

Meckel's diverticulum causing acute intestinal obstruction: Report of two cases

Kewithinwangbo Newme, Ranendra Hajong, Donkumar Khongwar

Department of General Surgery, NEIGRIHMS, Shillong, Meghalaya, India

ABSTRACT

Reporting herewith 2 cases of Meckel's diverticulum presenting with acute intestinal obstruction. The patients were managed surgically. The cases were presented in emergency department and management were based on clinical and imaging after a initial resuscitation. The intra-operative findings are discussed in herewith.

Keywords: Acute intestinal obstruction, Meckel's diverticulum, operative management

Introduction

Meckel's diverticulum is the most commonly encountered congenital anomaly of the small bowel, occurring in about 2% of the population.^[1] The most common clinical symptom/presentation is gastrointestinal bleeding in adults.^[1] Other common presentations are diverticulitis and intestinal obstruction. In adults, Meckel's diverticulum present with intestinal obstruction.^[1]

The intestinal obstruction accounts for 21.8% of all acute surgical emergencies;^[2] commonest cause are adhesions, neoplasms, hernias, volvulus and intussusceptions.^[3] Intestinal obstruction due to Meckel's diverticulum is rare as per the most studies; but could cause commonly intestinal obstruction in 20-25% in any symptomatic case.^[4] Most cases of Meckel's diverticulum are asymptomatic. It is found that the mean age of patients presented with symptomatic Meckel's diverticulum is 31 years (median, 27 years) and male-female ratio to be approximately 3:1.^[5]

The present case is that of a 24-year-old and 12-year-old male patients present with an acute intestinal obstruction due to Meckel's diverticulum.

Presentation of the Case

The first patient was a 24-year-old male patient admitted to emergency department with an acute abdomen since for 4 days and vomiting for 2 days. There was no history of same episodes and previous abdominal surgery. Clinically, abdomen was distended, guarding rigidity was present and peristalsis sound was absent. Patient's vitals were normal. X-ray plain picture abdomen showed multiple air-fluids levels [Figure 1]. Ultrasonography (USG) abdomen scan showed distended small bowel loops and to and fro movement of bowel loops. After proper resuscitation, exploratory laparotomy was planned. At laparotomy Meckel's diverticulum was seen encircling the terminal ileum and a tip of Meckel's diverticulum was found to be necrosed [Figure 2]. At the site of encircling of small bowel, the terminal ileum was constricted and indurated; approximately 15 cm from ileo-caecal junction. Meckel's diverticulum was untwirled and segmental resection of the necrosed terminal ileum and Meckel's diverticulum were done. Primary ileo-ileal (end to end) anastomosis was done.

Address for correspondence: Dr. Kewithinwangbo Newme, Department of General Surgery, NEIGRIHMS, Shillong-793018, Meghalaya, India.
E-mail: adinewme@gmail.com

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The second patient was a 12 years old boy presented to casualty department with history of pain abdomen, distension and vomiting for 4 days, 3 days and 2 days, respectively. On clinical examination, the patient was dehydrated, with moderately distended abdomen and visible peristalsis. Tenderness was noted all over the abdomen. Per rectal examination was normal. X-ray abdomen showed multiple air-fluid levels; USG abdomen showed distended bowel loops with to and fro movement. The patient was planned for exploratory laparotomy. Intraoperatively, hugely distended proximal small bowel loops caused by a constriction band emanating from tip of Meckel's diverticulum and attached to the parietal wall [Figure 3] was noted which on histopathological examination was later confirmed as Meckel's diverticulum [Figure 4]. The strictured point was released and a segmental resection of the meckel's diverticulum was performed. End to end ileo-ileal anastomosis was made. Patient recovered uneventfully.

It is worth mentioning that in both the cases, there was no previous history of any surgical intervention. This goes on to show especially for the benefit of primary care physicians at rural set-ups to keep Meckel's diverticulum as a causative factor for

young patients presenting with acute intestinal obstruction with no previous surgical history.

Discussion

Meckel's diverticulum (MD) is the most commonly encountered congenital anomaly of the small bowel, occurring in about 2% of the population. It is generally located in the anti-mesenteric border of the ileum within 100 cm proximal to the ileo-caecal valve.^[1]

As the clinical findings are obscure, most commonly patients present with pain abdomen, vomiting, constipation and abdominal distention (i.e. as same features of intestinal obstruction). The most common presentation in symptomatic is bleeding.^[1]

In studies by both Khalifa Ali Al Jabri *et al.*^[6] and Nádia Tenreiro *et al.*^[7], patients presented with a pain abdomen, distension and vomiting (as a features of obstruction). In the present study, patients also presented with pain abdomen, distension and vomiting.



Figure 1: X-ray erect abdomen showing features of obstruction



Figure 2: Intraoperative image of Meckel's diverticulum with a necrosed tip

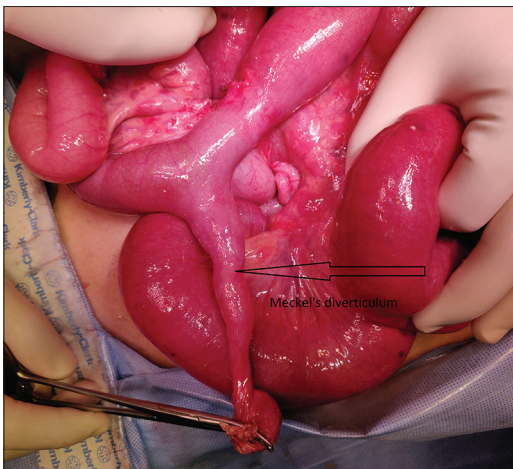


Figure 3: Intraoperative image of Meckel's diverticulum

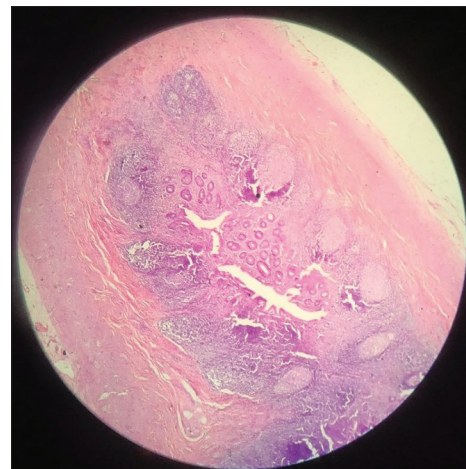


Figure 4: Microscopic picture of Meckel's diverticulum

Intestinal obstruction is the second most common complication of Meckel's diverticulum.^[8] Obstruction can be caused by trapping of a bowel loop by a mesodiverticular band, intussusception and by an extension into a hernia sac (Littre's hernia).^[9] Studies by Avnesh S Thakor *et al.*^[10] and Sami Akbulut *et al.*^[11] showed bowel obstruction was caused by encircling of MD and bands attached to the parietal wall abdomen respectively. In the present case also, the same findings were noted.

Conventional radiographic examination is of limited value. Although of limited value, high-resolution sonography has been used for the investigation of Meckel's diverticulum; usually it shows a fluid-filled structure in the right lower quadrant, associated with thick-walled loop of bowel.^[12] In the present scenario, USG abdomen could not detect a Meckel's diverticulum. CT abdomen is of not much valuable usually, as it is much difficult to differentiate it from normal bowel.^[12] Sun *et al.*^[13] in their study found mesodiverticular band as a hyperechoic lines and emphasized the role of high frequency ultrasonography in demonstration of congenital bands, especially in children. Although their study stressed that CT is superior to ultrasonography (USG) in detecting the cause of small bowel obstruction accurately. In here, CT abdomen was not done. There is a confusion regarding removal of it when detected incidentally. However, some studies have stated that in an asymptomatic patient also, it is advocated to remove, as there is an increased risk of malignant transformation of Meckel's diverticulum.^[9]

Conclusion

To conclude, Meckel's diverticulum as such is found in 2% of population and is usually indolent or asymptomatic. It may present in young patients with features of lower gastro-intestinal bleed and acute intestinal obstruction. Based on the others case reports, it is seen that Meckel's diverticulum may complicate into intestinal obstruction. Keeping in mind that Meckel's diverticulum could be the one of the reason for intestinal obstruction in patient, so it is stressed once again for the benefit of primary care physicians that in a young male patient presenting with acute intestinal obstruction; Meckel's diverticulum should be one of the differential diagnoses, especially in a virgin abdomen.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other

clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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