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A CASE REPORT: INTESTINAL OBSTRUCTION DUE TO MECKLE'S DIVERTICULUM

General Surgery

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ABSTRACT

Meckle's Diverticulum is a congenital anomaly resulting from incomplete obliteration of the omphalomesenteric duct/ vitello-intestinal duct.. People who have Meckle's Diverticulum go through life without facing any symptoms and Meckle's Diverticulum being only an incidental finding. But in some cases, complications involving a Meckle's Diverticulum may mimic other diseases and obscure the process of early diagnosis, especially in cases on Meckle's Diverticulum causing Small Bowel Obstruction.

KEYWORDS

INTRODUCTION:

Meckle's Diverticulum is a congenital malformation of the gastrointestinal tract, less commonly seen in about 2% of the population. It results due to incomplete obliteration of the vitello-intestinal duct as first described by Johann Friedrich Meckle.[1,2]

During 5th week of gestation, incomplete obliteration of the omphalomesenteric duct results in the development of MD. It contains all four layers of the small intestine; hence, it is a true diverticulum.[3] It is located along the antimesenteric border of distal ileum within 100 cm of ileocecal valve.Histopathologically, it has heterotropic mucosa. 60% have rctopic gastric mucosa. Next common is pancreatic acini, colonic mucosa, endometriosis, etc.[4]

MD is referred to the rule of 2 i.e. – 2% prevalance, 2:1 male:female ratio, 2 ft. proximal to the ileocecal valve, only 2% will be symptomatic, and half of those symptomatic are < 2 years of age. The length of an MD ranges from 1 cm to 26 cm, average being, about 3 cm.[1,3,5,6]

Younger patients usually present with bleeding which is due to ectopic gastric mucosa. Bleeding due to MD is rarely ever seen in adults.[4,7] Common complications in adults are obstruction, perforation, intussusception, ulceration, hemorrhage, etc.[7,9] Intestinal obstruction due to Meckle's Diverticulum is rare but contributes to about 20% - 25% of cases of symptomatic Meckle's Diverticulum.[11]

As symptomatic Meckle's Diverticulum is very rare in adults, it is usually only incidentally diagnosed during an operation.

Nowadays, rates of pre-operative diagnosis have been improved with help of technicium-99 scan, high frequency ultrasonography and diagnostic laparoscopic approach.[8,10]

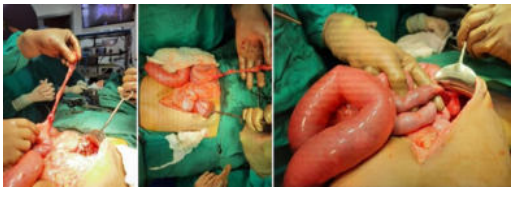
CASE REPORT:

A young boy, 15 years of age presented to the emergency department with a three day history of peri-umbilical pain which was insidious, moderate in severity, and dull aching in nature, with tense, distended abdomen and dullness over both flanks. Chief complaint was associated with multiple episodes of non-bilious, non-projectile vomiting. P/R examination revealed ballooning, suggestive of bowel obstruction.

Patient had two previous similar episodes of non-passage of flatus and stool a/w abdominal pain, lesser in severity, which easily got relieved by enema. This episode being worse in severity, although leading to passage of stool on giving enema, did not relieve the tense, distended abdomen or the abdominal pain which lead them here seeking higher treatment.

X-Ray abdomen showed multiple air fluid levels; USG and CT findings revealed acute small bowel obstruction with “transition zone in distal ileum” and “collapsed terminal ileal loops and collapsed large bowel loops” with resultant peritonitis and reactive acute appendicitis.

Planned exploration revealed a 17 cm long Meckle's Diverticulum, approximately 90 cm away from the ileocecal valve, with its inflammed tip adherent to adjacent loop of intestine. This lead to internal hernia and subsequent bowel obstruction, with proximal bowel loops hugely distended.



Internal Hernia was reduced, stricture point was released and a segmental resection of Meckle's Diverticulum was performed. End-to-end anastomosis of ileal loops was done, without any post-operative complications.

Histopathological examination later confirmed the diagnosis of Meckle's Diverticulum.

DISCUSSION:

As the clinical findings of Meckle's Diverticulum/ Complications of Meckle's diverticulum are obscure, most commonly patients present with abdominal pain, vomiting, constipation and abdominal distension (i.e. same as feature of intestinal obstruction).

Most common symptomatic presentation is bleeding due to ectopic gastric mucosa in younger individuals. Second most common presentation is intestinal obstruction which can be caused by trapping of a bowel loop by a mesodiverticular band, intussusception and by an extension into a hernial sac (Litter's Hernia).Conventional radiological examination is of limited value. Although of limited value, high-resoluion sonography has been used for the investigation of Meckle's Diverticulum; usually it shows a fluid-filled structure in the right lower quadrant, associated with thick walled loop of bowel. CT abdomen is of not much value as Meckle's Diverticulum is much difficult to differentiate from normal bowel.

Some studies found Meckle's Diverticulum as hypoechoic lines on high frequency ultrasonography and empathize use of High Frequency Ultrasonography in demonstration of congenital bands, especially in children.

CONCLUSION:

To conclude, Meckle's Diverticulum as such is found in 2% of population and is usually indolent or asymptomatic. It may present in patients with features of lower gastro-intestinal bleed and acute intestinal obstruction. Keeping in mind that Meckle's Diverticulum could be one of the reasons for intestinal obstruction, it is stressed that Meckle's Diverticulum should be one of the differential diagnoses, especially in younger individuals and in individuals having no abdominal operative history.

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