

Duodenal Duplication Cyst in A 42-Year-Old Woman: A Challenging Diagnosis And Management

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Abstract

Introduction: Duodenal duplication is a rare congenital malformation. Although more frequent in childhood, it may be rarely observed in adulthood. Several complications, such as obstruction, bleeding, perforation and pancreatitis may result. Pre-operative diagnosis can be difficult. Optimal treatment is total excision, although endoscopic procedures have also been described in appropriate cases. If total excision is not possible, subtotal excision and internal derivation can be performed.

Presentation Of Case: We report the case of a 42-year-old woman with a duodenal duplication cyst, who was misdiagnosed on several occasions in the past. The woman presented here with recurrent attacks of abdominal pain radiating to the right chest and vomiting. She also reports of a lump in the upper abdomen which comes and goes during the course of each attack. Definitive treatment needed a meticulous diagnostic workup and a delicate operation.

Discussion: This paper discusses the incidence of duodenal duplications, their types, their clinical presentations, the radiologic and diagnostic features along with different therapeutic options.

Conclusion: Duodenal duplication should always be one of the differential diagnoses proposed when approaching upper abdominal cystic formations.

Keywords: Gastrointestinal duplication, Duodenal cyst, Cysto-jejunosomy

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I. Introduction

The prevalence of GI duplication is 1:4500 to 1:10000 in the general population¹ and the duodenal duplication cyst represents a percentage ranging 2% to 12% of digestive tract duplications and has an estimated prevalence of less than 1 per 100000 live birth². The etiology of gastrointestinal duplication remains unknown although several theories have been proposed such as the abortive twinning theory (representing incomplete twinning), the persistent embryologic diverticula theory, and the aberrant luminal recanalization theory⁶. The most common type of duodenal duplication cyst is the cystic and non-communicating type, usually located at the medial border of the second part of the duodenum and extending anteriorly or posteriorly³. It has a well-developed smooth muscle coat and share a common wall with the native duodenum. Luminal communication is seen in 25% of cases⁵. These are mostly diagnosed in infancy and childhood⁴ but in rare cases, they can remain asymptomatic until adulthood, and 38% of patients are diagnosed after the age of 20 years⁴. Clinical manifestation of duodenal duplication cyst include abdominal pain, nausea/vomiting, pancreatitis, cholestasis or hepatitis, growth delay, weight loss, GI bleeding, intussusceptions / cyst infection⁷. They are generally benign lesion; malignant change is a rare complication of GI duplication in adult¹. Malignant transformation can occur in the setting of gastric mucosa heterotopias within the duplication cyst⁷. The presentations are very vague and usually coincide with the size, type and location of the lesion, thereby manifesting in different ways. This makes it more difficult for a clinician to link non-specific abdominal symptoms to this condition.

We here report one such rare case of duodenal duplication cyst in an adult female who presented with a brief history of epigastric pain and intermittent vomiting. The diagnosis was confirmed by contrast enhanced computed tomography scans and operative findings followed by histopathological analysis and in which the treatment was subtotal excision with cystojejunostomy and jejunojejunostomy.

II. Case Report

The 42 year woman presented here with recurrent attacks of abdominal pain and vomiting. She also reports of a lump in the upper abdomen which comes and goes during the course of each attack. The pain was located in the epigastrium, sudden onset, dull aching and radiating to the right chest, no relation with food intake. Sometimes interval of months may elapse between two painful attacks. The vomiting was associated

with pain and the vomitus contained recent ingested material, acidic, yellow colour. The lump appeared during pain on the upper abdomen and gradually regressed when pain subsides.

Examination findings-

On general survey patient was emaciated with poor nutrition. Others general physical examination revealed no significant findings. On per abdominal examination, on inspection the shape of the abdomen was normal, umbilicus central in position and skin of the abdomen was normal. On palpation, a mass was found in the epigastrium. The surface of that was smooth, edge well defined, consistency soft, not fixed to skin, non-compressible, non pulsatile, did not move with respiration. Abdomen was nontender during palpation. Other systemic examination and hernial orifices were normal. Pre-operative Investigations-

Laboratory findings showed haemoglobin 9.2 g/dl. All other routine investigations yielded normal result. Laboratory data presented a slight rise of serum amylase (106 UI) and lipase (83 UI), CEA and CA 19-9 level was normal. Her abdomen and chest x-ray showed normal. Ultrasound whole abdomen showed cystic mass in the right hypochondrium. We proceeded for contrast enhanced CT abdomen, which revealed well circumscribed homogeneously hypodense non-enhancing lesion measuring 5.6 × 5.8 cm, noted between 2nd part of duodenum and head of the pancreas, showing thin enhancing capsule and few thin enhancing internal septation. No evidence of intraleisonal solid component noted. These features are suggestive of duodenal duplication cyst.

Operative procedure performed-

As a result, a duodenal duplication cyst was diagnosed. With the patients written consent exploratory laparotomy was performed. Kocherisation was done and blunt dissection and enucleation of the cyst was attempted. Since cyst was adherent to the head of pancreas and CBD, therefore total resection was not possible. Because of it cystojejunostomy with roux en y Jejunum-jejunostomy was performed.

Intra- Operative Findings-

A cystic swelling measuring about 8 × 7 cm in size was found on the medial side of the second part of duodenum, it was adherent to the head of pancreas and CBD. Aspirated fluid of the cyst was mucinous in nature. Liver, stomach, transverse colon, other major structures were grossly normal.

Postoperative period-

Her postoperative period was uneventful and complication free. She regained her nutritional state and discharged on POD-7. Patient was well and free from symptoms after 12 months of follow up.

Postoperative Investigation-

Histopathological examination confirmed the diagnosis by identifying columnar epithelial and sub epithelial bundle of smooth muscle. No atypical cells and granuloma. Postoperative CECT abdomen showed there is widening of duodenal loop and an approx 3× 2 cm extra luminal , multiloculated collection with air-fluid level noted between duodenal loop and head of pancreas. Evidence of caudal extension continuing as jejunal loop was seen.



Fig 1: Pre-op usg



Fig 2: Pre-op CT

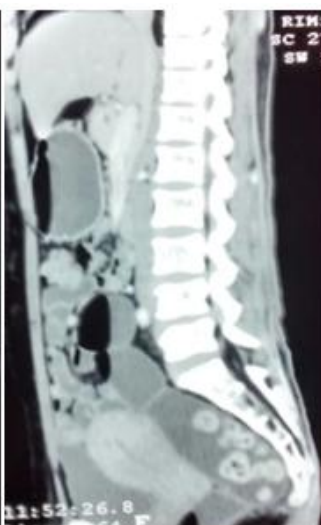


Fig 3: Pre-op CT



Fig 4: Pre-op CT abd



Fig 5: Intra-op findings



Fig 6: Intra-op procedure



Fig 7: Intra-op procedure



Fig 8: Post-op CT



Fig 9: Post-op CT

III. Discussion

GI duplication cysts are defined by a smooth muscle coat, an intimate attachment to the native GI tract and a GI mucosal lining⁸. In this case also, on histology finding cyst shows columnar epithelial and sub epithelial bundle of smooth muscle. The cysts are usually filled with clear fluid⁹. But in this case shows, aspirated fluid shows mucinous in nature. Abdominal Ultrasound can usually define the cyst but as a rule, may not show the exact source¹⁸. EUS can offer an accurate diagnosis of duplication cysts³. Magnetic resonance imaging (MRI) and gastroduodenoscopy are other modalities that can be used for diagnosis¹².

In 2003, Kim et al. presented a case of completely isolated duodenal duplication cyst and mentioned it to be the only report describing computed tomographic findings of completely isolated enteric duplication cyst in the English-language literature¹⁹. Partial resection of the common wall with internal marsupialisation on the duodenum is a good management option to avoid injury to the pancreas, pancreatic and bile ducts, or any related structure. Other possibilities include cystojejunostomy by a jejunal loop or Roux-en-Y anastomosis¹⁴. Advances in therapeutic endoscopy, such as endoscopic mucosal resection, were recently used in management of some duodenal cysts¹⁶. More recently, many cases of duodenal duplication were managed laparoscopically, including resection or anastomosis, with favourable outcomes¹⁷.

The surgeon should judge best treatment that relieves symptoms without causing serious complications. In our case, cystojejunostomy with roux en y Jejunum-jejunostomy was a safer option for draining the cyst and relieving the compressive symptoms.

IV. Conclusion

Duodenal duplication should be considered in the differential diagnosis of vague upper abdominal symptoms, especially when a cystic structure neighbouring the duodenum demonstrated on radiology. Ideal treatment is total excision when feasible. Otherwise the cyst may be treated with partial excision and/or internal anastomosis. When treated properly, these lesions usually have favourable outcomes.

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