Gastric Duplication Cyst: A Rare Congenital Anomaly Causing Gastric Outlet Obstruction

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ABSTRACT

Gastrointestinal duplication cyst is a rare congenital anomaly with a reported incidence of 1 in 4500 live births. Any part of gastrointestinal tract from mouth to anus can be affected with this anomaly. Among gastrointestinal tract duplications, gastric duplication cyst is extremely rare (2-9%)[3]. We are presenting a case to stomach duplication in complete surgical resection is the treatment of choice in gastric duplication cyst.

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INTRODUCTION

Gastrointestinal duplication cyst is a rare congenital anomaly which can occur anywhere from mouth to anus. The incidence of gastrointestinal tract duplication is 1 in 4500 live births.[1]Duplication of gastrointestinal tract is more common in ileum, followed by oesophagus and colon[2]. Duplication cyst of stomach is extremely rare among alimentary tract duplication, accounting for only 2-9% of all gastrointestinal duplications[3]. Majority of the case are diagnosed in early childhood or teenage. However, cases in old age have also been reported in literature.[4]

CASE REPORT

A four (04) day old male child presented in our Emergency Department with complaints of non-bilious, non-projectile vomiting and visible bulge in upper abdomen since birth. On examination, the child was mild dehydrated and in obvious respiratory distress. After initial management and stabilization, an X ray erect abdomen was done that showed mass effect confined to right hypochondrium and epigastric regions, obscuring the gas shadows of the gut. CT abdomen with IV and oral contrast was done and it showed enteric duplication cyst. On 7th day of life, child underwent exploratory laparotomy and cyst measuring 8x10 cm, arising from pylorus was found. Cyst was not communicating with gut. Cyst along with first part of the duodenum were excised gastro duodenostomy was done. Cyst contained mucinous fluid and was sent for histopathology. Post operatively the child was kept NBM for five (05) days and partial Total Parenteral Nutrition (TPN) was given during that period. Controlled oral feed was started on 6th post-operative day and child was discharged on 10thpost-operative day after establishing demand feed tolerance. Histopathology confirmed presence of both gastric and enteric mucosa.

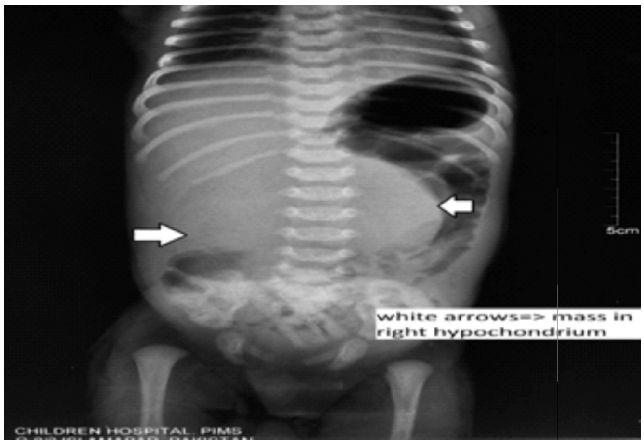


Fig 01: XRAY Abdomen showing Mass in right hypochondrium displacing gut loops (white arrows)

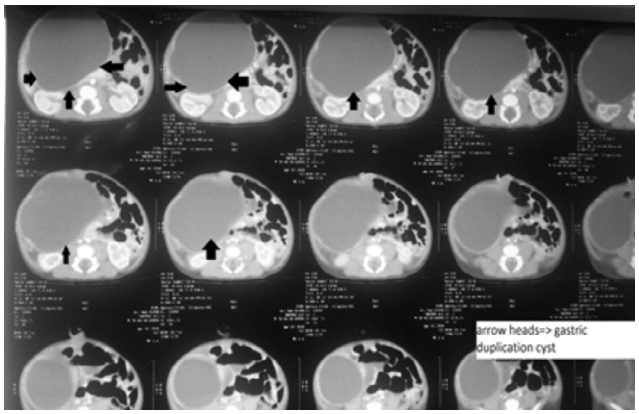


Fig 02: CT Scan abdomen showing Gastric duplication cyst (black arrows)

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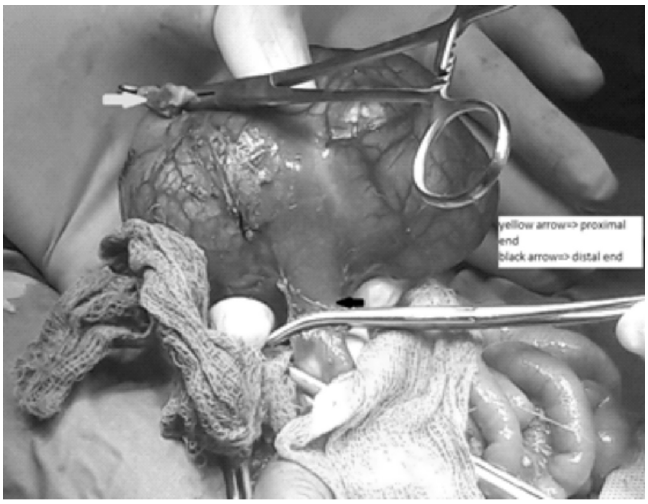


Fig 03: excising the cyst. Yellow arrow>> proximal end, black arrow >> distal end

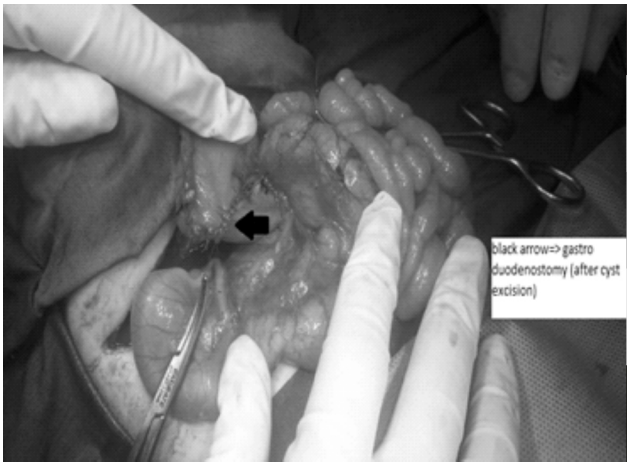


Fig 04: Gastro-duodenostomy after cyst excision (black arrow)

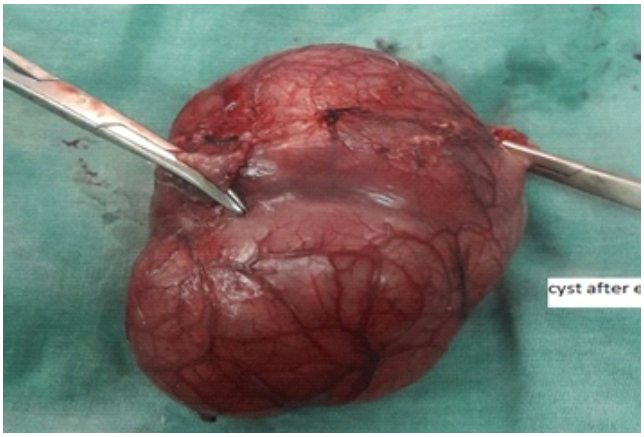


Fig 05: Cyst after excision in toto

DISCUSSION

In 1934, W. E. Ladd was the first to introduce term duplication of alimentary tract[2]. These duplications may be symptomatic or may go unnoticed for years and may diagnosed incidentally[2]. Gastric duplication is extremely rare among gastrointestinal duplications. Females are more affected than males (8:1), and diagnosis is quite difficult due to varied presentation. Most of cases are diagnosed in early childhood[3,4]. Gastric duplication can occur anywhere in stomach but most commonly occur in greater curvature of stomach.[3]

Alimentary tract duplications may occur in two forms, cystic or tubular, and may be non-communicating or communicating with gastrointestinal tract. Typically, cystic duplications are of non-communicating type. Whereas, tubular form usually communicates. Non-communicating cystic form of duplication is known as “duplication cyst”, and is common form, accounting for 80% of duplications. Communicating type of tubular duplications is rare and usually have single communication with gastrointestinal tract. The term “complete duplication” refers to the duplication that has proximal and distal communications along with separate and parallel lumen to alimentary canal. Complete duplications are extremely rare.[1]

Gastric duplication cyst usually presents with recurrent abdominal pain, vomiting and difficulty in feeding and abdominal mass. If there is intraluminal connection of duplication cyst with stomach or there is ectopic gastric mucosa in cyst, it may present with sign and symptoms of peptic ulceration with haemorrhage or perforation [2]. Gastric duplications are diagnosed in childhood usually before one year of age. Diagnosing Gastric duplication in adults is very difficult due to varying signs and symptoms. Adults may present with abdominal pain, vomiting, nausea, dyspepsia, dysphagia, abdominal distension and potentially anaemia. Weight loss can also occur[3].

Various imaging modalities are used to diagnose gastric duplication such as abdominal ultrasound, endoscopic ultrasonography (EUS), Contrast enhanced computed tomography (CECT) and MRI. Technetium99 m scanning is helpful in diagnosing gastric duplication that have gastric mucosa. “Double wall sign” on abdominal ultrasound is suggestive of gastric duplication.

Endoscopic ultrasound demonstrates the relation of gastric wall with cyst, but pancreatic tail could not be visualized. CECT may show gastric duplication cyst as thick-walled cystic lesion with enhancement of inner lining. MRI does not significantly improve diagnostic accuracy.[4]

To be a gastric duplication cyst, it must fulfil the following criteria,
1) continuity of cyst wall within the stomach.
2) coat of shared smooth muscles around cyst.
3) cyst and stomach share common blood supply.
4)cyst has epithelial lining of gastrointestinal tract.[5]
Malignant transformation in gastric duplication is known but uncommon complication reported in literature. Adenocarcinoma, neuroendocrine carcinoma, mixed adenocarcinoma with squamous carcinoma, leiomyoma and Gastrointestinal stromal tumour (GIST) have been reported in literature[6,7]

Treatment of gastric duplication is complete surgical resection because of risk of malignant transformation. Surgical resection may be undertaken by both open and laparoscopic techniques. The role of laparoscopy is increasing as it is less invasive, with less morbidity and serves as diagnostic and therapeutic purpose[8]. Enucleation, partial gastrectomy and partial gastrectomy with distal pancreatectomy, depending upon the site of duplication, are also the options that have also been reported in literature[5] .

CONCLUSION

Gastric duplication cyst is a rare entity among all gastrointestinal duplications and is difficult to diagnose due to varied presentation. Complete surgical resection should ideally be undertaken due to risk of malignant transformation.

Competing Interests

The authors declare no competing interests.

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