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Case Report
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A Rare Case of Small Bowel Duplication and Literature Review

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Abstract

Introduction: The bowel duplications are very rare and they include 0.1% to 0.3% of all congenital malformation. Small intestine is the commonest site (44%) of enteric duplication.

Case: A 26-yeras old female referred abdominal pain. The abdomen CT scan shows a cystic neoformation with fluid density, size of 50 mm. A resection of the ileal tract affected by the neoformation is performed and an isoperistaltic latero-lateral anastomosis is performed.

Discussion: Intestinal duplication represents a congenital anomaly of the intestine that is found mainly in infants. Intestinal duplication is often associated with other gastrointestinal and extraintestinal anomalies.

It can have a spherical or tubular shape; in the jejunum it occurs as a tubular duplication, while in the ileum as a spherical duplication.

Conclusion: Treatment of intestinal duplications varies according to the presentation of the malformation. The usual approach remains, intestinal resection with primary anastomosis.

Keywords: Cyst; Ileum; Congenital abnormalities; Small intestine; Small bowel

Introduction

Duplication cysts may be present from the esophagus to the anal canal. The term duplication was introduced by Ladd in 1937. They are very rare and include 0.1% to 0.3% of all congenital malformation [1]. Small intestine is the commonest site (44%) of enteric duplication [2].

Duplication cysts of small intestine rarely present as acute abdomen. They are diagnosed commonly during the infancy but rarely during adulthood [3].

Case Presentation

A 26-yeras old female referred abdominal pain. On examination, the abdomen was distended, painful on deep palpation, but no guarding/rigidity. Intestinal peristalsis could be appreciated clinically. Pathological and physiological anamnesis reveals abortion in 2016 and an exploratory laparoscopy in 2017 without evidence of disease.

After a pregnancy, she performs an abdomen CT scan which shows a cystic neoformation with fluid density, size of 50 mm (Figure 1).

The patient underwent surgical consultation. The patient is referred to elective surgery.

A laparoscopy is performed; the neoformation is highlighted after adhesiolysis (Figure 2).

The neoformation adheres to the walls of the small intestine. A resection of the ileal tract affected by the neoformation is performed and an isoperistaltic latero-lateral anastomosis is created (Figure 3).

On histopathological examination: Mesothelial cyst, with walls made up of fibroadipose tissue including mucosa of the small intestine, with inflammation.

Postoperatively the patient was discharged on seventh postoperative day without complications.

Discussion

Intestinal duplication represents a congenital anomaly of the intestine that is found mainly

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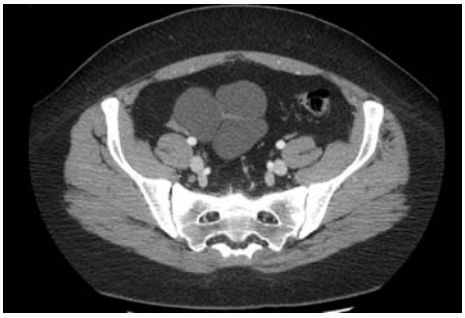

Figure 1: CT scan of abdomen.

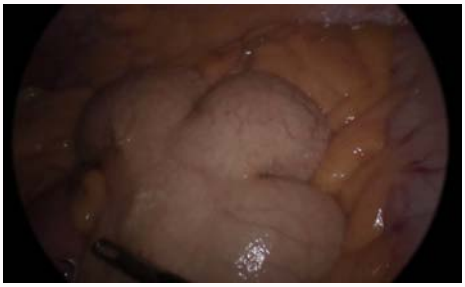

Figure 2: Laparoscopic view.

in infants [4]. Intestinal duplication is often associated with other gastrointestinal and extraintestinal anomalies [5]. There are several theories that try to explain the origin of intestinal duplication. However, none of these can explain the reason for the presence of heterotopic tissue and the exact mesenteric position. Intestinal duplication are mainly found on the ileum and only on the mesenteric border of the intestine [6,7]. It can have a spherical or tubular shape and in the jejunum it occurs as a tubular duplication, while in the ileum as a spherical duplication [8]. It can be easily mistaken for another intra-abdominal cyst or for Meckel's diverticulum at the ileal level, even if the latter typically occurs on the antimesenteric border of the intestine [6]. The patient has a cystic duplication in the ileum and she doesn't present other malformations. The clinical presentation of this malformation is highly variable. The symptoms that may occur are related to the location of the duplication along the GI tract [9]. It can present with pain, intestinal obstruction, or, more frequently, as a palpable mass, based on the location and size of the lesion. Intestinal duplication is often predisposed to bleeding or perforation due to the presence of heterotopic gastric mucosa in 30% of cases [10]. They can also develop others important complications such as intestinal obstruction, volvulus, necrosis and fistulization with adjacent tissues [11]. Diagnosis in adulthood is not easy. This condition is often diagnosed in pediatric age due to early symptoms or it remains latent for years [12]. It is very difficult to make a correct diagnosis preoperatively [8]. The clinical presentation in adults is very variable, it is necessary to use instrumental tests. Today the diagnosis is often made with CT scan or ultrasound. The combined use of CT and ultrasound is useful for distinguishing enteric duplications from other intra-abdominal cystic lesions, after persistence of gastrointestinal symptoms [6,13]. However, it happens that instrumental exams do not be enough to have a certain diagnosis, so an exploratory laparotomy becomes indispensable [6]. Ultrasound is the first instance examination in both pediatric and adult age. The ultrasound signs are represented by: Accentuation of peristalsis in the tract affected by the duplication and hyperechogenicity of the mucosa

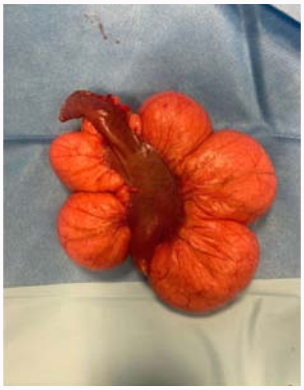

Figure 3: Surgical specimen.

which contrasts with the hypoechogenicity of the muscular lamina. The ultrasound examination is not decisive and it requires further radiological insights: CT or MRI. MRI is used for the diagnosis of gastrointestinal duplication in children and women of childbearing age. CT is a method with high diagnostic sensitivity and allows a precise preoperative evaluation. Cystic duplication appears on CT and MRI as rounded structure with well-defined margins and poor post contrast enhancement of the wall [5]. Diagnostic imaging plays a key role for the correct diagnosis and differential diagnosis [14].

Intestinal cystic duplication enters a differential diagnosis with frequent pathologies due to the symptoms. The symptoms are in common with other diseases: Crohn's disease, ovarian and mesenteric cysts, acute appendicitis. It is also important to exclude the presence of a malignant neoplastic mass [15]. Intestinal duplication cysts are considered benign lesions however cases of malignant neoplastic evolution are described especially in the colon or large intestine [16]. They are often adenocarcinomas [17].

The gold standard treatment is the resection of the duplication. In stable patients with low risk of complications, minimally invasive resection is preferable [18].

The surgical procedure depends on both the specific site of the lesion and its size and resection of the cyst or part of the intestine is performed [6,19]. The complete resection of the interested intestine is also supported by the risk of malignant degeneration that has been observed in the adult population [7,20].

The excision also includes an adjacent portion of the gastrointestinal segment respecting the blood peduncle [18].

At the time of diagnosis, an elective exploratory laparotomy/ laparoscopy must be planned in all patients. The diagnosis of certainty is obtained with post-operative histopathological examination [21,22].

Conclusion

Treatment of intestinal duplications varies according to the presentation of the malformation. The usual approach remains intestinal resection with primary anastomosis. Resections of larger bowel segment will increase complications, as short bowel syndrome.

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