

## Case Report

### Rectal duplication cyst mimicking rectal prolapse: A case report

Asrar Ahmad, \* Eelaf Karar, Irum Saleem, Nisar Ahmad

Department of Surgery, Bahria University Medical and Dental College, Karachi

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#### ABSTRACT

**Background:** Gastrointestinal tract duplications are rare congenital malformations that are benign, presenting usually in childhood. Most common sites include the distal ileum and esophagus. Rectal presentation is quite uncommon and is usually cystic.

**Case Presentation:** This is a case of a 3-year-old boy who came with rectal prolapse. On further examination and imaging investigations, a presacral cyst was located and a diagnosis of rectal duplication was made. The cyst was completely excised by a posterior sagittal approach.

**Conclusion:** Rectal duplication is a rare entity that may simulate a rectal prolapse.

**Keywords:** Rectal duplication, Rectal prolapse, Bleeding per rectum.

#### INTRODUCTION

The incidence of gastrointestinal duplication cysts is 1 in 10,000 live births and hence it is quite a rare congenital abnormality. Rectal duplications represent 5% of all duplications in the alimentary tract.[1] Most rectal duplications are cystic (94%) and are usually recognized as perianal abscesses, fistulas, or tumors.[2] Knudtson et al.[3] assess that up to 45% of rectal duplications are associated with a fistula to the anus or perianal region.[3] Tubular duplications of the rectum are generally located posteriorly and have been anterior to the rectum in only a few reported cases.[4] Most patients present with constipation, rectal bleeding, urinary tract infection, rectal prolapse, hemorrhoids, and perirectal abscess. Diagnosis starts with ultrasound examination, plain radiography of the abdomen, contrast enema, computed tomography, and MRI study.[5] Herein, we describe a case of rectal duplication that simulated rectal prolapse.

#### CASE REPORT

A 3-year-old male child presented with something coming out of the anus on defecation for the last four months. The mass would at times reduce spontaneously and at times would cause pain and had to be reduced

manually. There was no history of constipation, diarrhea, or bleeding per rectum. On examination under anesthesia, a large bulging mass was noted in the posterior wall of the rectum. On digital rectal examination, a cystic mass was palpable in the posterior wall of the rectum. The upper limit could be reached. The overlying rectal mucosa was normal. No communication with the rectum was visible. His complete blood counts, serum electrolytes, and renal function tests were normal. The ultrasound pelvis was suggestive of a cystic lesion in the presacral space. CT scan pelvis was suggestive of a well-defined round to oval-shaped, non-enhancing, cystic mass lesion in the presacral region measuring about 3.7×3.3×3.5 cm. It was compressing the rectum anterolaterally with an indistinct interface. The interface with the sacrum was intact and there was no erosion of bone. A diagnosis of rectal duplication cyst was made (Fig.1). He was prepared for surgery. Gut preparation was done. The cyst was approached through the posterior sagittal incision. The muscularis propria of the rectum was opened and the cyst was excised completely without opening the mucosa of the rectum (Fig.2). The muscularis propria was repaired with absorbable interrupted sutures and skin wound closure done with subcuticular suture. He made a smooth post-operative

recovery and was discharged on the 4th postoperative day. The patient recovered completely and follow up revealed no complaints.

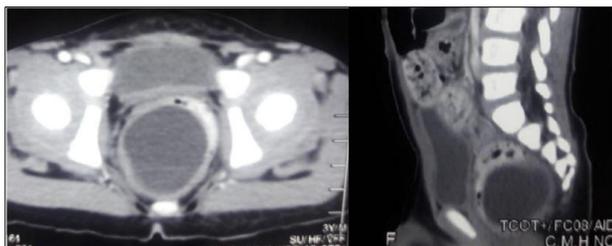


Figure 1: CECT Scan of the abdomen showing presacral cystic mass



Figure 2: Rectal duplication cyst being excised through a posterior sagittal approach

## DISCUSSION

Gastrointestinal (GI) duplications are a very uncommon but complex set of embryological disorders that can involve any part of the alimentary canal from the tongue to the anus. Duplications of any kind share common characteristics like, they are hollow, lined with gastrointestinal tract epithelium, and have a smooth muscle wall. Gastrointestinal duplications were initially believed to be more common in males, but it was later confirmed that there is an equal male to female ratio.[5] Colonic duplications account for 15% and rectal duplications account for 5% of all alimentary canal duplications.[1,7]

The exact pathogenesis of duplications is unknown and multiple theories have been put forward. According to the most credible theory, as the rapidly growing endothelial cells occlude the intestinal lumen, vacuoles form inside the cell masses due to the growth of the intestine. These vacuoles fuse to create a single lumen intestine. If one of these vacuoles pinches off, they can create a secondary lumen, which may entirely be separated from the

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main lumen but grows in proportion to the main lumen. Colonic duplications can be cystic or tubular involving a limited portion of the colon or be extensive. They are usually divided into two types, type I and II. Type I usually has partial involvement of the colon or rectum while type II has a wider spectrum as in addition to colon and rectum, there can also be associated congenital anomalies including duplication of the lower genitourinary tract, double appendices, situs inversus, and neural tube defects.[4,6]

Ultrasonography and contrast studies are most widely used. Computed tomography (CT) and magnetic resonance imaging (MRI), although less often used, are helpful in localizing and diagnosing complex duplications.[7-9] These duplications may mimic a tailgut cyst, anterior sacral meningocele, cystic sacrococcygeal teratoma, anal duct, or gland cyst, necrotic rectal leiomyosarcoma, dermoid cyst, epidermoid cyst, cystic lymphangioma, neurenteric cyst, and necrotic sacral chordoma.[10] Tail gut cysts are usually multilocular and present later in life. Epidermoid cysts are thin-walled filled with clear fluid. Dermoid cysts are heterogeneous with skin appendages. Sacrococcygeal teratomas are also heterogeneous lesions with mixed cystic and solid components. Anterior sacral meningocele and neurenteric cysts are better differentiated with MRI because of its communication with the subarachnoid space.

Rectal Duplications are treated with complete surgical excision of the cyst by transanal, transcoccygeal, or posterior sagittal approaches. Other less invasive ways include transanal endoscopic microsurgery or Laparoscopic surgery.[9]

To conclude, rectal duplication simulating rectal prolapse is a rare entity. Every case of rectal prolapse should be examined carefully to rule out such anomalies

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