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## Rare Presentations of Meckel's Diverticulum: A Case Series from a Tertiary Care Center

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### KEYWORDS

Meckel's diverticulum, Littre's hernia, umbilical hernia, bowel perforation, foreign body

### ABSTRACT:

**Background:** Meckel's diverticulum (MD) is the most common congenital anomaly of the gastrointestinal tract, but it often presents asymptotically. Rarely, MD may lead to unusual complications, posing diagnostic and therapeutic challenges. This case series presents three unique manifestations of MD: perforation by an ingested animal bone, MD as a content of an umbilical hernia, and MD presenting as Littre's hernia in an inguinal sac. We emphasize the importance of maintaining a high index of suspicion, using appropriate diagnostic modalities, and employing timely surgical management to prevent morbidity. Awareness of such atypical presentations can aid clinicians in early detection and better patient outcomes.

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### INTRODUCTION

Meckel's diverticulum (MD) is a congenital anomaly resulting from incomplete obliteration of the vitelline duct, with a prevalence of approximately 2% in the population. Located on the antimesenteric border of the ileum, it often remains asymptomatic but can present with complications such as gastrointestinal bleeding, obstruction, inflammation, or perforation. Rare cases may involve MD in hernia sacs or perforation due to foreign bodies, leading to unique diagnostic dilemmas.

This case series highlights three uncommon presentations of MD: perforation by an animal bone, its presence in an umbilical hernia, and Littre's hernia. These cases underscore the need for heightened clinical suspicion, particularly in patients presenting with atypical abdominal symptoms. We discuss the diagnostic modalities, surgical interventions, and patient outcomes to provide insight into managing such rare cases effectively.

### MATERIALS AND METHODS

**Study Design:** This is a retrospective case series reviewing rare presentations of MD in a tertiary care center.

**Setting:** The study was conducted in the general surgery and emergency medicine departments of a tertiary care hospital, with data retrieved from patient records, imaging reports, operative findings, and histopathology reports.

**Sample Size:** Three patients with rare complications of MD were included.

#### Inclusion Criteria:

1. Patients diagnosed with MD intraoperatively or through imaging.
2. Cases presenting with rare complications such as perforation by a foreign body, umbilical herniation, or Littre's hernia.
3. Patients undergoing surgical management with histopathological confirmation of MD.



**Exclusion Criteria:**

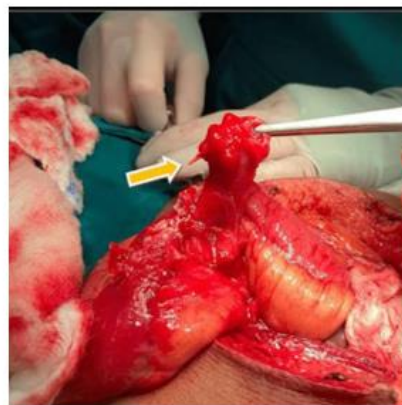
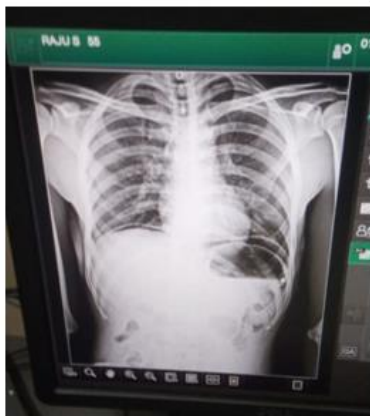
1. Asymptomatic or incidentally detected MD cases.
2. Cases with incomplete medical records or lacking histopathological confirmation.
3. Patients with primary gastrointestinal pathologies mimicking MD.
4. Pediatric patients (age <18 years) unless presenting with the specified rare complications.

**OBSERVATIONS**

**Case 1: Perforation of Meckel’s Diverticulum by an Ingested Animal Bone**

Presentation: Acute abdominal pain, fever, and signs of peritonitis in a middle-aged male.

Diagnosis: xray abdomen erect revealed air under diaphragm



**Figure 1**

Intraoperative Findings: A perforated MD with an embedded sharp animal bone.

Management: Segmental ileal resection with primary anastomosis.

Outcome: Uneventful postoperative recovery.

**Case 2: Meckel’s Diverticulum as a Content of an Umbilical Hernia**

Presentation: Reducible umbilical swelling with cough impulse

Diagnosis: Ultrasound suggested an umbilical hernia with bowel content.



**Figure 1**



Intraoperative Findings: MD found within the umbilical hernia sac.

Management: Hernia repair with diverticulectomy.

Outcome: Smooth postoperative recovery.

**Case 3: Littre's Hernia (Meckel's Diverticulum in an Inguinal Hernia Sac)**

Presentation: Painful right inguinal swelling with features of intestinal obstruction. swelling in left groin

since birth, initially painless and reducible, now painful and irreducible

Diagnosis: USG showed a herniated bowel loop in the inguinal region

Intraoperative Findings: Gangrenous and Necrosed MD was found inside the hernia sac.

Management: Resection of the diverticulum with hernia repair.

Outcome: Uncomplicated postoperative recovery.



**Statistical Overview (Based on 72 MD Patients)**

Asymptomatic cases: 24

Symptomatic cases: (Gastrointestinal bleeding 14, obstruction 17, perforation 4, diverticulitis 9)

Rare presentations: Perforation by foreign body (1), MD in umbilical hernia (2), Littre's hernia (1)

Diagnostic tools: CT scan (40%), Meckel's scan (25%), ultrasound (20%), intraoperative diagnosis (15%)

Surgical management: Diverticulectomy (50%), bowel resection (20%), hernia repair with diverticulectomy (5%)

Histopathology: Ectopic gastric mucosa (53.3%), pancreatic tissue (13.3%)

Postoperative complications: 10%

Mortality: 0%

**DISCUSSION**

These cases highlight the spectrum of rare MD presentations, emphasizing the importance of timely diagnosis and intervention. MD perforation by a foreign body is an uncommon but serious complication. Similarly, its presence in umbilical and inguinal hernias, though rare, should be considered when evaluating hernias with atypical presentations. Preoperative imaging plays a crucial role, but surgical exploration often provides definitive diagnosis and treatment.

Early surgical management remains key to reducing morbidity. Laparoscopic approaches, where feasible, may enhance outcomes. Histopathological analysis is essential for confirming MD and identifying ectopic tissue. Awareness of these rare presentations is crucial



for optimizing patient care and avoiding delays in management.

## CONCLUSION

Meckel's diverticulum can present with a variety of rare complications, requiring careful evaluation and prompt surgical intervention. This case series underscores the need for a high index of suspicion in patients with atypical abdominal symptoms. Increased awareness and improved diagnostic strategies will aid in timely intervention, reducing morbidity and improving patient outcomes.

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## ABBREVIATIONS

MD – Meckel's Diverticulum

GI – Gastrointestinal

CT – Computed Tomography

USG – Ultrasonography

LHR – Littre's Hernia

HPE – Histopathological Examination

IV – Intravenous