



Littre's Hernia: A Unusual Tricky Situation of Meckel's Diverticulum

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Abstract

Littre's hernia is defined by the protrusion of an isolated Meckel's diverticulum through an orifice in the abdominal wall. It was first described in 1700 by Littre; hence, its name and its diagnosis are usually carried out intraoperatively. The Hernia of Littre is a rare complication of Meckel's diverticulum. Meckel's diverticulum is the most common congenital anomaly of the gastrointestinal tract that is usually asymptomatic and manifests in a precise picture when complications occur. An unusual complication of Meckel's diverticulum is known as Littre's hernia. It includes less than 1% of all Meckel's diverticulum. Typical sites of Littre hernia are right inguinal (50% of cases), umbilical hernia (20%), and femoral hernia (20%). We present a case of Littre's hernia, where we found an incarcerated Meckel's diverticulum in an inguinal hernia sac.

Keywords: Littre's hernia; Meckel's diverticulum; Unusual complication; Surgical treatment

Introduction

A Littre hernia is defined by the presence of Meckel's diverticulum in the hernia sac [1]. At the commencement of the 18th-century French anatomist, Alexis de Littre firstly reported ileal diverticula and accredited them to adhesion [2,3]. Meckel's diverticulum is a remnant of the proximal portion of the omphalomesenteric duct, which links the embryonic intestine with the umbilical bladder until the fifth week of gestation. The incidence of Meckel's diverticulum is 2% to 3%, and normally, it is not symptomatic [4]. Only 4% to 6% of cases will produce symptoms (more frequent during infancy), the principal manifestation being rectal bleeding, sometimes massive, due to the presence of gastric mucosa [5]. Meckel's diverticulum, being present in about 2% of the adult population, is one of the most frequent congenital anomalies of the gastrointestinal tract [6]. It is usually found on the antimesenteric border of the ileum, 20 cm to 90 cm from the ileocecal valve [7-8]. It habitually presents no particular symptoms, and only around 4% of the patients, having a Meckel's diverticulum, experience related complications. These include gastrointestinal bleeding, bowel obstruction, inflammation, and perforation [9,10]. The existence of Meckel's diverticulum in a hernia sac is quite rare, and its exact frequency remains unknown [11]. A Littre hernia is usually presented as an inguinal, umbilical or femoral hernia [12,13]. Its symptomatology is similar to any other hernia containing small intestine, and as a result, its diagnosis is regularly made intraoperatively. The ileal loop, to which the Meckel diverticulum is attached, usually follows in the hernia sac and may become incarcerated or even strangulated [14]. The purpose of our case presentation is to publish and enforce the literature through studies of adult litter hernias and evaluate their clinical presentation and treatment approach.

Case Presentation

The 64-year-old male patient with a surgical history of a right inguinal hernia operated two years previously, consulted urgently for a painful, irreducible right inguinal and scrotal swelling associated with nausea. The physical examination of the patient confirmed the existence of an irreducible right inguinal & scrotal swelling, non-impulsive compared to the old right inguinal incision scar, evoking a strangulated recurrent right inguinal hernia. The pre-operative biological assessment was within normal values. Plain abdominal radiography demonstrated air-fluid levels (small bowel), but clinically, there was no evidence of intestinal obstruction.

The patient was operated with the diagnosis of strangulated right groin inguinal hernia, and the exploration of the contents of the hernia sac found an incarcerated a non-necrotic Meckel's diverticulum (Figure 1). Resection of an ileal loop carrying the diverticulum with immediate restoration of the digestive continuity by the end to end ileal anastomosis. The rest of the bowel

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Figure 1: Showing incarcerated Littre's hernia after it's released from hernial sac.

was carefully examined and was reduced into the abdomen. Herniorrhaphy, according to the method of Mac-Vay, was performed. The postoperative period was smooth, and the patient was discharged on the 6th post-operative day. He was followed in OPD, and after a sixth month, there was no recurrence.

Discussion

A Littre hernia is an unusual complication of Meckel's Diverticulum (MD), and it is a consequence of its protrusion through a herniary orifice. Its incidence is hitherto unknown but is described that 1% of patients having an MD will develop a Littre hernia [15,16]. It should be distinguished from Richter hernia, where a part of the intestinal wall is strangulated in the hernial sac, but no MD is involved [17]. The abnormal protrusion of Meckel's diverticulum through an orifice in the abdominal wall is what is known as Littre's hernia and was first described by Alexis de Littre (1700).

Meckel's diverticulum is a real intestinal diverticulum and arises due to the failure of the omphalo-mesenteric duct to obliterate during the fifth week of fetal development. With an incidence of around 2% to 3%, it is the most common congenital anomaly of the Gastro-Intestinal Tract. It is named after Johann Friedrich Meckel (1809) who publishes a particular description of its anatomy and embryonic origin [4,5]. It happens on the antimesenteric edge of the ileum and may be found 10 cm to 150 cm (on average 90 cm) from the ileocaecal valve [18]. It habitually measures from 4 cm to 6 cm in length and 2 cm in diameter. It contains all the normal layers of the intestinal wall. In approximately 50% of cases, it has some evidence of ectopic gastric, pancreatic, duodenal, colonic, or biliary mucosa [12]. 60% of Meckel's diverticulum becomes symptomatic before the age of ten, and around 70% before the age of 40 years [19]. It is very often a fortuitous discovery during a laparotomy [20]. Three types of hernia have been described according to their content: the hernia of Littre (contains a Meckel's diverticulum), Richter (contains an anti-mesenteric part of the small intestine) or Amy and. (Hernia appendix) [21]. A Littre hernia containing only MD is named a true Littre hernia, while the simultaneous presence of small intestine or further abdominal viscera in the hernia sac justifies a mixed Littre hernia [22]. The significant complications of Meckel's diverticulum are represented by a bowel obstruction, intussusception, and diverticulitis and hemorrhage. Incarceration into a hernia sac or strangulation also may arise, leading to emergencies. Yamaguhi et al. revised 600 patients with asymptomatic Meckel's diverticulum, ages reaching from 1 day old to 90 years old. In their studies, the most frequent complication of Meckel's diverticulum was represented intestinal obstruction (in 36.5% of cases) followed by intussusception (in 13.7% of cases), inflammation (in 12.7% of cases), bleeding (in 11.8% of cases),

perforation (7.3% of cases) and as a component of a hernia sac or Littre's hernia (4.7% of cases) [23]. More than a few mechanisms may cause obstruction. The diverticulum may be the principal point for intussusception or volvulus around a fibrous band by which the diverticulum leftovers attached to the umbilicus. Other mechanisms of obstruction consist of entrapment of bowel within an internal hernia, frame-up between the mesentery and a mesodiverticular band, strangulation of the diverticulum in an external hernia [12]. Our patient has been operated as an incarcerated inguinal hernia, and Meckel's diverticulum in the hernia sac was found incidentally at laparotomy. The incidence of a Littre's hernia presenting in complicated abdominal hernias has been reported to be 0.6% [24]. Similarly, another study reported the incidence of finding a Meckel's diverticulum in a complicated abdominal hernia to be 0.78% of cases. Meckel's diverticulum is most commonly found in an inguinal hernia (50% of cases) followed by umbilical (20% to 30% of cases) and femoral (20% of cases) hernias [25]. A well-differentiated neuroendocrine tumor and a microscopic carcinoid were found throughout the histological examination of surgically resected MD present in Littre hernias [26,27]. Heterotopic gastric tissue was present, and related undetermined ectopic tissue was described [28-29]. All symptomatic Meckel's diverticula have to be resected, but there is still controversy about the removal of incidentally encountered asymptomatic MD [30]. Although Meckel's diverticulum is more often seen in men, Littre hernias occur more frequently in women, mostly due to the high incidence of femoral Littre hernias [31-33]. About 60.5% of the cases concerned females, male patients raised for the 72.3% of the inguinal hernias and 50%, of the Spigelian hernias (Spigel's hernia). In the case of symptomatic Littre hernia, the patient usually presents with a mass. Tenderness, fever, and vomiting are common symptoms. While fever and leukocytosis rise, mechanical intestinal obstruction habitually may not be seen in incarcerated or strangulated Littre hernia [35]. The preoperative diagnosis of a Littre hernia is difficult to institute. In the case of mechanical small intestinal obstruction, plain abdominal radiographs may demonstrate an air-fluid level. Occasionally, even in cases of incarcerated Littre hernias, there is no intestinal obstruction existing, as only MD is "trapped" and the rest bowel is free, which is a resemblance with Richter's hernia typical clinical presentation [17, 28]. Perforation might be the consequence of also peptic ulceration related to gastric acid or compromised circulation allied to strangulation [13,22,32]. The diagnosis of a herniated Meckel's diverticulum is generally made intraoperatively [36]. The role of both abdominal ultrasonography and Computed Tomography (CT) is fundamental, but frequently, they do not spread a definite diagnosis [37,38]. In our case, we have used only plain abdominal radiographs which demonstrate air-fluid level orienting to the diagnosis of small bowel obstruction. The repair of a Littre hernia consists of both hernia repair and removal of Meckel's diverticulum [8,39]. Patients are treated either by an open (94.3%) or laparoscopic (5.7%) hernia approach followed by an MD resection. Mesh was used only in 17% of cases, whereas the residual ones had a suture repair. The occurrence of incarceration or perforation and the probable field infection often make difficult the usage of mesh [40,41]. The accepted treatment for MD is wedge resection and restoration of the ileum from inside the sac. If there is edema or inflammation of the diverticulum resection and anastomosis of a segment of ileum can be necessary. It could avoid postoperative stricture of the resected segment [42,43]. If systematic inspection and proper resection are not possible through the inguinal incision, it strength be required to make another incision on the abdomen. Supporters of laparoscopic

hernia repair have described cases in which the Meckel's diverticulum was well-known and reduced laparoscopically, and then removed through a small umbilical incision [44].

Conclusion

Meckel's diverticulum can be found in any hernia particularly at the inguinal site and for this purpose incarcerated hernia should not be tried to reduce. It can be a probable discovery during a routine examination of any hernia and merits surgical attention. The specialist surgeon must execute a careful investigation of any hernial sac. In the treatment of Littre hernia, Meckel diverticulum should be removed, and it is well to perform resection and anastomosis of the ileal segment. Moreover, all surgeons should not only be attentive of this rare type of hernia but are also fortified to regularly report such cases to enrich available literature concerning best clinical managing of Littre's hernia.

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