

## Strangulated Meckel's diverticulum in Inguinal canal: Littre's Hernia

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### Abstract

Meckel's diverticulum is a congenital anomaly of the gastrointestinal tract, occurring in 2-3% of the population. It is generally asymptomatic and only manifests in a specific way when complications exist. The most common complications are obstruction of the small intestine, hemorrhage from ectopic gastric ulceration and diverticulitis. An unusual complication is entrapment of Meckel's diverticulum in hernia, known as Littre's hernia representing 10% of all complications of Meckel's diverticulum. Clinically it is difficult to distinguish between involvement of a small bowel loop and Meckel's in an inguinal hernia and accurate preoperative diagnosis is seldom made. Most of them are clinically silent and often incidentally found during laparotomy or in an inguinal incision. We present a case of strangulated inguinal hernia with Meckel's diverticulum as content and discussed the options of surgical management of asymptomatic/incidentally detected diverticula.

### Introduction

Meckel's diverticulum is a congenital anomaly of the gastrointestinal tract, occurring in 2-3% of the population [1]. It is a true diverticulum found in the anti-mesenteric border. It is the remnant of the persistent intestinal part of the vitello-intestinal or omphalo-enteric duct and comprises of all intestinal layers. It is generally asymptomatic and only manifests in a specific way when complications exist. The most common complications are obstruction of the small intestine, hemorrhage from ectopic gastric ulceration and diverticulitis [2]. An unusual complication is entrapment of Meckel's diverticulum in hernia, known as Littre's hernia representing 10% of all complications of Meckel's diverticulum [3,4]. Its diagnosis is usually difficult despite the availability of modern investigative tools. In most cases it is an incidental finding. We herein present an extremely rare case of strangulated Meckel's diverticulum in an Inguinal Hernia (Littre's Hernia) which only became evident during surgery.

### Case Report

A 73-year-old man came to the emergency department with complaints of pain and swelling in right groin since 1 day. Pain was continuous, severe associated with vomiting, obstipation. He was known to have the swelling for last two years which was painless and was easily reduced. The patient's physical examination revealed a markedly diminished general condition, febrile, had tachycardia but was normotensive. Abdominal examination showed mild distension and exaggerated bowel sounds. However, on local examination of right groin a firm and tender mass palpated extending to bottom of scrotum. The swelling was non-pulsatile, non-reducible, warmth. A plain X ray film of the abdomen showed distended bowel loops with multiple air fluid levels suggestive of obstruction. His lab studies showed increased

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blood leucocyte count. Ultrasound showed bowel loop in the sac with loss of vascularity. The diagnosis of strangulated inguinal hernia was made. The patient was admitted to the operating room after further workup. Surgery was done by inguinal approach. Sac was opened and meckel's diverticulum was noted which is distended and gangrenous, and a part of ileum was also ischemic. The diverticulum is approximately 8 cm in length which is completely gangrenous. Resection of small bowel with diverticulum was done and end-to-end anastomosis was performed. Herniorrhaphy by tissue approximation repair using Bassini's technique was done and no mesh was placed. The post-operative course was uneventful. Follow up period for 6 months showed no recurrence or further complications.

## Discussion

Meckel's diverticulum is the most common congenital anomaly of the small intestine, with an estimated incidence of approximately 2% [5]. It is a true diverticulum comprising of all the intestinal layers [6,7]. It is the result of a persisting vitello-intestinal duct that normally disappears. The incidence of complications in those with a Meckel's diverticulum has been reported to be 4% [8]. These complications include diverticulitis, GI bleeding, intestinal obstruction, band formation, strangulation, malignancy. Strangulation, perforation and herniation are extremely rare. In 1700, Alexis Littre, a French surgeon was the first to report three cases of incarcerated femoral hernia containing a small bowel diverticulum. Since then hernia sacs containing only Meckel's diverticulum have been called Littre's hernia [9]. Littre's hernia is caused by the protrusion of Meckel's diverticulum through a hernial orifice [10]. Its incidence is unknown. The usual sites of Littre's hernia are inguinal (50%), umbilical (20%), femoral (20%), incisional and others (10%) [11]. Clinically, it is difficult to distinguish between involvement of a small bowel loop and meckel's in an inguinal hernia and accurate preoperative diagnosis is seldom made. Most of them are clinically silent and often incidentally found during laparotomy or in an inguinal incision as in our case. Only 4-6% of cases of meckel diverticulum will produce symptoms (more frequent during infancy). Painless gastrointestinal bleeding is more common as an initial presentation in children, occurring in 10.9 to 38.9% of cases and the majority of cases are located in umbilical hernias [10]. In adults, painful inflammation (diverticulitis) or bowel obstruction are the more common presentations. Bowel obstruction results from intussusception, inflammation, omphalomesenteric bands, adhesions, or adenocarcinoma, and accounts for 26.2 to 53.4% of complications. Symptomatic meckel's diverticulum should be removed surgically, in addition, pathologic diverticula found incidentally on laparotomy should also be removed [9]. However, the management of incidentally discovered asymptomatic diverticula is much more controversial. Some feel that they should not

be removed or perhaps only removed in younger patients [9]. Some authors advocate resection of diverticula in all patients regardless of age or pathology while others recommend resection of incidentally detected diverticula during surgery. Surgical resection consists of either simple diverticulectomy or bowel resection of the involved small bowel and primary anastomosis depending on the clinical situation [12]. Some surgeons prefer an ileocecal resection rather than a simple excision given the possibility of ectopic tissue extending beyond the diverticulum. It would be wise to resect the meckel's diverticulum that was found incidentally during surgery to prevent such complications of bleeding, obstruction, strangulation. On the other hand, incidentally detected Meckel's diverticulum on imaging may be left alone with a caution of close follow-up.

## Conflicts of Interest

Authors declare no financial or non-financial conflicts of interest related to the subject matter or materials discussed in the manuscript.

## Ethical Committee

No Ethical committee approval required.

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