

CASE REPORT**An Interesting Case of Perforated Meckel's Diverticulum**

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Abstract:

Meckel's diverticulum is one of the common congenital anomalies of the small intestine that occurs in approximately 2% of population, with equal incidence in both sexes. It is caused by an incomplete obliteration of omphalomesenteric duct. It is a true diverticulum, containing all the three layers; complications are known in 4% of cases in adults. Here, we present an interesting case of a gangrenous Meckel's diverticulum simulating appendicular lump, which was treated with Oschner Sherren's regime.

Keywords: Meckel's diverticulum, appendicular lump, Oschner Sherren's regime

Introduction:

Meckel's diverticulum is a congenital anomaly of the small gut caused by an incomplete obliteration of omphalomesenteric duct and it is quite difficult to diagnose. It is known by the name of JF Meckel, who described the small bowel diverticula and established its embryonic origin [1]. In majority of the patients, the embryonic vitello-intestinal duct, which usually gets obliterated by the fifth to ninth week of intrauterine life but in about 2% of population, a vitelline remnant persists. Its anatomic location is not constant; however, it is 2 feet proximal to ileo-cecal valve and is 5 cm in length, which may result in a variety of intra-abdominal complications.

The sensitivity of ^{99m}Tc (Technetium scan) is less for patients with low bleeding and low anaemia. Moreover, 50% of children who are symptomatic present with an acute abdomen and the diagnosis can be made only at surgery. Patients with perforated Meckel's diverticulum may present with features of pain in right iliac fossa, similar to those of acute appendicitis. The complications caused by Meckel's diverticulum include intussusceptions and volvulus in adolescents and acute bleeding in adults [2, 3].

Case Report:

A 45- years- old female presented with complaints of pain in abdomen and fever for the previous seven days. She had no history of vomiting, bowel and bladder complaints. On physical examination, she had distended abdomen, tenderness at right iliac and lumbar region. Her pulse rate was 100 per minute. On auscultation bowel sounds were absent. Per rectal examination was normal. Blood examination showed WBC counts of 14000/mm³ and other parameters in normal range. An urgent X-ray abdomen was done that showed air under diaphragm (Fig.1). Ultrasonography (USG) showed gaseous distension of abdomen. In computed tomographic scan it was reported as appendicular mass / Meckel's diverticulitis.



Fig. 1: X-ray Chest and Abdomen Showing Gas under Diaphragm



Fig. 2: Resected Bowel with Meckel's Diverticulum

Decision of emergency laparotomy was planned looking at the condition of patient and radiological reports. Intra-operative findings showed that omentum was adhered to bowel loops forming a lump in right iliac fossa extending up to right lumbar region causing obstruction. On adhesiolysis; retrocaecal abscess was present. Meckel's diverticulum was gangrenous and its tip was adhered to the right lobe of liver. Some part of gut near the attachment of Meckel's diverticulum was also found gangrenous and perforated. Meckel's diverticulum was found adhered to the peritoneum. Appendix was normal. The case was managed by drainage of abscess, adhesiolysis and resection anastomosis of gangrenous bowel including Meckel's diverticulum and peritoneal lavage. There was an uneventful recovery of patient and patient was discharged on seventh post operative day (Fig. 2).

Discussion:

Meckel's diverticulum is one of the common congenital anomaly of the gastrointestinal tract. It is a true diverticulum of the ileum containing all three layers of the small intestine and presents on the anti-mesentric border of distal ileum, usually about 2 feet from the ileo-cecal junction. Its length and the base are the well-known causative factors for complications. Long and narrow-based diverticula are more prone for obstruction or inflammation. This narrow lumen leads to obstruction causing inflammation of the diverticulum as in appendicitis and this is the main reason for perforation. Perforated Meckel's diverticulum may present with pain in right iliac fossa, as in cases of acute appendicitis [3, 4]. A report of study on Meckel's diverticulum in 24 patients showed complications like bleeding, obstruction, diverticulitis and peritonitis [5, 6]. In 90% of histopathology reports, bleeding diverticula contain heterotrophic mucosa in majority of patients aged 1 month to 4 years of

age. It is mostly caused by the ulceration of the ileal mucosa neighboring the acid producing gastric mucosa. Other common complications are obstruction, intussusception, volvulus, perforation, strangulation, Littre's hernia, diverticulitis and peptic ulceration. Rarer complications include foreign bodies in the diverticular lumen, subphrenic abscess and tumors (carcinoids, sarcomas, benign mesenchymal tumors and adenocarcinomas).

Technetium ^{99m}Tc scan has been utilized universally as investigation of choice in cases of suspected Meckel's diverticular bleed [2]. There is 4–6% life time risk of developing complications. The best of the knowledge of various pathophysiologies of complications should be kept in mind for the management of Meckel's diverticulum. A symptomatic Meckel's diverticulum needs a good clinical suspicion as it is not easy to assess it by various investigative techniques. Previously laparotomy was done for complicated Meckel's diverticulum. As per various reports and studies now-a-days laparoscopic management of complicated

Meckel's diverticulum is a better choice. Both the methods have their own limitations; still the choice of management depends on patient's condition, surgeon's experiences [7-9]. Simple transverse resection is not recommended for the short Meckel's diverticulum. Diverticulectomy and dissection of fibrous bands associated with intestinal mesentery or abdominal wall is done for symptomatic Meckel's diverticulum; in complicated cases segmental ileal resection is essential. There are different opinions on treatment of incidental Meckel's diverticulum [10].

Conclusion:

In conclusion, although it is a rare finding, we should be vigilant for this entity. While dealing with an acute abdomen emergency, one should always keep in mind the possibility of perforated gangrenous Meckel's diverticulum simulating appendicular perforation. It is better to treat such types of complicated cases at tertiary care center, as they are difficult to manage at primary care center.

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