

# Incidental finding of Littre's hernia during inguinal hernioplasty. A case report.

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## Case Report

### GENERAL SURGERY



**Abstract:** Littre's hernia is defined by the presence of a Meckel's diverticulum in a hernial sac. Embryologically, Meckel's diverticulum is the persistence of the intestinal part of the omphalomesenteric duct through which the midgut communicates with the umbilical vesicle until the 5th week of development. The cells that cover the yolk canal are pluripotent, it contains gastric, pancreatic, and less commonly hepatobiliary, duodenal, colonic, endometrial, or Brunner's glands.

A 63-year-old male patient is admitted to our institution sent from the outpatient clinic, scheduled for right inguinal plasty, with increased volume in the scrotal region, without changes in coloration and with no data on intestinal occlusion for one year of evolution. In the intraoperative period, Meckel's diverticulum was found inside the hernial sac incidentally and it was decided not to resect it.

The treatment of Meckel's diverticulum is controversial and there is still no absolute criteria for the resection of an asymptomatic diverticulum.

**Keywords:** Littre's hernia, abdominal wall hernia, abdominal hernia.

## Introduction

Littre's hernia is defined by the presence of a Meckel's diverticulum in a hernial sac.<sup>1</sup> Etymologically the word hernia comes from the Greek word "epivos" (sprout) and "hira" (intestine), or from the Latin that translates as rupture. Hernia is understood as the protrusion of an intra-abdominal element through an anatomically constituted hole. In general, the elements that can protrude in a hernia are: omentum, preperitoneal fat or an organ other than the intestine, this being the most frequent in presentation.<sup>2</sup>

In the early 18th century, the French physician and anatomist, Alexis de Littre, originally reported ileal diverticula. In 1785 August Gottlieb Richter explained its congenital existence, and later in 1809, Johann Friedrich Meckel studied the embryology of its development. Finally, Sir Frederic Treves described the differences between Littre and Richter's hernia.<sup>1</sup>

Embryologically, Meckel's diverticulum is the persistence of the intestinal part of the omphalomesenteric duct through which the midgut communicates with the umbilical vesicle until the 5th week of development.<sup>3</sup>

Meckel's diverticulum is a true diverticulum that involves all layers of the intestinal wall. Typically within 100 cm proximal to the ileocecal valve at the anti-mesenteric border. Its blood supply derives from the right vitelline artery, which subsequently becomes the superior mesenteric artery. A connection to the umbilicus via a fibrous band may be present, but more frequently it is free and isolated.<sup>4</sup>

Meckel's diverticulum is the most common congenital abnormality in the gastrointestinal system, reporting an incidence of 0.6-4%. The first descriptions of this were in 1650 by Fabricus Heldanus, but the name is attributed to the comparative anatomist Johann Friedrich Meckel.<sup>5</sup>

The cells that cover the yolk canal are pluripotent, it contains gastric tissue (50%), pancreatic (5%) and less commonly hepatobiliary, duodenal, colon, endometrial tissue or Brunner's glands.<sup>5</sup>

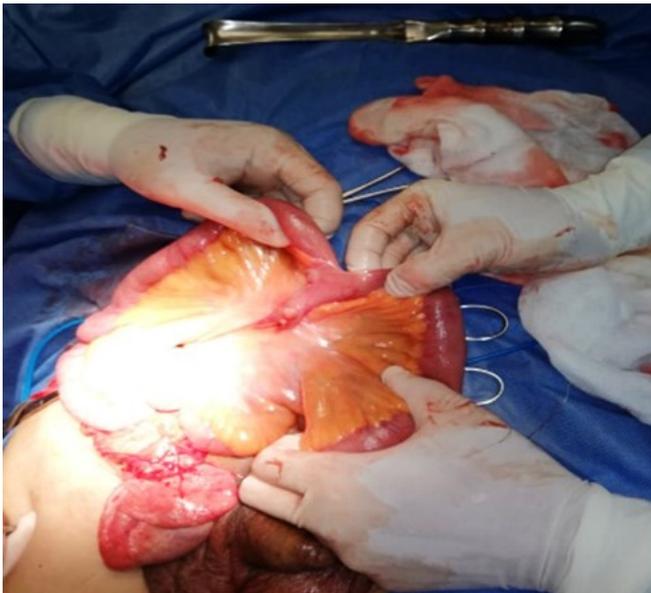
## Case report

This is a 63-year-old male patient, weighing 56 kilograms, height 1.53 meters, with a history of systemic arterial hypertension under medical treatment with amlodipine 5 mg every 12 hours, in addition to a relevant history for the clinical picture of plasty left groin performed 12 years before his admission to our institution.

He was admitted to our institution from the outpatient clinic scheduled for a right inguinal plasty, with a picture of increased volume in the inguinoscrotal region, with no changes in coloration and no data on intestinal occlusion of one year of evolution.

Upon admission, a complete physical examination was performed, finding the right inguinal region with the presence of increased volume in the scrotal inguinal area, where an increase in size was

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**Figure 1.** Inguino-scrotal hernia, small intestine with presence of Meckel's diverticulum.

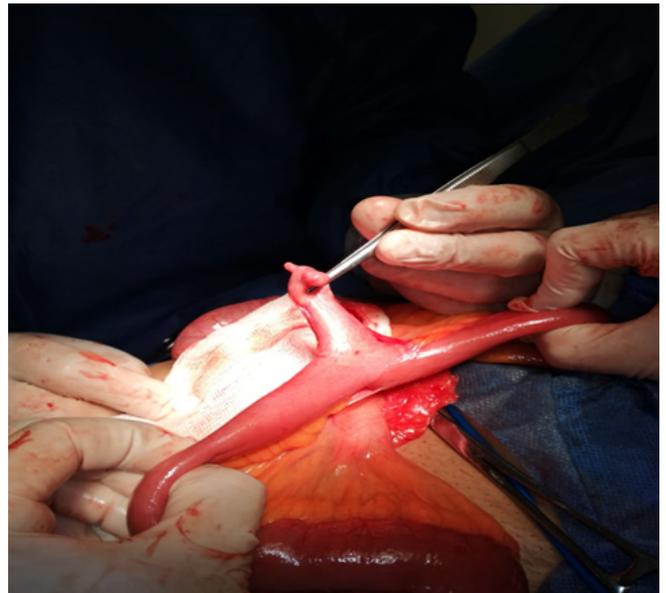
documented with the Valsalva maneuver, Positive Landivar's maneuver is observed in the scrotal region, showing a 10x10 cm volume increase compatible with hydrocele. Laboratory and office studies are carried out that report, hematic cytometry and blood chemistry without alterations and inguinal ultrasound with the presence of an inguino-scrotal hernia, with small intestine content, without data of intestinal suffering.

### Surgical technique

The patient was admitted to the operating room, with a diagnosis of inguinoscrotal hernia plus right hydrocele.

The patient is placed in dorsal decubitus, after subarachnoid blockage, antisepsis asepsis is continued, sterile fields are placed, incision is made at the level of the scrotal raphe, it is dissected in layers until locating the vaginal peritoneum, a 10x10 cm hydrocele is found, the peritoneal layer is incised and approximately 120 ml of citrine content is aspirated, the vaginal peritoneum is everted and closed with a continuous point with 2-0 chromic, the scrotum is faced with chromic 2-0.

Subsequently, a transverse incision is made in the inguinal region of 6 cm in length, it is incised in layers with electrocautery, camper's fascia, Scarpa's fascia, until reaching the aponeurosis of the external oblique muscle, a superficial inguinal hole is located and an incision is made on the aponeurosis in direction to superficial inguinal orifice, Two aponeurosis flaps are performed and later dissection of the medial flap to dissect the joint tendon and the lateral flap until locating the inguinal ligament, then the cremaster muscle is incised and the hernial sac is dissected,



**Figure 2.** Meckel's diverticulum, 90 cm from the ileocecal valve, with a 2 cm base, 4 cm in height, with no evidence of intestinal distress or intussusception.

which is up to the scrotum, being an indirect hernia according to the Nyhus 2B classification, vas deferens and vas deferens are located which are referred with umbilical tape and hernial sac is dissected, then Kelly forceps are placed at the ends of the sac to impinge on it, finding small intestine (**Figure 1**) As content, when reviewing the small intestine, a Meckel's diverticulum is located; in view of this finding, Noble's maneuver is performed, finding the same diverticulum at 90 cm from the ileocecal valve, with a thin base of 2 in diameter, height of 5 cm, with no data on suffering intestinal, without intussusception. As it was an asymptomatic diverticulum and without criteria for its resection (**Figure 2**), intestinal content was returned and a high ligation was performed at 2 cm from the deep inguinal orifice of the hernial sac with transfiction points with 1-0 vycril, then cooper's ligament was dissected and a polypropylene mesh is placed which is fixed to said ligament and inguinal ligament with continuous surge with 2-0 prolene, It is fixed to the joint tendon with simple stitches with 2-0 prolene, the aponeurosis is closed with 1-0 vycril, ¼ Drenovac is placed from the inguinal region and it is extracted in writing, cellular tissue is closed with 3-0 vycril and skin with prolene 3-0.

### Discussion

Meckel's diverticulum is usually found on the anti-mesenteric border of the ileum, 20-90 cm from the ileocecal valve. Usually it does not present specific symptoms and only 4% of patients, having a Meckel's diverticulum, experience complications, these include gastrointestinal bleeding, intestinal obstruction,



**Figure 3.** Liechtenstein technical tension-free inguinal plasty and hydrocelectomy, with Drenovac placement in the scrotum.

inflammation and perforation.<sup>1</sup> 40% of these complications are seen in children under 10 years of age. The most common complication in adults is intestinal obstruction, while in children it is the second most common. In adults, the second most common complication is related to the inflammatory process, the combined rate of diverticulitis and perforation is almost 20% and it can usually not be easily differentiated from acute appendicitis until observed by laparotomy, acute inflammation of the diverticulum can be caused by obstruction of the diverticular opening by an enterolith, inflammatory tissue, food, parasites, tumors, or foreign body.<sup>5</sup>

Establishing the diagnosis of a symptomatic Meckel's diverticulum is difficult preoperatively, although symptoms can appear at any age, they are more common in children.<sup>5</sup>

The usual sites of Littre's hernia are: inguinal (50%), umbilical (20%), and femoral (20%).<sup>3</sup> The diagnosis is similar to that of another hernia containing small intestine and as a result, its diagnosis is regularly made intraoperatively.<sup>1</sup>

Our patient is scheduled for outpatient consultation to perform an inguinal plasty, since an indirect inguinal hernia was found clinically and by imaging studies, in addition to the additional presence of a hydrocele. During the surgery, in the inguinal approach, there is a Nyhus II inguinal hernia, as well as the content of the hernial sac, the presence of a diverticulum, which by appearance and clinic, in addition to its location 90 cm from the ileocecal valve, 2 cm, and 5 cm high, with no evidence of intestinal distress or intestinal obstruction, the clinical diagnosis of Meckel's diverticulum was reached. As relevance in its management, the information reported in the bibliography should be considered, so it was decided

not to resect it, due to being an incidental finding during the procedure, the diameter of its base and in the same way its presence in an indirect inguinal hernia. same that required at the time of the use of prosthetic material for repair.

Treatment of symptomatic Meckel's diverticulum is definitely surgery, including diverticulectomy, wedge or segmental resection by open or laparoscopic intervention.

The type of procedure performed for the resection of symptomatic Meckel's diverticulum depends on the integrity of the base of the diverticulum and the adjacent ileum, and the presence and location of the ectopic tissue, however, the presence of ectopic tissue cannot be adequately predicted intraoperatively by palpation and macroscopic appearance, when it is present, its location can be predicted based on the height-diameter ratio of long diverticula (height-diameter ratio > 2) have ectopic tissue located on the body and tip, while short diverticula have a wide distribution of ectopic tissue including at the base. (6)

The management of incidentally discovered Meckel diverticula remains controversial. It is reasonable to make the decision based on the presence of risk factors for possible future complications. In a retrospective study of 1476 patients with Meckel's diverticulum, it was shown that the patient's age under 50 years, male sex, diverticulum measurement > 2 cm, and ectopic or abnormal characteristics in the diverticulum were all associated risk factors. upon development of future complications, the authors recommended resection of all Meckel diverticula that met any of these four criteria. (7)

It should be noted that there is an associated indirect inguinal hernia, whose etiopathogenesis is the persistence of the peritoneum-vaginal duct, however the relevance is the finding of Meckel's diverticulum, that its etiopathogenesis is the persistence of the omphalomesenteric duct. As can be explained in our case, the relevance lies in the low prevalence of this condition and in the same way, the superposition of the associated conditions; inguinal hernia, hydrocele and Meckel's diverticulum. The coexistence of these diseases can make one or the other go unnoticed, due to their different etiopathogenic mechanism. The treatment of Meckel's diverticulum is controversial and there is still no absolute criterion for resection of an asymptomatic diverticulum.

## Conclusion

Meckel's diverticulum represents the most common congenital anomaly of the gastrointestinal tract, however its presentation as an inguinal hernia, that is, a Littre hernia, is rare in our environment, even

more so in elderly patients, such as our patient. The decision to resect the diverticulum or not remains controversial; however, it is undeniable that the fact of placing prosthetic material for the repair of the hernia in our patient, added to his age, and the macroscopic characteristics of the Meckel diverticulum that our patient presented they made us decide not to resect the diverticulum.

### Conflicts of interests

The authors have no conflicts of interest to declare

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