

## Colonic duplication in adult

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**Section:** Abdominal imaging

**Area of Interest:** Urinary Tract / Bladder Gastrointestinal tract

**Procedure:** Imaging sequences

**Imaging Technique:** CT

**Special Focus:** Congenital Case Type: Clinical Cases

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**Patient:** 81 years, female

### Clinical History:

Our patient was admitted to the emergency department because of an ill-defined abdominal pain and rectal tenesmus. She referred a clinical history of chronic constipation and significant abdominal distension that she used to treat with cathartic drugs.

### Imaging Findings:

Plain abdominal x-ray was performed, and showed a modest bowel loop distension without important air-fluid levels and a huge fecal impaction, extending from the rectal ampulla upwards to the left iliac fossa and left flank without free air in peritoneum. A Computed Tomography (CT) without intravenous iodinated contrast medium, because of high values of creatinine, was performed. The CT confirmed a large fecal impaction with coprostasis in the distal colon, but the presence of a colorectal tubular duplication extending from the hepatic flexure to the rectum, with two different anal sphincters, was clearly defined. No abdominal and pelvis lymph-nodes or free fluids were found; other findings included a slight dilatation of the main biliary duct, an adrenal left nodule, the complete absence of the left kidney and uterine malformation. The patient denied having ever undergone abdominal surgery before.

### Discussion:

Gastrointestinal duplications are rare congenital anomalies (with an incidence of approximately 1 in 4500) [1] which in 80% of cases are detected prenatally or in the first two years of life, although they can remain undetected until older age [2]. However, this condition is seen infrequently in adults [3].

The duplications are classified according to their location (ileum 30%, ileocecal valve 30%, duodenum 10%, stomach 8%, jejunum 8%, colon 7%, rectum 5%) [4]. Colonic duplication is one of the rarest types of duplication of the alimentary tract [5]. There are two types of colonic duplication: tubular and cystic [6]; they are defined as mucosal structures with smooth muscle lining which form another lumen (tubular duplication) or cysts (cystic duplication). The cystic form is the most frequent [7].

Duplications are frequently associated with anomalies in other organ systems. A total of 80% have had anomalies in at least one other organ system, and 55% in three or more. Other described skeletal anomalies include vertebral and pelvic anomalies, (such as widened symphysis pubis) and genitourinary anomalies including exstrophy, septated bladder, bifid scrotum, duplicated urethra, prostatorectal fistula, and myelomeningocele [8-10].

The clinical signs of an intestinal duplication include constipation, vomiting, volvulus, perforation, and, most commonly, intestinal obstruction owing to the blind end of the duplication compressing the normal bowel [11-13]. Preoperative diagnosis of alimentary tract duplications is often difficult. CT of the chest or abdomen is helpful in

establishing a diagnosis. Although preoperative diagnosis has been made with the aid of radiological studies such as a barium enema; the majority of cases have been diagnosed at the surgery or upon pathological examination [14]. Most authors recommend that once the diagnosis is made, an elective surgical procedure should be performed to avoid complications and to perform the procedure in an optimal state of the patient.

The recommended surgical procedure is excision of the duplication along with the relevant part of the colon [6, 15]. Treatment includes simple resection of distal common wall, fenestration, and repair of the other associated anomalies.

Indications for surgical intervention is reserved for symptomatic cases [16] and depend on acute setting, symptoms, types of duplications and associated anomalies.

In conclusion, the patients with complete duplication have to be examined carefully because of the high incidence of other systemic anomalies [17].

**Differential Diagnosis List:** Colonic duplication, Neoplastic obstruction, Volvulus

**Final Diagnosis:** Colonic duplication

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## Figure 1

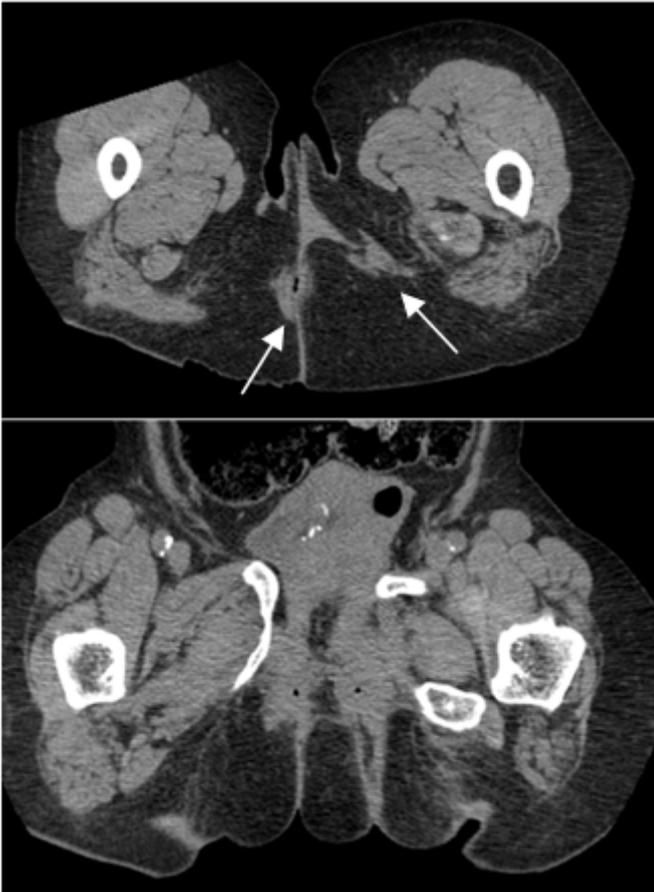
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**Description:** The CT scout view shows bowel loops distension and a huge fecal impaction in the rectal ampulla. **Origin:** Department of Radiology IRCCS S. Martino IST Genova, Italia.

**Figure 2**

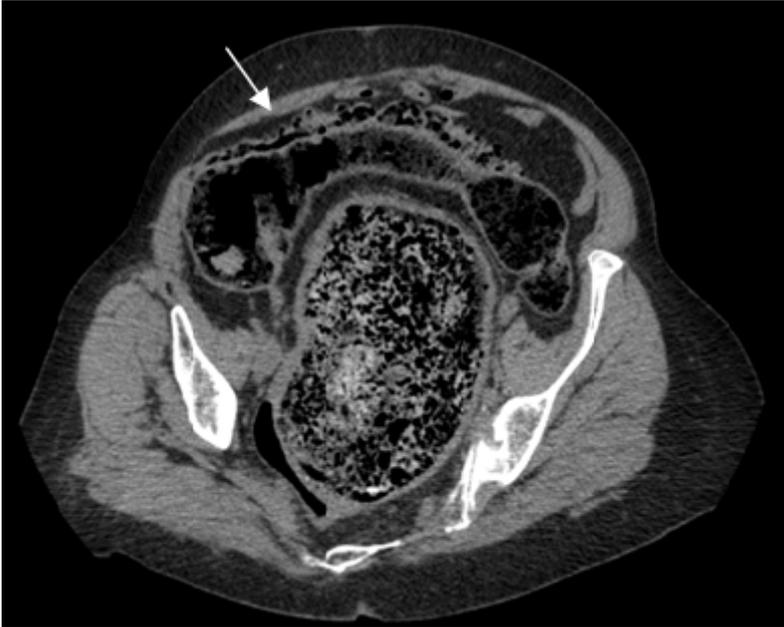
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**Description:** The images show perineal region with two different anal sphincters. **Origin:** Department of Radiology IRCCS S. Martino IST Genova, Italia.

### Figure 3

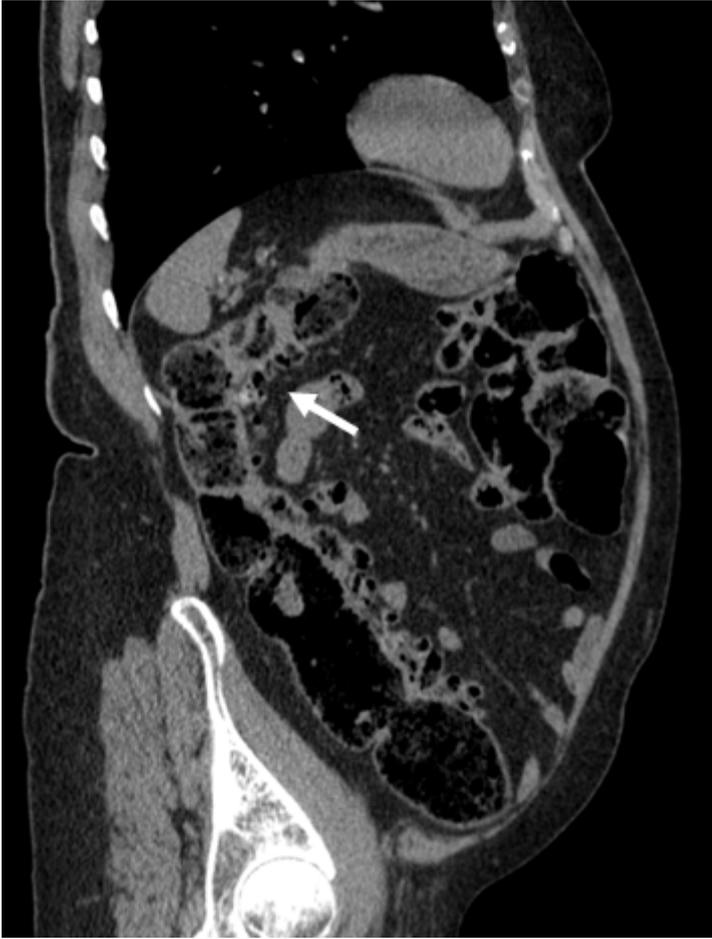
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**Description:** Axial CT view shows the intestinal duplication with two different rectosigmoid lumen: the posterior one with fecal impaction and the anterior one with diverticular disease. **Origin:** Department of Radiology IRCCS S. Martino IST Genova, Italia.

## Figure 4

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**Description:** Sagittal CT view shows descending colon duplication, until the splenic flexure (white arrow), respectively with distention and with diverticular disease. **Origin:** Department of Radiology IRCCS S. Martino IST Genova, Italia.

## Figure 5

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**Description:** The arrows indicate the double lumen at the level of descending colon and of the sigma.

**Origin:** Department of Radiology IRCCS S. Martino IST Genova, Italia.

## Figure 6

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**Description:** Coronal CT view demonstrates genitourinary abnormality: left kidney absence. **Origin:** Department of Radiology IRCCS S. Martino IST Genova, Italia.

## Figure 7

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**Description:** Abdominal CT **Origin:** Department of Radiology IRCCS S. Martino IST Genova, Italia.