is done by imaging investigations. Treatment remains surgery with good prognosis.

In a LMICs setting where antenatal diagnosis is not always accessible GDC should be suspected as a differential diagnosis for any patient presenting with postprandial vomiting and an abdominal mass.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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