

# Obstructed Inguinal Littre's hernia: A Case Report and Mini Review

## Abstract

Meckel diverticulum is the most common congenital anomaly of the gastrointestinal tract. Any hernia sacs containing Meckel's diverticulum is called Littre's hernia. This term was coined after the pioneering work of Alexis Littre, a French surgeon, who, in the 1700s, documented three instances of femoral hernias containing a small bowel diverticulum. Since then, hernias encompassing Meckel's diverticulum have been designated as Littre's hernias. It's a relatively rare variation, making up approximately 10% of all complications associated with Meckel's diverticulum. Among Littre's hernias, around 50% occur in the inguinal region, 20% in the femoral region, 20% in the umbilical region, and the remaining 10% in other locations. Due to its infrequent occurrence, Littre's hernia is usually not suspected, and preoperative diagnosis is unlikely.

We would like to present a unique case involving a 20-year-old boy with an incarcerated Littre's hernia in the right inguinal region, which was effectively managed through wedge resection of the Meckel's diverticulum followed by hernia repair.

## Keywords

Littre's hernia, Meckel's diverticulum, Intestinal obstruction

## Introduction

“Meckel's diverticulum is the most common congenital anomaly in the intestinal tract, with reported incidences ranging from 0.6% to 4%. This anomaly is a true diverticulum, consisting of all three layers of the gut, and is typically located 30-90 cm from the ileocecal junction on the anti-mesenteric border of the ileum. It originates from the incomplete regression of the omphaloenteric duct during the fifth week of gestation. The mucosa of Meckel's diverticulum may contain ectopic gastric tissue in 30-50% of cases, pancreatic tissue in 5-16% of cases, and occasionally colonic tissue. This condition can lead to various complications, including intestinal obstruction, bleeding, intussusception, and perforation. One rare complication is the protrusion of Meckel's diverticulum into a hernial sac, which is termed Littre's hernia. Littre's hernia is an extremely uncommon occurrence, accounting for only 1% of all cases of Meckel's diverticulum. The actual incidence of Littre's hernia has been reported to be as low as 0.09% among incarcerated or strangulated hernias”. [1,2,4]

“Littre's hernia presents similarly to other hernias, occurring in inguinal, femoral, or umbilical locations and causing symptoms and complications typical of hernias. The herniated portion of the intestine can become obstructed, incarcerated, or even strangulated, just like other hernias. As a result, a definitive diagnosis is usually made during exploratory surgery of the hernial sac” [2].

Currently, two distinct types of Littre's hernias are recognized:

1. True Littre's hernia, which includes a single Meckel's diverticulum.
2. Combined Littre's hernia, where a Meckel's diverticulum is accompanied by another organ or structure within the hernial sac. [2,4,3]

Littre's hernia is typically an incidental finding during surgery, and its preoperative diagnosis is particularly challenging.

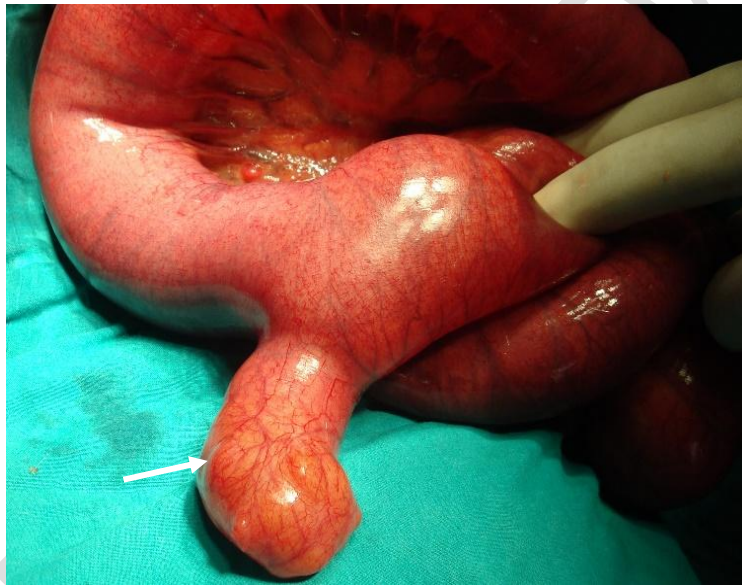
## Case Presentation

On July 15, 2009, a 20-year-old male patient was admitted with a diagnosis of an obstructed Right Inguinal hernia. The patient was in stable hemodynamic condition, and a physical examination revealed a palpable, tense, tender, and irreducible Right Inguinoscrotal swelling measuring 4x3 cm in

size. The clinical assessment confirmed an incarcerated Right inguinal hernia. Diagnostic investigations included ultrasonography, which displayed dilated bowel loops within the hernia sac, and abdominal radiography, which indicated a small bowel obstruction. Biochemical and haematological tests conducted in the preoperative period yielded normal results.

The patient underwent an immediate surgical procedure to explore the Right Inguinal canal under spinal anaesthesia. The exploration of the hernia sac unveiled a 4 cm long, non-gangrenous Meckel's diverticulum that was incarcerated within the sac. To relieve the obstruction, the deep inguinal ring was widened, and the ileal loops were carefully brought into the surgical field to rule out other potential pathologies. Both the diverticulum and ileum regained their normal colour and blood flow, and no signs of gangrene were observed in the Meckel's diverticulum or small bowel. Consequently, the decision was made to perform a wedge resection of the Meckel's diverticulum. The remaining healthy bowel was repositioned back into the abdominal cavity, followed by the repair of the inguinal hernia using Bassini's herniorrhaphy (**Figure 1, 2, 3**).

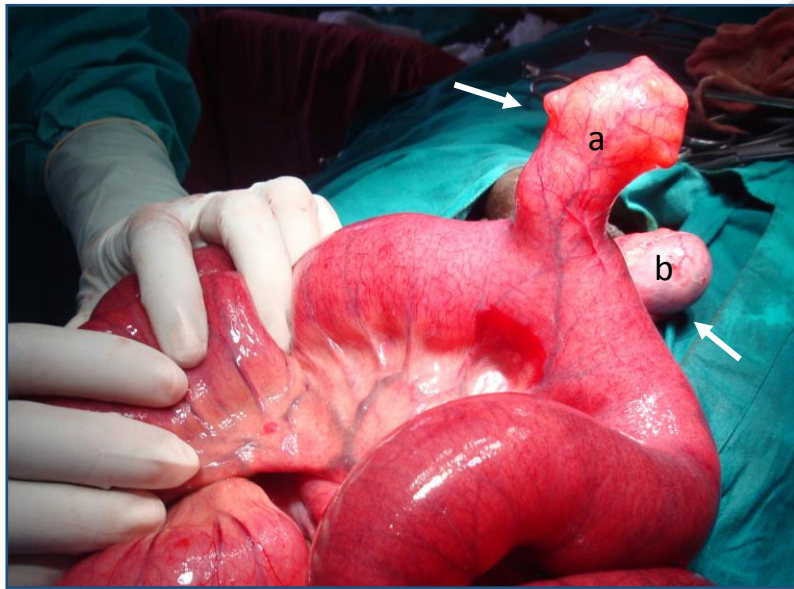
The post-operative period proceeded without any complications, and the patient was discharged on the seventh day after the surgery. The histopathological report of the resected specimen confirmed the presence of Meckel's diverticulum without any ectopic tissue.



**Figure 1- Intra-operative photograph  
Showing Meckel's diverticulum of Size 4x2cm**



**Figure 2- Intra-operative photograph  
Showing a- Meckel's diverticulum, b- right testis**



**Figure 3- Intra-operative photograph  
Showing a- Meckel's diverticulum, b- right testis**

## Discussion

Meckel's diverticulum is the most common congenital gut anomaly. It follows the "rule of two," which means it's found in about 2% of the population, is typically diagnosed before the age of 2, measures approximately 2 inches in length and 2 cm in diameter, is situated around 2 feet proximal to the ileo-ileal junction, is twice as common in males, and becomes symptomatic in roughly 2% of patients. [1,2,5]

Groin hernias are prone to complications such as incarceration or strangulation. Littre's hernia contains Meckel's diverticulum, an Amyand hernia contains the appendix, and Richter's hernia contains a portion of the small intestine on the anti-mesenteric side. In cases of Littre's hernia, clues include a history of rectal bleeding, unsuccessful manual reduction, or the presence of a fecal fistula, all of which should raise suspicion of Littre's hernia. It is advisable to remove incidentally discovered Meckel's diverticula that meet the following criteria: the patient is under 50 years of age, the Meckel's diverticulum is longer than 2 cm, has a broad base, is attached to fibrous bands, and histopathologically contains ectopic gastric or pancreatic tissue. [1,6,2]

In our case, we performed a wedge resection of Meckel's diverticulum because it exceeded 2 cm in length, had a broad base, and no palpable mass was present. Additionally, we conducted a Bassini's hernioplasty.

The most frequent clinical presentations of Meckel's diverticulum are bleeding, obstruction, intussusception, and inflammation (diverticulitis). The diagnosis is confirmed through various methods, including ultrasonography, CT scans, and Technetium-99m scans. In many cases, Meckel's diverticulum is incidentally discovered during laparotomy or hernia surgery. Regarding complications related to Meckel's diverticulum, intestinal obstruction is the most common, accounting for 36.5% of cases, followed by intussusception (30.7%), inflammation (12.7%), haemorrhage (11.8%), and perforation (7.3%). [8,10]

### **Mini Review of the literature**

A systematic review was conducted on the PubMed database using a search query that included the terms "Meckel's diverticulum" and "Littre hernia." The search was performed on March 5, 2022, and it initially retrieved 89 articles, which collectively reported 98 cases of Littre's hernia. Our two cases, which are included in this total, bring the count to 99 and 100 cases of Littre's hernia as of October 2023. The details of our first case were published in the Asian Journal of Case Reports on April 24, 2023. It focused on Littre's hernia in a child and provided a comprehensive review of the existing literature. The second case, concerning an obstructed inguinal Littre's hernia, is set to be published in the same journal. [1,10,]

### **Conclusion**

Littre's hernia, making its preoperative diagnosis is a big challenge. The Meckel's diverticulum present in Littre's hernia should always be resected. Furthermore, surgeons worldwide must diligently emphasize and report more cases of this rare ailment in order to improve the literature with better diagnostic and therapeutic methods for this rare condition.

### **Ethical Approval:**

As per international standard or university standards written ethical approval has been collected and preserved by the author(s).

### **Consent**

As per international standard or university standards, patient(s) written consent has been collected and preserved by the author(s).

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