

FOREIGN BODY PERFORATION OF MECKEL'S DIVERTICULUM IN A CASE OF ACUTE APPENDICITIS - TWIN PATHOLOGY : A RARE CASE REPORT

General Surgery

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ABSTRACT

Meckel's diverticulum is a remnant of embryologic omphalomesenteric duct. It is the most common congenital anomaly in gastrointestinal tract with the incidence of about 2% in the population. About 80% of them are asymptomatic and remaining can present with complications such as bleeding, ulcer, intestinal obstruction, intussusception, diverticulitis and perforation.

Meckel's diverticular perforation by a foreign body is a rare complication. Here we report a case of Meckel's diverticular perforation by a foreign body in a case of acute appendicitis. A 50 year old male patient presented to emergency department with signs and symptoms of acute appendicitis. Abdomen opened through Mc Burney's incision, appendix found to be inflamed and a fish bone perforating the Meckel's diverticulum was incidentally found, appendicectomy and Meckel's diverticulectomy was performed. Perforation of Meckel's diverticulum by a foreign body is a diagnostic challenge pre operatively. It is suggested to make it a routine practice to look for the presence of Meckel's diverticulum in all lower abdominal surgeries.

KEYWORDS

Meckel's diverticulum; perforation; foreign body; fish bone.

INTRODUCTION:

It is a congenital diverticulum caused by failure of regression of omphalomesenteric duct and the most common anomaly of the Gastrointestinal tract. Perforation of Meckel's diverticulum usually follows an ulcer, in that incidence of perforation due to a foreign body is very less. Here we report a case of foreign body perforation of Meckel's diverticulum by fish bone in a case of acute appendicitis and this is the first case reported in India in literature.

CASE REPORT

A 50-year old male patient presented with complaints of right sided lower abdominal pain for 1 day, with h/o anorexia, nausea, vomiting and fever with tenderness in right iliac fossa and rebound tenderness with localized guarding with neutrophilic leucocytosis, USG is suggestive of acute appendicitis.

A clinical diagnosis of acute appendicitis was made and planned for emergency open appendicectomy. Abdomen opened via Mc Burney's incision, Appendix found inflamed in retrocecal position with adhesions in the cecum and terminal ileum. Adhesions released. Appendicectomy done.

As a routine we looked for Meckel's diverticulum. As a surprise, fish bone was seen coming out of the perforated Meckel's diverticulum. It was narrow necked diverticulum found in the antimesenteric border of terminal ileum found 60 cm from the ileocecal junction.



Fig I : View of Meckel's diverticulum with a fish bone perforating its tip.

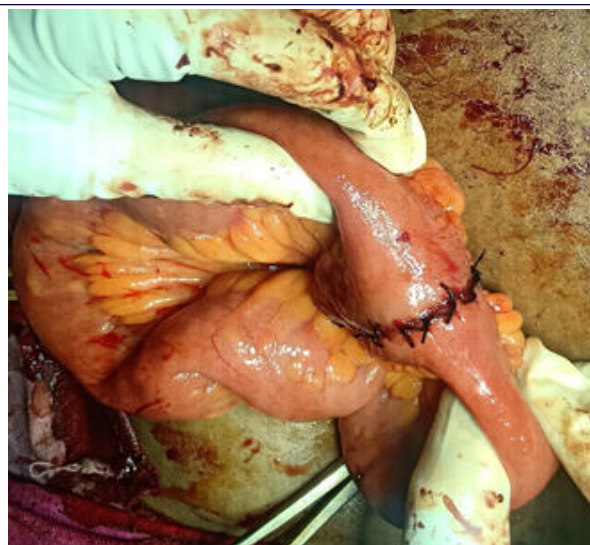


Fig II : The Ileum after diverticulectomy and end to end anastomosis .

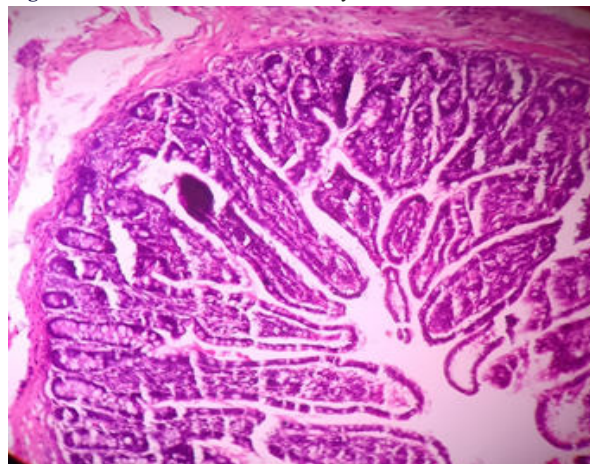


Fig III : Histopathology showed normal small intestinal mucosa, without evidence of heterotopic gastric mucosa.

Wedge resection of Meckel's diverticulum and end to end anastomosis done. Post-operative period was uneventful and he is on follow up.

DISCUSSION

In 1598, Meckel's diverticulum was first described by HIDANUS. The term Meckel's diverticulum was attributed to German anatomist JOHANN FREIDRICH MECKEL, who described its embryonic origin in detail in 1809.[1]

It is a true diverticulum comprising all the 5 layers of intestine mostly located 40-60cm from the ileocecal junction in the antimesenteric border.

It is commonly referred by the **rule of two's**. [2]

It occurs in 2% of the general population,

2% prevalence,

2:1 ;male: female ratio,

2 feet proximal to ileocecal valve,

About 2 inches long,

50% of symptomatic under 2 years,

Only in 2% are symptomatic in adults,

2 types of heterotopic tissue are seen gastric mucosa and pancreatic acini.

It can present as diverticulum, fistula, sinus, cyst, stenosis of the gut or as fibrous cord attached to the umbilicus from terminal ileum. In symptomatic patients, most common complications are hemorrhage, obstruction, intussusception, ulceration, perforation or volvulus.[3]

Hemorrhage is the most common symptomatic presentation in children <2 years of age[4]. Another presentation is intestinal obstruction due to fibrotic band attached to anterior abdominal wall. It also presents as intussusception. Volvulus occurs if there is persistent fibrous band or if the tip is fixed allows torsion of the diverticulum around its axis. Neoplasms can also occur in Meckel's diverticulum with neuroendocrine tumor as the most common malignant neoplasm.

Perforation is usually caused by an ulcer. Foreign body lodging in the diverticulum may also cause perforation by combination of local inflammation due to irritation and secondary to peristalsis to push the foreign body.

There are several cases reported in literature regarding perforations caused by toothpicks, fish bones, chicken bones, pins, needles, wood splinters, seeds, parasites, tomato skin, cabbage leaf, button battery, alkaline battery and sharp toys.[5]

Mostly Meckel's diverticulum is diagnosed intraoperatively[6]. In children the single most accurate test is scintigraphy with sodium ^{99m}Tc-pertechnetate. But in adults, the sensitivity is only 65% because of the presence of less gastric mucosa.[7]. Small bowel enteroclysis using barium enema can help in demonstrating diverticula.

Angiography is useful when there is bleeding from Meckel's diverticulum.

For symptomatic Meckel diverticula, options available are diverticulectomy and segmental bowel resection with primary anastomosis. Indication for segmental bowel resection include damage to the normal ileal mucosa due to ulceration or bleeding as well as the presence of diverticulitis or palpable ectopic tissue at the diverticular intestinal junction.

For asymptomatic incidentally found Meckel's diverticulum surgery is done when the patient is young < 50 years, diverticula > 2cm, with narrow neck, with fibrous band, suspected ectopic gastric tissue, inflamed, thickened diverticula as there is high risk of complications than others.[8]

CONCLUSION

The diagnosis of perforation of Meckel's diverticulum is almost always made intraoperatively. There are no specific clinical symptoms and signs, to differentiate between acute appendicitis and Meckel's diverticulitis. Even though we found acutely inflamed appendix intra operatively, as per our routine practice to look for Meckel's, helped out in finding perforated Meckel's diverticulum.

From this case report, we suggest to make it a routine practice to look for the presence of Meckel's diverticulum in all lower abdominal surgeries.

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