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A case of an asymptomatic Ileal duplication cyst in a child: a rare entity

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Abstract

Duplication cysts are uncommon congenital cysts found in the gastrointestinal tract. They are usually symptomatic but sometimes may remain asymptomatic because of which they are not detected. They may present at any age and have been reported in the prenatal period as well as in the old age. A young 12 year old boy presented with post appendicectomy related complaints in our institute was found to have a cystic lesion in the ileum on imaging. The patient underwent ileal resection and this cyst was confirmed to be a duplication cyst on histopathological examination.

Keywords: Duplication cyst, Ileum

Introduction

Enteric duplication cysts are rare congenital abnormalities of the gastrointestinal tract. They may occur at any site from mouth to anus. The incidence of 1 in 4500 has been stated (1). The ileum is the most common site of affection, accounting for about 60% of the cases. The other segments of intestine are involved comparatively rarely. A duplication cyst may present early or may remain asymptomatic.

Case report

A 12 year old male/female child was admitted to our institution with the complaints of pain abdomen following appendicectomy. The patient had gone appendicectomy ……..ays back. Routine investigations were performed. Radiology revealed a cystic lesion filled with homogenous internal fluid abutting the small bowel loop. (Figs. 1 & 2). The peroperative findings revealed a mass lesion 15 cm proximal to the ileocaecal junction. The ileal mass along with the ileocaecal region was resected and sent to the histopathology department. The resected gut revealed a distorted ileocaecal junction. The wall was thickened and congested in this region. Exudates were deposited on the external surface. Rest of the ileal segment was normal. The cystic lesion was present 15 cm proximal to the ileocaecal junction. It was circular having a diameter of 7 cm. (Fig. 3). The cyst not communicating with the ileal lumen or any other adjacent structure. Its content was serous fluid. The inner wall of the cyst was smooth. Sections were submitted for histopathological examination. Microscopy revealed an ileal type of mucosal lining, submucosal layer and a muscular layer. The muscular layer was

common with that of the ileum. No other type of mucosa was found in the sections examined. (Fig. 4).

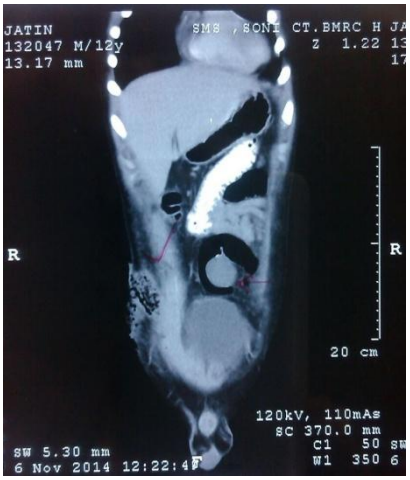

Fig. 1: Longitudinal plane of CT scan showing cyst filled with fluid.

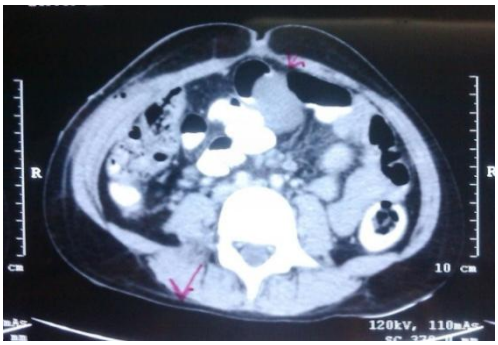

Fig. 2: Transverse plane of CT showing the cystic fluid filled lesion abutting the intestine.

Fig. 3: Cut surface of the cyst.

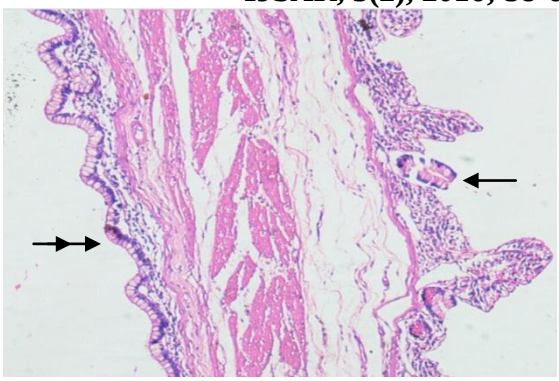

Fig. 4: Microphotograph revealing intestinal mucosal glands (single arrow) along with submucosa. Towards the left the flattened columnar lining of the duplication cyst is seen. The muscularis propria is common.

Discussion

Alimentary tract duplications are rare cystic lesions which occur at any site from oesophagus to rectum. It was first reported by Calder (2). The term duplication cyst was coined by Ladd (3). There are three basic features which have to be present to term a cyst to be a duplication cyst

- Well developed coat of smooth muscle
- Epithelial lining
- Attachment to some portion of the gastrointestinal tract.

Ileum has been reported to be the most common site accounting for about 50-60% of the cases (4) though some authors are of the belief that jejunal duplication cysts are commoner (5).

Duplication cysts may remain asymptomatic and may be detected incidentally accounting for the cases reported in adults. Adults may also present with symptomatic cysts. Usually the symptomatic cases are reported earlier, mostly before 2 years of age. They may even be detected antenatally with the help of imaging studies.

The size of the cyst may range from small to very huge occasionally. The symptoms usually depend on the site, size and nature of the cyst. Based on the site, duplication cyst may present in varied manner. The duodenal

cysts can cause complications such as pancreatitis, infection, weight loss, and GI bleeding[6] Jejunal duplication cyst can cause abdominal bloating, constipation, intussusception, volvulus and partial small bowel obstruction[7]. Ileal duplication cysts may be asymptomatic or present with pain, palpable abdominal mass or may mimic other conditions. Meduri et al (2015) reported a case of ileal duplication cyst which was misdiagnosed as a renal cyst[8]. They may present as malrotation, stenosis or perforation[9]. Secondary events such as obstruction, infection and haemorrhage may also occur[10]. These complications may be life threatening and need urgent surgical intervention. Haemorrhage if present is due to the ectopic gastric mucosa present in 30 to 50 % of the cases. This can be detected by 99mTc pertechnate uptake on scintigraphy [11]
Our patient had no symptoms that could be attributed to the duplication cyst. The cyst was primarily asymptomatic as it was small and had not developed any secondary changes.
The diagnosis of ileal duplication cyst can be made by imaging studies. X-ray, ultrasounds scans and contrast studies all play a role in diagnosis and differentiating it from other disorders which it may mimic[12]. They are even helpful to diagnose the cysts prenatally [8,13]. Plain x –rays may be non-specific and show features of intestinal obstruction [14]. Ultrasonography is however very helpful in detection of the duplication cyst. It shows an inner hyper echoic rim of mucosal and submucosal tissues and an outer hypoechoic muscular layer[15]. Now-a-days endoscopic ultrasound is more prevalently being used as a tool for diagnosis and even management for the alimentary duplication cysts (16). CT may show the location of cyst. It may show a fluid filled cyst surrounded by an enhancing rim of tissue. The CT of our patient also revealed similar a homogenous fluid filled cyst not communicating with the intestinal lumen.
Barium enema and follow through studies usually done for proximal duplication cysts may be useful in establishing whether cyst is communicating with the alimentary tract or not.
Magnetic resonance imaging is also helpful in demonstrating the cysts. It may demonstrate peripheral enhancement and uniform central low signal intensity post contrast T_1W. High signal intensity when imaged with T_2W sequence regardless of the nature of cystic content. (17)
Microscopically the duplication cysts have mucosal lining similar to the organ from where it arises. It may share the muscular layer or may have a separate epithelial lining, submucosa and propria. Some authors have reported the presence of ectopic tissue like gastric and pancreatic tissue. The presence of gastric tissue has been stated to be the cause of bleeding and perforation in a duplication cyst (11, 18). Our case did not reveal any ectopic tissue.
Emphasis has been laid on surgical removal of a duplication cyst even if asymptomatic (19),as both adenocarcinoma and squamous cell carcinoma have been reported in them. Surgery also becomes mandatory when a patient lands up in any of the fatal complications that may arise due to the cyst.

Conclusion

This entity should be kept in mind by surgeons and radiologist as a differential to many much commoner conditions of the intestinal tract so that timely intervention may save the patient from any morbidity.

Conflicts of interest

None declared

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