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A Case of Meckel's Diverticulum Leading to Intussception in an Adoloscent

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Abstract: A 15-year old boy complained of stomach ache and vomiting when he arrived at the emergency room. Upon inspection, there was a palpable mass in his lower abdomen, although patient complained of mild abdominal pain. A jejunojejunal intussusception secondary to Meckel's diverticulum was discovered during the ultrasonography procedure, which confirmed the diagnosis of intussusception. The most prevalent cause of small bowel obstruction in children is intussusception, a surgical abdominal emergency that can occur at any age. Although it is a well-known cause of vomiting, bloody diarrhea, and stomach pain in infants, it is sometimes overlooked when assessing older children who exhibit same symptoms. However, since over one-third of instances manifest beyond the age of seven, it is crucial to take this diagnosis into account. Meckel's diverticulum, cancer, or polyps are among the underlying pathologies that are more likely to be linked to intussusception in older children. Any patient with isolated abdominal problems should have intussusception on the differential, and if an older child is diagnosed with it, it should be understood that it is most likely a subsequent condition to underlying pathology. The intussuscepted MD was discovered with focal necrosis following an urgent laparoscopic exploration that was later changed to an emergency exploratory laparotomy. Using primary anastomosis and hand suture, a segmental small bowel resection was carried out. Ultimately, the patient recovered from surgery without any complications and was still doing well at the time of the routine check-up.

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I. INTRODUCTION

A gastrointestinal disorder known as intussusception occurs when a proximal section of the colon involutes into a more distal segment, causing irritation and frequently bowel obstruction. With the highest prevalence occurring between the ages of three months and six, it is a quite common cause of abdominal pain in children. Within this age range, a patient with the triad of vomiting, bloody mucoid stools, and stomach pain is described by traditional teaching. However, only a portion of people who arrive with this illness fall within these age categories and have these characteristic symptoms. Regardless of age, MD should be taken into account in the differential diagnosis list for patients presenting with acute small intestinal obstruction, even though the patient's age at presentation may provide crucial diagnostic clues. MD is frequently found during surgical investigation, regardless of imaging methods, including ultrasound, scanners, and MRI. Treatment and diagnostics are made possible by laparoscopy. When children and adolescents do not exhibit the usual signs and symptoms of intussusception, the emergency clinician must consider this diagnosis since failure to do so might result in intestinal necrosis, perforation, sepsis, and death. We describe a patient who was diagnosed with intussusception despite being older than the typical age range and lacking the traditional triad of symptoms**.**

II. CASE

A 15-year-old male patient, with a history of acute abdominal pain since last 4 hours, and of chronic constipation. At presentation, the patient presented with the general condition preserved, apyrexia, bilious vomiting and pain in abdomen. The physical examination found a soft non-tender abdomen, with palpable abdominal mass in lower abdomen. The ultrasound performed found 36mm long bowel segment giving bowel within bowel appearance, suggestive of ileo-ileum intussusception without any sign of complication with the intussusception tube in the pelvic position, (suprapubic). An hour later in the emergency room

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there is no more pain, a new ultrasound is requested which does not found the intussusception. The patient was admitted to ward with ryle's tube and catheter in situ. There was no passage of stool or flatus, bowel sounds were sluggish. On day 2 of admission, diagnostic laparoscopy was planned. It was found that a ileo-ileum intussusception. A conversion to mid-line laparotomy and abdomen was opened in layers. Ileo-ileal intussusception was found 15 cm proximal to the IC Junction. After reduction ofintussusception by milking of bowel, approximately 5cm long wide base Meckel's diverticulum was found with 20 cm gangrenous ileal segment. Subsequently, a segmental small-bowel resection with primary anastomosis was performed. The surgical specimen was sent for histopathological examination for analysis. Caecopexy and Appendicectomy was subsequently performed. Postoperative course was simple, he recuperated gradually. Sips was started on POD 5, pelvic drain was removed on POD 8 and anastomotic site drain was removed on POD 9 and was subsequently discharged. At follow up, he had a good improvement of the constipation, the clinical examination was normal. The results of the anatomopathological examination confirmed a gangrenous ileal segment with meckel's diverticulum which is contained by an ileum type mucosa with a congestive aspect, without dysplasia or histological signs of malignancy along with changes of appendicitis..

III. DISCUSSION

Intussusception occurs when one segment of the bowel invaginates into an adjacent segment, typically proximal to the ileocecal valve. Bowel wall edema is the result of this process, and it gradually obstructs venous outflow. Necrosis and perforation may eventually result from secondary ischemia of the colon. The most frequent kinds of intussusceptions are ileoileal, cecocolic, and colocolic ileocolic. Although it is not unusual in older children, intussusception is most common in children aged 3 months to 6 years, with a higher prevalence in men than females. According to a recent large retrospective study, adults accounted for 23% of all intussusceptions, whereas older children (ages 7 to 18) made for up to 13%. This strengthens the case for taking this disparity into account across all age groups. Up to 10% of intussusceptions are related to a pathologic lead point, according to some big studies, and the risk is higher between the ages of five and fourteen. Only around 10% of occurrences are thought to be idiopathic after this age; the majority of intussusceptions are caused by underlying pathology. Carcinoid tumors and leiomyoma are specific lead points that have been previously identified; however, intussusception can also be linked to generalized pathologies like ascaris infection, Peutz-Jeghers syndrome, Henoch Schonlein purpura, neutropenic colitis, cystic fibrosis, celiac disease, and other cancers. It might also happen following specific surgical procedures. Although more research is required, there has been a documented link with the Rotavirus vaccine.

Meckel's diverticulum is the one if the most prevalent lesion that causes intussusception, however there are numerous others.An omphalomesenteric duct remnant known as a Meckel's diverticulum is typically destroyed by the fifth to eighth week of pregnancy.Although up to 22% of people have it, only 4% of them will experience a problem at some point in their lives. Bowel blockage, intussusception, diverticulitis, and bleeding are the most common problems that arise, with the majority of obstructions being secondary to intussusception.The diagnosis of intussusception related to Meckel's diverticulum is extremely uncommon in all populations, as the majority of Meckel's diverticuli are asymptomatic and the majority of intussusceptions are idiopathic in origin.Even though this particular condition is uncommon in the age bracket in question, the case does help to highlight a crucial idea.

According to textbooks and traditional teaching methods, intussusception is a condition that typically affects children between the ages of two months and two years. The classic trifecta of vomiting, abdominal discomfort, and bloody feces is how it manifests itself. Regretfully, less than 25% of people with intussusceptions experience these symptoms simultaneously. Additionally, older children are less likely than infants to experience the "red currant jelly" stool, which is a mixture of black blood and stool and is thought to be a characteristic sign of intussusception. This is especially true for children who have small bowel intussusceptions. Furthermore, the clinician's expertise and the relaxation of the abdominal wall muscles are crucial in determining if a little child has focused tenderness or can palpate a connected abdominal mass. Even when the condition is suspected, this makes diagnosis challenging. Nevertheless, even when there is established underlying illness, doctors frequently overlook this diagnosis when treating individuals who have gastrointestinal symptoms that do not occur during the early infancy years. It is easy to get complacent and give that diagnosis to teenagers with unusual symptoms, like our patient, who had mild pain and vomiting but no diarrhea, because gastroenteritis is much more common in children and adults of all ages. The inability to identify painless intussusceptions, the disregard for symptoms in elderly patients, the inability to recognize the significance of bilious vomiting, and the generally atypical presentation of those with small bowel origins of intussusception could all contribute to additional delays in diagnosis.

Even while the use of nonoperative reduction procedures has increased and the ability to diagnose intussusception with CT scans and ultrasound has improved over the past 50 years, all of these factors assume that the diagnosis is taken into account. Missing an intussusception can have catastrophic consequences, including intestinal necrosis, perforation, infection, and death. All children with gastrointestinal issues should therefore have this diagnosis taken into account, especially if their symptoms do not match the typical pattern of gastroenteritis.

IV. CONCLUSION

In an emergency, there is no way to tell whether intussusception is idiopathic or subsequent to a diseased lead point based on signs or symptoms. Nevertheless, it is crucial

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for a doctor to consider this diagnosis, even though it is less common in teenage and adult patients. When treating patients with gastrointestinal problems and abdominal pain, a wide differential should be considered, as demonstrated by the patient in this example, who only had modest stomach pain and isolated vomiting. Exploratory evaluations are still required, particularly in the complex type that necessitates immediate surgery, such as acute intussusception by Meckel's diverticulitis.

Fig 1 Bowel Loops On Opening Abdome

Fig 2 Forceps End Showing the Entry Point of Intussusceptum

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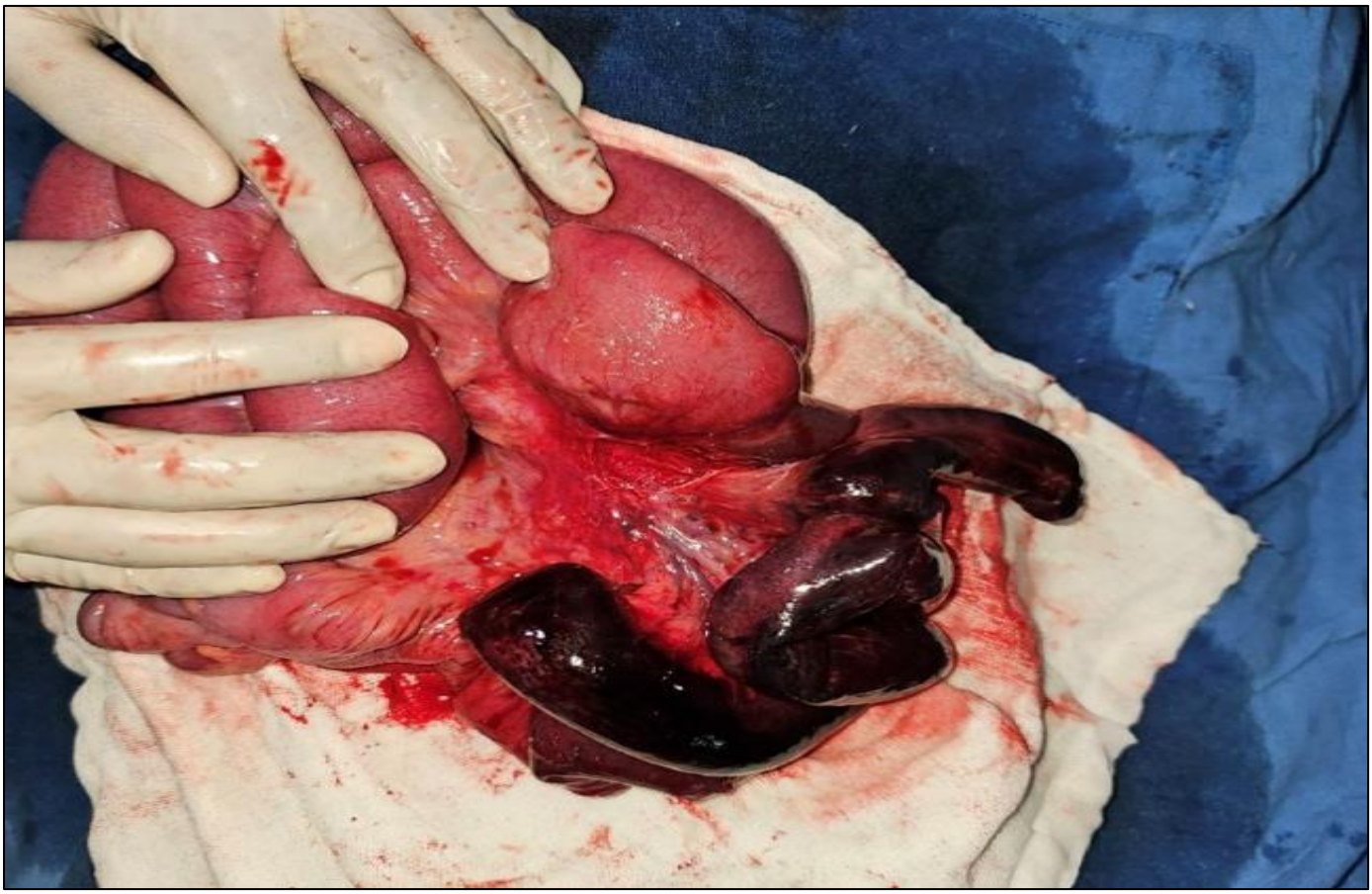

Fig 3 Gangrenous Ileal Segment Containing Meckel's Diverticulum

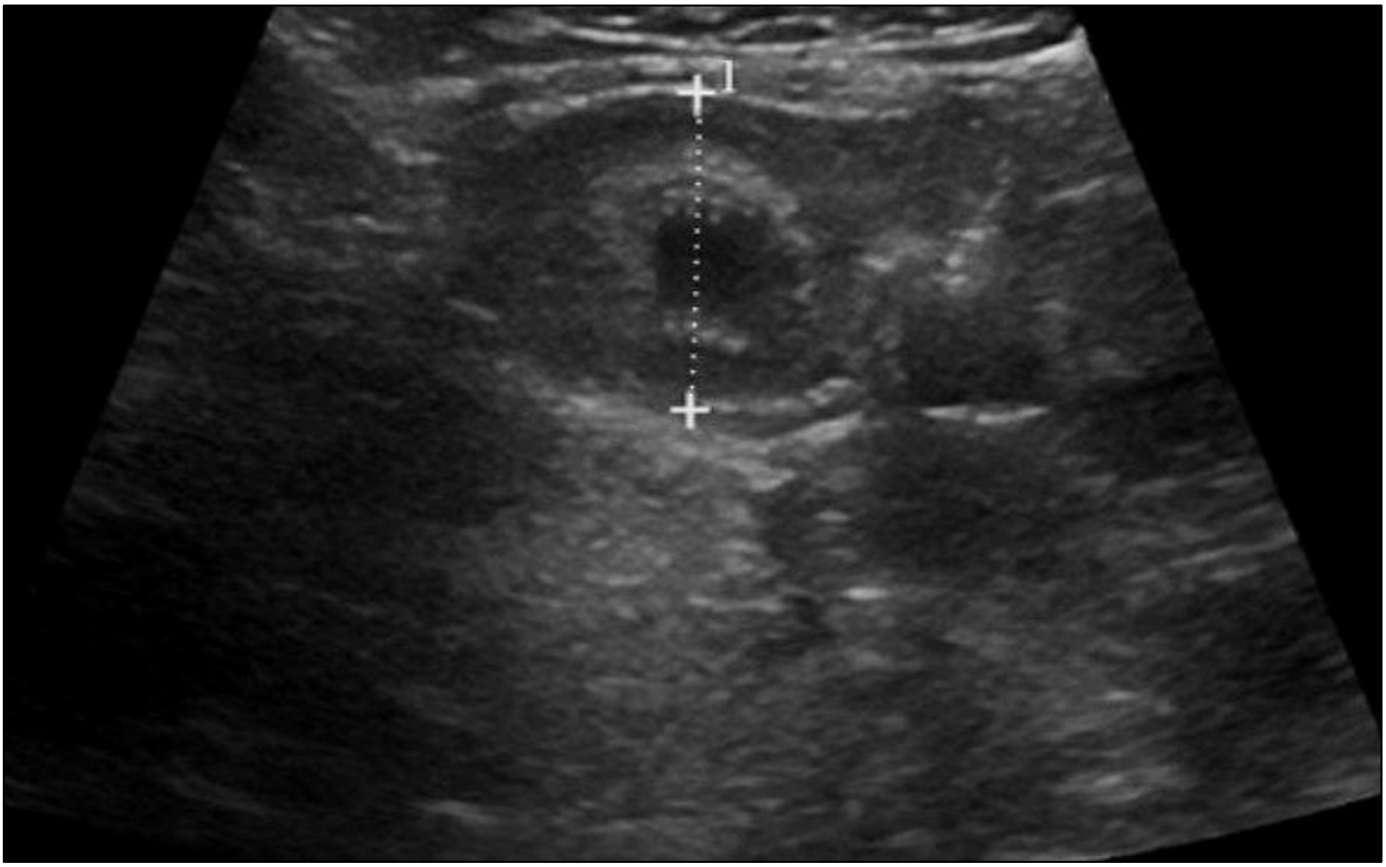

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Fig 4 Target Sign Noted In Usg Showing Bowel within Bowel Appearance

- *Registration of Research Studies: NA*

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