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A RARE CASE OF SYMPTOMATIC MECKEL DIVERTICULUM IN AN INFANT

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ABSTRACT

Meckel's diverticulum (MD) is one of the most common congenital anomalies of the small intestine with a diverse range of clinical presentations, often becoming a challenge to diagnose The majority of cases are incidentally discovered during evaluation for bleeding per rectum in childhood; some patients present with diverticulitis whereas others may present with obstruction. It results from incomplete obliteration of the vitellointestinal duct leading to the formation of a true diverticulum in the small intestine. This embryonic remnant is found in 2-4% of the general population. It accounts for 6% of all known congenital malformations. Only 10% of cases are confirmed to have the diagnosis pre-operatively and the rest are confirmed post-operatively. Our patient was a 6-month-old boy who presented with painless bleeding per rectum with a normal physical examination. He underwent a CT scan abdomen which showed meckel diverticulum. He underwent surgery and was discharged after an uneventful hospital stay.

INTRODUCTION

MD is the most common congenital abnormality of the intestinal tract. This congenital malformation occurs due to failure of obliteration of the omphalo-mesenteric or vitelline duct in the 5th week of fetal development.[1,2,4] Meckels diverticulum presents with a wide range of clinical presentations; but majority of the present with bleeding per rectum, some with symptoms of intestinal obstruction or with diverticulitis.[1,2,3] MD is a true diverticulum because it contain all normal layers of the intestinal wall. It is located 30–60 cm from the ileocecal junction.[4] In 50% cases, it contains ectopic tissue (gastric mucosa in 60–85% and 5–16% pancreatic tissue).[4] Meckel diverticulum follows the rule of 2s. Occurs in about 2% of the population, located in the distal ileum, within two feet of the ileo-cecal valve, usually two inches in length, commonly 2 cm in diameter,2:1 male: female ratio, two ectopic tissues (gastric and pancreatic), commonly asymptomatic before two years of age).[1,2,3,5] Acute intestinal obstruction like intussusception most commonly occurs after diverticulitis. Patients with suspected Meckel diverticulum undergo erect x ray abdomen, ultrasonography abdomen, computed tomography (CT scan, Meckel's scan (Technetium-99m pertechnetate scintigraphy).[1,4] Radionuclide scan with 99 m Tc-pertechnetate is the gold standard method for patients with Meckel diverticulum, it is performed (after pre-treatment with an H2 receptor antagonist which shows a "blush" or increased radiotracer uptake in the Meckel's tissue, which is highly suggestive of an MD.[1,5] The definitive treatment of Meckel diverticulum with bleeding or another complication like inflammation is surgery (diverticulectomy) with laparoscopic approach being more feasible and efficient method for infants and small children. The other alternative can be stoma formation if local edema, serositis or contamination precludes early anastomosis. However due to prolonged course of treatment and stoma related complications, primary resection and anastomosis remain the mainstay.[2]

CASE PRESENTATION

Our patient was a 6-month-old infant who presented to the ER with a short history of painless bleeding per rectum, vomiting's for 1 day. He was born full term and delivered via c section, cried immediately passed stool within 24 hours of life. His family history was unremarkable. His vitals were ;blood pressure 112/87mmhg, pulse 106 beats per minute, temperature 98f, sao2% 100%, respiratory rate of 29 breaths/minute. On physical examination chest, cardiovascular system and central nervous system were unremarkable, abdomen was soft non tender. His labs were within normal range on haemoglobin=14.6, platelets =72, liver function test and urea creatinine were unremarkable. He underwent an ultrasound abdomen which showed excessive bowel gases and minimal ascites. His CT angiography was planned which showed dilated jejunal loops and fluid filled collapsed distal ileal loops showing enhancing mucosa representing the possibility of Meckel's diverticulum thereafter he underwent Meckles scintigraphy, its finding were consistent with heterotrophic/ectopic gastric mucosa (Meckels diverticulum). On the basis of CT angiography and meckels scan he underwent exploratory laparotomy with excision of meckels diverticulum and ileostomy was done. His operative findings were 2 perforations at base

of meckels diverticulum 10 cm proximal to meckels in mid ileum.

Meckel's was inflamed with a wide base and moderate contamination. With no immediate and post operative complication occurred. Hence, he was discharge well with uneventful recovery.

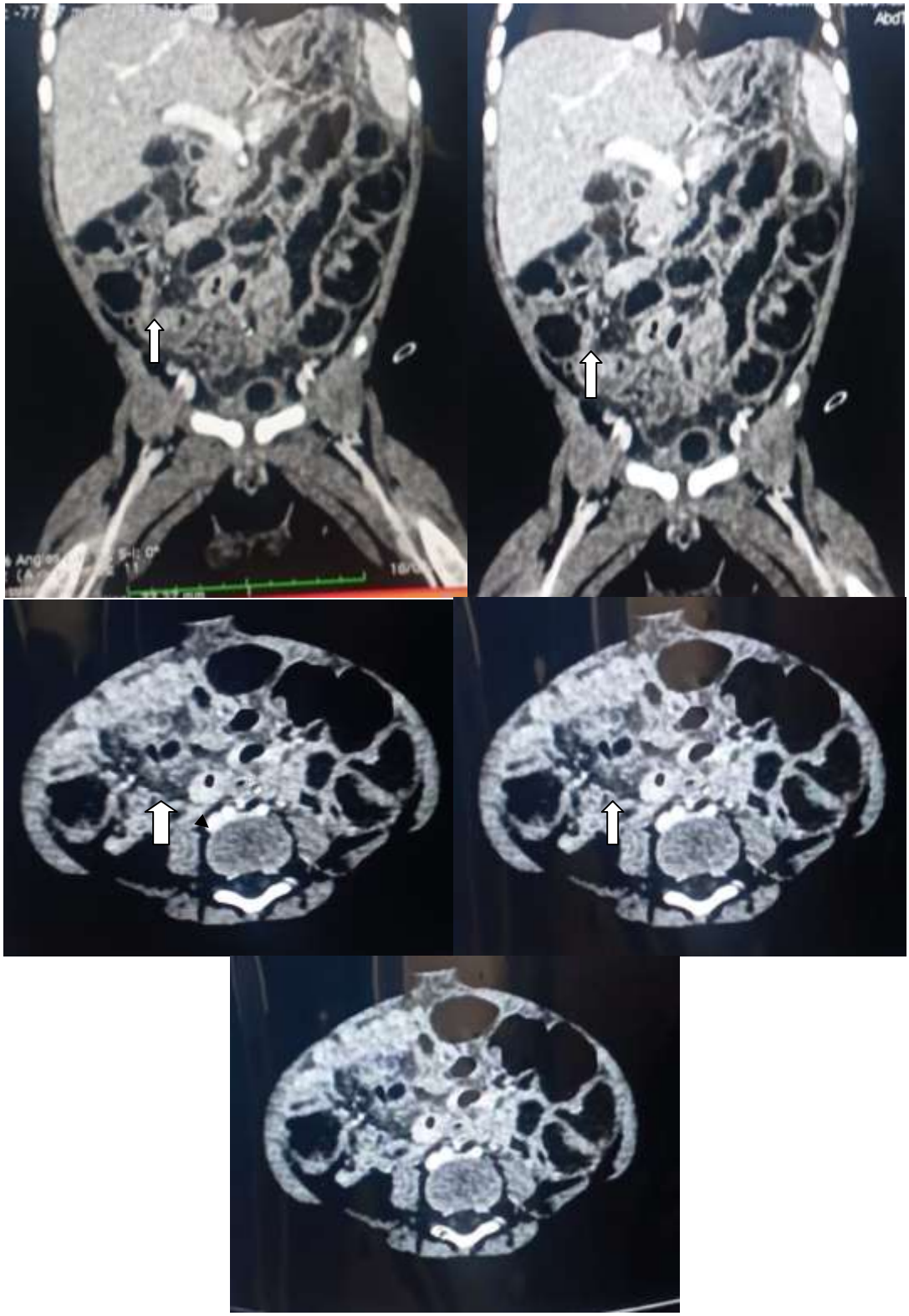

Figure 1: A-E a thickened and inflamed loop of small bowel with high density within it is seen arising from the ileal loops as shown by the pointers.

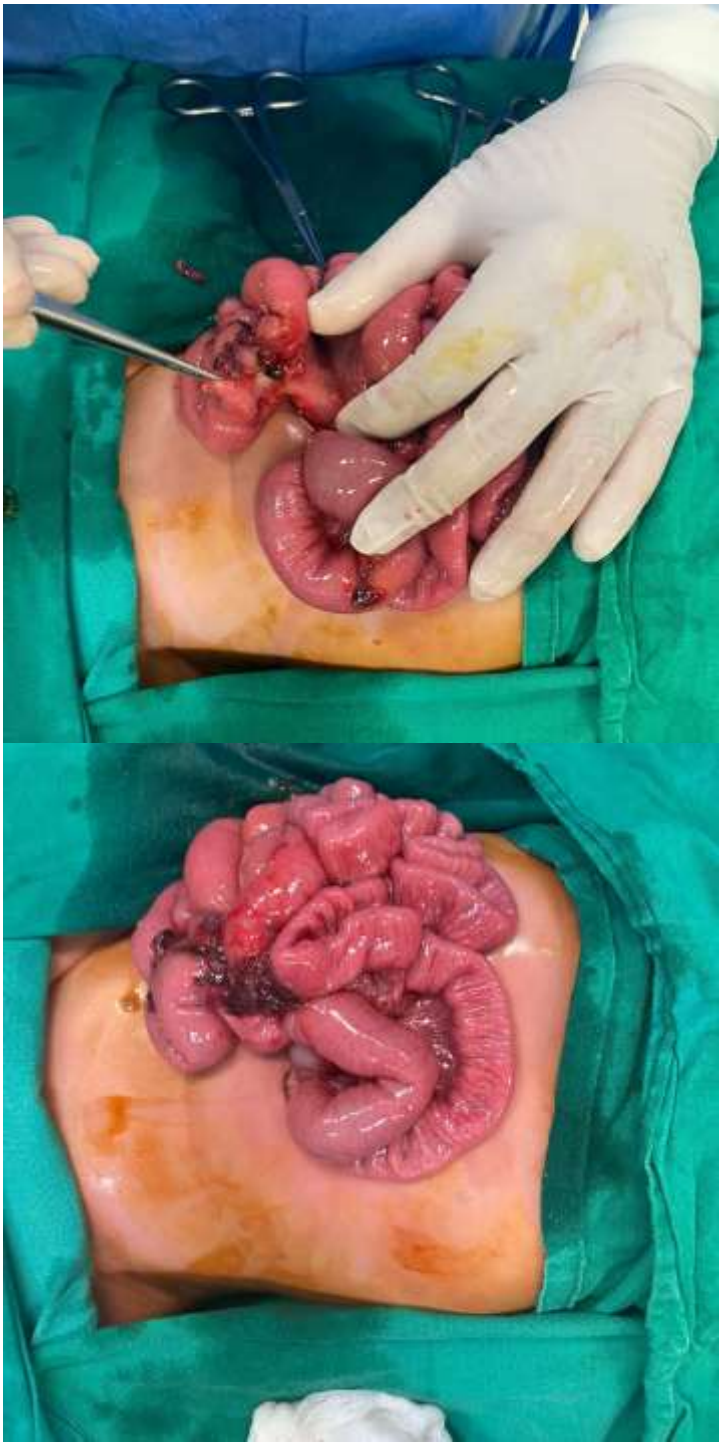

Figure 2: a and b intraoperative images showing the inflamed Meckel's diverticulum.

DISCUSSION

MD appears in 2-4% of the population and is either an accidental finding or has bleeding signs. The bleeding remains as most common feature of presentation, constituting 76% of cases.[1,2] Our patient was 6months old boy who presented with short history of painless bleeding per rectum. His physical examination and vitals were in normal range with insignificant family history. The "rule of two" is a defining feature of MD and includes the prevalence in 2% of the population, diagnosis in children under the age of two, two-inch size, 2 cm diameter, and location two feet from the ileocecal valve. According to reports, the male to female ratio is between between 2:1 and 4:1.[3,4] Numerous complications, including intestinal obstruction, bleeding, diverticulitis, and perforation, can accompany MD. In children, intestinal obstruction is reported as the second most common presentation.[4] After pre-treatment with an H2 receptor antagonist, a radionuclide scan with 99 m Tc-pertechnetate, the gold standard technique for patients with meckel diverticulum, was performed. This revealed a "blush," or increased radiotracer uptake, in the meckels

tissue which was strongly suggestive of an MD.[1,5] However after baselines he underwent CT angiography which showed dilated jejunal loops and fluid filled collapsed distal ileal loops showing enhancing mucosa representing the possibility of meckels divertivulum. He underwent meckles scintigraphy, its finding were consistent with heteretrophic/ectopic gastric mucosa (mickels diverticulum).On the basis of Surgery with either a wedge resection diverticulectomy or a segmental resection and anastomosis is the exclusive method of treating symptomatic MD.[4] While some authors choose not to resect the diverticulum, others have chosen to do so as a preventative measure. Patients with symptomatic MD should have resection.[5] However, our patient underwent exploratory laprotomy with excision of meckels diverticulum and ileostomy was done. His operative findings were 2 perforations at the wide base of inflamed meckel with moderate contamination. With no immediate and post operative complication occurred. Hence he was discharge well with uneventful recovery.

CONCLUSION

Pre-operative diagnosis of MD may be challenging because of the conjoining clinical and imaging features of other acute surgical conditions. Despite of its infrequent occurrence in this age group it should be considered a differential diagnosis of acute conditions to reduce the complication rate.

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