

## A Complex Incarcerated Incisional Littre's Hernia Containing a Necrotic Meckel's Diverticulum: Rare Case Report

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### Abstract

### Case Report

Litre's hernia is the protrusion of a Meckel's diverticulum through a herniary orifice. This rare entity is often incidentally diagnosed intraoperatively during hernia repair surgery. Meckel's diverticulum is the most common gastrointestinal tract congenital anomaly and its frequency is 2% in the general population. A Littre's hernia is usually found in femoral, inguinal and umbilical hernia. Meckel's diverticulum presenting as the content of an incisional hernia is an exceptional situation, only few cases have been reported in the literature. We herein report the case of a 52-year-old female patient with a history hysterectomy who presented a complex incarcerated incisional Littre's hernia containing a necrotic Meckel's diverticulum discovered incidentally intraoperatively.

**Key words:** Littre's hernia, complex incisional hernia, Meckel's diverticulum, incarceration.

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## INTRODUCTION

Litre's hernia is defined by the presence of Meckel's diverticulum in the hernial sac [1]. Meckel's diverticulum consists of a true diverticulum composed by all layers of the intestine. It is a remnant of the omphalomesenteric duct and usually found on the antimesenteric border of the ileum, 20–90 cm from the ileocecal valve [2]. Its symptoms are non-specific and only around 4% of the patients having a Meckel's diverticulum experience related complications such as: gastrointestinal bleeding, bowel obstruction, inflammation or perforation [3]. The most common sites of Littre's hernia are femoral, inguinal and umbilical hernias [4]. An incisional hernia is a frequent complication for abdominal surgery and its common contents are omentum, small bowel and large bowel [5]. Meckel's diverticulum is an exceptional content of the ventral incisional hernia. Only a few cases have been reported in the literature [6].

We report here a case of necrotic Meckel's diverticulum that was entrapped in a complex ventral incisional hernia.

## CASE REPORT

A 52-year-old female patient with a history of obesity, diabetes, as well as open hysterectomy undertaken 10 years previously, who presented to the

emergency department for abdominal pain of 3-day evolution associated to nausea and bilious vomiting.

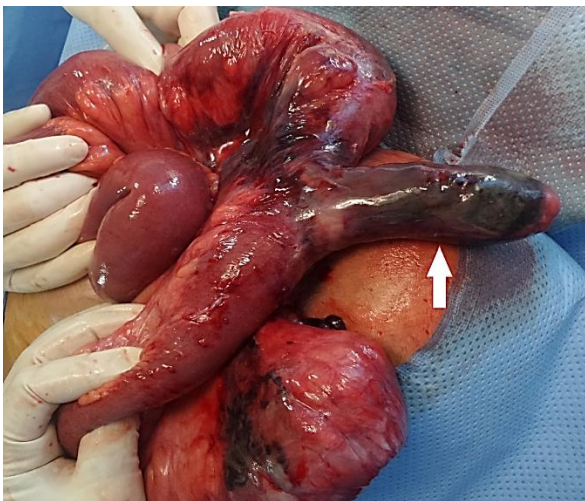
Clinical examination at admission found a patient with a temperature of 38.6°C, a blood pressure of 130/65 mmHg, a pulse rate of 110 beats per minute and dehydration. Abdominal examination found a painful irreducible multilobulated mass (Figure 1) opposite to a lower midline laparotomy scar. This 15cms mass was an evident incarcerated incisional hernia from the defect of the previous lower midline incision. And a diffuse abdominal tenderness at palpation.



**Figure 1: Image showing the complex incarcerated incisional hernia**

Laboratory tests showed White Blood Cell count 17,130/mm<sup>3</sup>, C-reactive protein at 175, normal values of blood glucose concentration, renal function and electrolytes.

The diagnosis of an incarcerated incisional hernia being retained, an emergency exploratory laparotomy through the previous incision was performed showing a complex abdominal wall defect measuring about 10 cm. Opening of the hernial sac revealed an ileum loop containing a Meckel's diverticulum (Figure 2). The Meckel's diverticulum and a part of ileum loop were necrotic. We proceeded with a resection of the ileum loop containing the Meckel's diverticulum and performed an end-to-end ileo-ileostomy. The hernia sac was excised and the abdomen was closed by herniorrhaphy with absorbable sutures avoiding the use of a prosthetic mesh due to the presence of necrosis.



**Figure 2: Intraoperative view showing a necrotic Meckel's diverticulum (Arrow)**

Postoperative recovery was uneventful and the patient was discharged from hospital at the fifth day. The anastomosis was performed subsequently 2 months later. She remains free of recurrence of the incisional hernia 20 months after surgery.

## DISCUSSION

Littre's hernia is an extremely rare clinical entity, first described by the french surgeon Alexis Littre in 1700 [7]. He described 3 cases of incarcerated femoral hernias containing a diverticulum of the small bowel from cadaverous studies. Meckel's diverticulum, being present in about 2% of adult population, is the most common gastrointestinal tract congenital anomaly [8]

Meckel's diverticulum is the most common congenital abnormality of the gastrointestinal tract, but still remaining a rare entity (2%) [8]. It is a true diverticulum comprising all intestinal layers and it is a

remnant of the omphalomesenteric duct, persistent on the distal ileum [2], which normally obliterates during the 6th week of gestation.

Meckel's diverticulum is usually asymptomatic. Only 4% become complicated and symptomatic [9]. Complications of Meckel's diverticulum include: bleeding, obstruction, diverticulitis and perforation [10]. The presence of heterotopic tissue, mainly of gastric origin, can be found in up to 50% of the cases [11] and has been associated with more frequent development of complications.

Littre's hernia is a rare complication of Meckel's diverticulum, only 1% of patients having a Meckel's diverticulum will develop a Littre's hernia [5]. The most frequent locations of Littre's Hernia are: femoral (39.6%), inguinal (34%) and umbilical hernias (11.3%). Ventral incisional hernias represent 5.7% of cases [5].

Littre's hernias occur more often in women, mainly due to the high incidence of femoral Littre hernias; despite that Meckel's diverticulum is more frequently encountered in men. Schizas and al. report that a rate of 60.4% of the cases concerned females [5]. The most severe complications of incisional hernia are incarceration and strangulation. In general, omentum, small and large intestines are found within the incarcerated hernial sac [12]. It is exceptional, that Meckel's diverticulum becomes a content of an abdominal incisional hernia. The preoperative diagnosis of this type of hernia is very difficult to establish. The diagnosis of an incisional Littre's hernia is usually made intraoperatively. Schizas and al. [5], on a study of 53 patients with a Littre's hernia, reported that the diagnosis was confirmed during surgery in all cases; despite the use of abdominal ultrasound and CT scan.

The management of Littre's hernia consists of the resection of Meckel's diverticulum and hernia repair. A diverticulectomy is sufficient if the bowel is normal but a segmental resection is indicated in the presence of a non-viable bowel [13].

For the repair of the abdominal wall defect, the use of a mesh is generally not advised because of intestinal resection or contamination of the operative field [14]. The best option is to perform a herniorrhaphy with absorbable or non-absorbable suture for the closure of the abdomen [15]. Laparoscopic reduction and repair of incarcerated Meckel's diverticulum have been reported with good results [16]. The treatment of asymptomatic Meckel's diverticulum is still a controversial issue in the literature [17].

## CONCLUSION

Incisional Littre's hernia is extremely rare clinical condition. Its diagnosis is very difficult and

made generally intraoperatively. A careful examination of hernial sac contents by the surgeon allows for the diagnosis.

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