ORIGINAL RESEARCH PAPER
Volume - 13 | Issue - 11 | November - 2024 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

PERFORATED MECKEL'S DIVERTIVULUM IN A NON ROTATED GUT, A SURPRISE TO THE SURGEON.

General Surgery

Dr B Shanthi Ms Dgo Director, Institute Of General Surgery, Madras Medical College , Chennai , Tamil Nadu, India

Dr Kalpana Devi Ms Dgo Associate Professor, Institute Of General Surgery, Madras Medical College, Chennai, Tamil Nadu, India

Dr Mohammed Sadath Ali* Resident , Institute Of General Surgery, Madras Medical College , Chennai , Tamil Nadu , India *Corresponding Author

ABSTRACT

The clinical presentation of congenital abnormalities in adult life is rare. They make their appearance in early childhood. A combination of two different congenital deformities is even more infrequent, a fact that might complicate the differential diagnosis of acute abdomen. This is a case report of a perforated Meckel's diverticulum in a 59-year-old male with intestinal non rotation presented in an acute setting. The patient presented at the emergency department with an atypical abdominal pain located in the right abdomen and quite elevated inflammatory markers. Xray revealed pneumoperitoneum and gas under diaphragm. Computed tomography revealed gas under diaphragm in combination with intestinal non roation. Intraoperatively surprised to see a perforated meckels diverticulum 2 feet prior to the ileocecal valve. A resecrion of bowel with a side-to-side anastomosis was performed, and the patient was discharged uneventfully. Only a few cases of this combination have been reported in the literature till nowadays. It is a reminder that congenital abnormalities might make their clinical appearance not only in early childhood but also in adult life, pointing out the ability of the general surgeon to deal with such cases.

KEYWORDS

acute abdomen, congenital abnormalities, midgut nonrotation, intestinal malrotation, meckel's diverticulum

INTRODUCTION

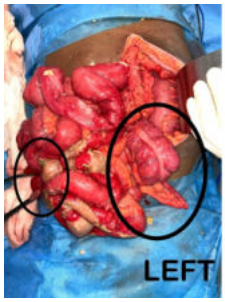
Congenital abnormalities of the gastrointestinal tract, such as Meckel's diverticulum and intestinal non rotation, are rare clinical entities, and they usually present clinically in early childhood. Meckel's diverticulum appears in a prevalence ranging between 0.3% and 2.9% of the population. Only 3% of the cases become symptomatic. Likewise, the incidence of intestinal non roatition is estimated at about 1 in 6000 births. Though the real percentage is higher since many individuals remain asymptomatic. The coexistence of different congenital abnormalities is also possible. Because of the rarity of this clinical condition, the differential diagnosis of abdominal pain may become complicated and even delayed. The computed tomography scan nowadays is a useful and widely available diagnostic tool that determines further therapeutic management.

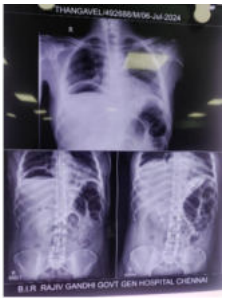
Case Report

A 59-old Asian male presented to the emergency department with a history of 3-day right abdominal pain, progressively deteriorating, and coexisting anorexia. No history of previous abdominal surgery or any health problems from his medical history were noted.

His vital signs were; the blood pressure was 125/72 mm Hg with 110 heartbeats per minute, 95% oxygen saturation, and a temperature of 39.2 degrees Celsius. The clinical examination revealed tenderness in the right lower, as well as upper, abdominal quadrant. Blood tests revealed elevated inflammatory markers, white blood cells were 12000 x 10^3 /μL (3800-10500x10^3), with 74% neutrophils, and C-reactive protein was 17,4 mg/L (>6 mg/L).

Ultrasound of the right lower abdomen was inconclusive. Xray done and gas under diaphragm was found. Investigation proceed with a computed tomography scan, in which alteration of SMA and SMV axis mentioned along with pneumoperitoneum and hollow viscous non rotation.





Moreover, the cecum, the ascending colon, and the appendix were located at the left side, whereas the small intestine was lying lateral to the ascending colon to the right side suggesting intestinal non-rotation.

The patient underwent an exploratory laparotomy, where through a midline incision, the inflamed and perforated Meckel's diverticulum was found two feet prior to the cecum which was on the left side.

Proceeded with a resection and hand held end to end anastomosis. The small intestine was repositioned to the right side of the abdomen, whereas the ascending colon and cecum to the midline. The laparoscopic approach was not considered a safe option based on the atypical anatomic location of the inflamed Meckel's diverticulum and the lack of experience of our center with the management of congenital abnormalities.

The histopathology report confirmed the diagnosis of an inflamed Meckel's diverticulum, 4 cm in size, containing ectopic gastric tissue. The postoperative period was uneventful, and the patient was discharged on the fourth postoperative day. During a follow-up period of 6 months, the patient presented no recurrence of the abdominal pain or any other pathological symptoms.

DISCUSSION

One of the most prevalent gastrointestinal tract anatomic abnormalities is Meckel's diverticulum. based on Hansen and Soreide's most recent systematic study. It happens when the omphalomesenteric duct is not completely erased during development. Given that over 50% of patients who develop symptoms are younger than ten years old, it is regarded as a disease of the youth and has a pronounced male predominance (1.5–4 men for every female). Three percent or so of the patients will develop symptoms and require surgery.

When Ladd's bands are present, the most frequent clinical signs of Meckel's diverticulum include bleeding due to ectopic pancreatic or stomach tissue, inflammation (diverticulitis) that can progress to perforation and consequently peritonitis, and obstruction by the mechanism of intussusception or volvulus. In rare instances, Meckel's diverticulum may also manifest as Littre's hernia, an inguinal hernia. Although they are rare, benign or malignant tumors can develop.

The fourth to tenth weeks of the embryonic phase are when the midgut forms. The small bowel first revolves around the superior mesentery artery axis in a 90-degree counterclockwise direction. The small bowel then takes its final location in the peritoneal cavity after elongating and rotating 180 degrees counterclockwise. An estimated 1 in 6000 babies are born with symptomatic intestinal malrotation. Intestinal malrotation occurs in 90% of cases during the first year of life, while the frequency in adults is estimated to be 0.2%, with the majority of cases occurring in an acute setting. There are four types of intestinal malrotation: non-rotation, reverse rotation, incomplete rotation, and anomalous fixation of the mesentery. The most common type is non-rotation, as described in the case presented.

There are very few case reports of intestinal malrotation and Meckel's diverticulum together in the literature, making it a rare clinical entity. The PubMed database was used to perform a literature search with the phrases intestinal malrotation or midgut malrotation and Meckel's diverticulum. Nine of the ten case reports that were found during this search were in English, so they were included in this evaluation.

CONCLUSIONS

Meckel's diverticulum and midgut nonrotation together constitute a rare clinical condition that typically manifests in adulthood and is typically accompanied by chronic symptoms prior to an acute start. The literature has also documented their comorbidity with other congenital anomalies. In cases of unusual abdominal discomfort, emergency physicians, radiologists, and surgeons must be more cognizant of these anatomic abnormalities. Additionally, additional imaging is advised prior to surgery. The computed tomography scan is an essential diagnostic and treatment tool for acute abdominal pain.

A pediatric surgeon's aid is an acceptable alternative if a general surgeon is unable to conduct a Ladd's surgery. For patients with malrotation, incidental appendectomy is advised to prevent further diagnostic conundrums.

REFERENCES

1. Systematic review of epidemiology, presentation, and management of Meckel's diverticulum in the 21st century. Hansen CC, Søreide K. Medicine (Baltimore) 2018;97:0. doi: 10.1097/MD.0000000000012154. [DOI] [PMC free article] [PubMed] [Google Scholar]
2. The many faces of Meckel's diverticulum: update on management in incidental and symptomatic patients. Lindeman RJ, Søreide K. http://doi.org/10.1007/s11894-019-0742-1. Curr Gastroenterol Rep. 2020;22:3. doi: 10.1007/s11894-019-0742-1. [DOI] [PubMed] [Google Scholar]
3. Hartman GE. Neonatology: clinical practice and procedures. McGraw Hill; 2015. Intestinal obstruction. [Google Scholar]
4. Radiologist's perspective for the Meckel's diverticulum and its complications. Kotha VK, Khandelwal A, Saboo SS, Shanbhogue AK, Virmani V, Marginean EC, Menias CO. Br J Radiol. 2014;87:20130743. doi: 10.1259/bjr.20130743. [DOI] [PMC free article] [PubMed] [Google Scholar]