

Intussusception Precipitated by Meckel's Diverticulum

Dr. Anuradha Mehta¹, Dr. R. P Reddy², Dr. G. A. Swami³, Dr. Meghraj J. Chawda⁴, Dr. G. L. Anmod⁵

¹Junior Resident, VDGMC, Latur, Maharashtra

Email Id: [noor.mehta22\[at\]gmail.com](mailto:noor.mehta22[at]gmail.com)

Mob No - 8805946136

²Assistant Professor, Department of Peadiatric Surgery, Grant Medical College, Mumbai

Email id: [reddydr ravi\[at\]gmail.com](mailto:reddydr ravi[at]gmail.com)

Mob no - 8806446228

³Associate Professor, Department Of Surgery, VDGMC, Latur, Maharashtra

Email id: [swamiganesh34\[at\]gmail.com](mailto:swamiganesh34[at]gmail.com)

Mob no - 8805388247

⁴Associate Professor, Department of Surgery, VDGMC, Latur, Maharashtra

Email id: [drmeghrajchawda\[at\]gmail.com](mailto:drmeghrajchawda[at]gmail.com)

Mob no - 7499969852

⁵Professor and Head of Department, Department of Surgery, VDGMC, Latur, Maharashtra

Email. id: [drgla\[at\]gmail.com](mailto:drgla[at]gmail.com)

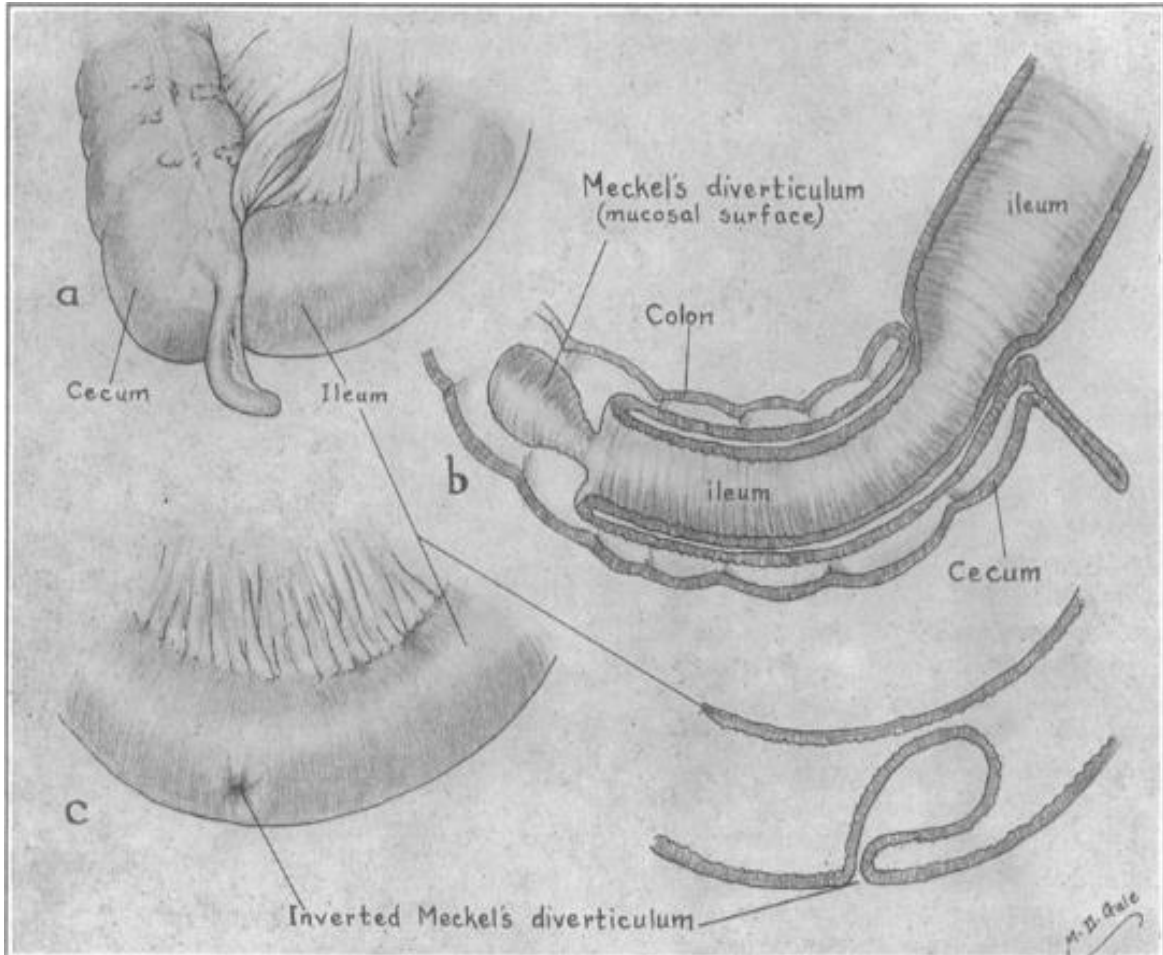
Mob no - 9070187472

Abstract: *Intussusception due to Meckel's diverticulum is an uncommon cause of intestinal obstruction. However, the surgeon should still be suspicious of this condition since the non - specific symptoms and the rarity of it make a preoperative diagnosis uncertain. Considering the secondary nature of intussusception and the necessity of early surgical intervention to avoid morbidity and mortality. It occurs when the Meckel's diverticulum sags into the bowel lumen and then serves as a lead point to allow telescoping of the small intestine, first into the distal ileum and then in to the large intestine, causing ileo - ileal and ileocolic type of intussusceptions.*

Keywords: Meckel Diverticulum; Emergency Surgery; Intestinal Obstruction; Intussusception; Inverted Diverticulum

1. Introduction

- Intussusception is a gastrointestinal condition describing the involution of a proximal portion of the bowel into a more distal portion, leading to inflammation and often bowel obstruction.
- It is a relatively common etiology of abdominal pain in children, with greatest incidence between 3 months and 6 years of age.
- The part that prolapses into the other is called the intussusceptum.
- The part that receives it is called the intussusciens.
- An anatomic lead point occurs in approximately 10% of intussusceptions.
- Meckel's diverticulum is a true diverticulum and the most common gastrointestinal malformation, occurring in 2% of the population.
- Meckel's diverticulum is due to the persistence of the vitelline duct and, in its most common form, presents as a two - inch blind segment of bowel approximately two feet from the ileocecal valve and often containing ectopic gastric or pancreatic tissue.
- Common complications of Meckel's diverticulum include rectal bleeding, melena and/or hematochezia and less frequent complications include Meckel's diverticulitis, intestinal obstruction, volvulus, and intussusception.



2. Case Report

- A previously healthy 10 year old female was referred from an outside hospital for two months of mild, intermittent, generalized epigastric pain that was associated with eating as well as two days of non - bloody, non - bilious emesis.
- She also reported decreased appetite, nausea, and constipation. Physical exam found a well - appearing female with soft, non - distended abdomen with epigastric tenderness. An ultrasound of the abdomen (fig.1a) and a subsequent ct scan of the abdomen and pelvis (fig.1b and c) revealed a small bowel - small bowel intussusception.

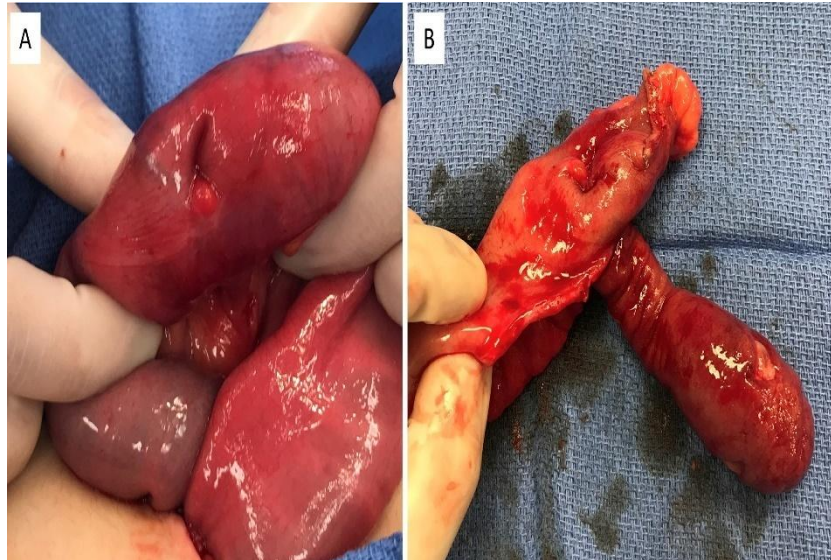


Radiologic imaging (A) Ultrasound demonstrated intussuscepted small bowel within a lumen of bowel. (B) Ct scan showing intussuscepted small bowel and mesentery within small bowel lumen. (C) Ct scan demonstrates intussuscepted small bowel and mesentery (arrow).

- The most common presenting feature was intestinal obstruction. All of the patients presented with abdominal pain and bilious vomiting, abdominal distension and constipation. These patients were put on intravenous fluids and nasogastric decompression. Routine investigations complete blood counts, blood urea, serum electrolytes, X - ray and ultrasonography (usg) (abdomen) were done. After stabilisation, patients were taken up for exploratory laparotomy.

Definitive Surgery

- It is usually successfully treated with barium, water - soluble, or an air - contrast enema, which both confirms the diagnosis and successfully reduces it. The success rate is more than 80%. However, up to 10% may reoccur within 24 hours
- During laparotomy underlying cause of intestinal obstruction was detected and treated accordingly as in case of intussusception was manually reduced followed by diverticulectomy and anastomosis



(a) Intraoperative photograph of the reduced small bowel with intraluminal mass and dimple on anti - mesenteric side of bowel. (b) Resected small bowel was opened on back table revealing inverted Meckel's diverticulum.

3. Conclusion

- Meckel's diverticulum results from the failure of obliteration of the vitelline duct during development, and can lead to obstruction, vomiting and bleeding.
- the exact mechanism by which a Meckel's diverticulum becomes inverted is not well understood, but it is believed that the presence of ectopic tissue may serve as a lead point for the inversion and intussusception of the Meckel's diverticulum
- The current case suggests that Meckel's diverticulum should be considered as a possible cause for cases of small bowel intussusception in pediatric patients.
- We report a rare pediatric case of ileo - ileal intussusception caused by an inverted Meckel's diverticulum that was successfully treated by exploratory laparotomy and resection.

References

- Wesley E. Barry, David M. Rosenberg, Mikako Warren, Eugene S. Kim, Small bowel intussusception secondary to inverted Meckel's diverticulum, *Journal of Pediatric Surgery Case Reports*, Volume 25, 2017, Warren G. Atwood, M. D Meckel's diverticulum — with report of a case of intussusception due to its Invagination *N Engl J Med* 1946; 234: 329 - 332doi: 10.1056/nejm194603072341005
- Sharma R K, Jain V K. Emergency surgery for Meckel's diverticulum. *World Journal of Emergency Surgery*.2008; 3: 27. This article onpubmed
- A Systematic Review of the Clinical Presentation, Diagnosis, and Treatment of Small Bowel Obstruction. Rami Reddy Sr, Cappell M S. <https://www.ncbi.nlm.nih.gov/pubmed/28439845>. *Curr gastroenterol rep*.2017; 19: 28.
- Blakeborough A, Mcwilliams R G, Raja U, Robinson P J, Reynolds J V, Chapman A H. Pseudolipoma of inverted Meckel's diverticulum:
- Clinical, Radiological and Pathological Correlation. *Eur radiol*.1997; 7 (6): 900 - 4. This article on pubmed
- Inverted Meckel's diverticulum: Rare Etiology of an intestinal obstruction Vishnu R Mani, Aleksandr Kalabin, Anant Dinesh, Ajai Rajabalan, Marina Landa, Albert Adu Mani Vr, Kalabin A, Dinesh A, Rajabalan A, Landa M, Adu A. Inverted