Gangrenous, Perforated Meckel's Diverticulum Mimicking Appendicular Lump: A Case Report

Pankaj Gharde1,*, Lalithbushan S Waghmare2, Dilip S Gode3, Pramita Muntode4, Hrituraj Rohariya4, Anoop Sharma4

1Department of Surgery, J.N. Medical College, DMIMS(DU), Wardha, Maharashtra, India
2Department of Physiology and Dean Interdisciplinary Sciences, DMIMS(DU), Wardha, Maharashtra, India
3Honourable Vice Chancellor and Laparoscopic Surgeon, DMIMS (DU), Wardha, Maharashtra, India
4Community Medicine, J.N. Medical College, DMIMS, Wardha, Maharashtra, India

*Corresponding author: pankaj_nandini75@yahoo.com

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Abstract

Introduction: Meckel's diverticulum is one of the common congenital anomaly of the small intestine, occurs in approximately 2% population, with equal incidence in both sexes; caused by an incomplete obliteration of omphalomesenteric duct. It is a true diverticulum, containing all the three layers; Complications are known in 4% cases in adults.

Case presentation: In this present case report, we are reporting a two and half year-old male child with an eight days old gangrenous, perforated Meckel's diverticulum with abscess and acute intestinal obstruction mimicking an appendicular lump.

Conclusion: Even it is rare finding, but we should be vigilant for this entity while dealing with it in emergency and patient should not be kept on nonsurgical management assuming it to be an appendicular lump.

Keywords: Meckel’s diverticulum, obstruction, perforation, abdominal abscess, two and half year child


1. Introduction

Meckel's Diverticulum is a congenital anomaly of the small gut caused by an incomplete obliteration of omphalomesenteric duct. It was originally described by Fabricius Hildanus in 1598.

It is known by the name of Johann Friedrich Meckel, who described the small bowel diverticula and established its embryonic origin. [1] In year 1700 Lritte reported two patients as traction diverticula in hernia sac. In majority of patients the embryonic vitello-intestinal duct which usually obliterates by the fifth to ninth week of intrauterine life but in about 2% of population however a vitelline remnant persists, its anatomic localization is not constant, it most often present 2 feet cm proximal to ileo-cecal valve and 5 cms in length which may result in a variety of intra-abdominal complications.

Meckel's diverticulum is a common congenital anomaly of small gut and is quiet difficult to diagnose. The sensitivity of 99 m Tc pertechnetate scintigraphy is less for patients with low bleeding and low anemia. Moreover, 50% of children who are symptomatic present with an acute abdomen, and the diagnosis can be made only at surgery. [Jayesh Sagar, 1 Vikas Kumar, 2 and D K Shah 3, Meckel's diverticulum: a systematic review J R Soc Med. Oct 2006; 99 (10): 501–505. PMCID: PMC1592061 according to their study, 50% cases present before 2 years of age and rest after 2 years of age.] Patients with perforated Meckel’s diverticulum may present with features of pain in right iliac fossa, same as acute appendicitis. The complications caused by Meckel's diverticulum include intussusception and volvulus in adolescents and acute bleeding in adults [2,3].

2. Case presentation

A two and half year old male child was admitted to our tertiary care centre, at Jawaharlal Nehru Medical college and allied hospital situated in central India, in February of 2010, with complaints of distension of abdomen and constipation. As per parents he had had distension, restlessness pain in abdomen constipation followed by fever for last two days, where he was admitted previously. He was referred to our centre after 6 days of conservative management.

On physical examination; the baby was crying continuously, weighing 11 kilograms, heart rate was 140 per minute with distended abdomen, tender right iliac fossa and right lumbar region and raised temperature over right flank of abdomen and lump palpable in right iliac fossa, on auscultation bowel sounds were absent. On per rectal examination ballooning was present finger was stained with mucus and rectum was empty; leukocytes were 14000/ cmm, Hemoglobin 12 gm %, rest of the biochemical parameters were normal. Urgently X-ray abdomen done which did not yield much, Ultrasonography of abdomen revealed nothing, only
gaseous distension was noted. In Computed tomographic scan it was reported as appendicular abscess or Meckel’s diverticulitis.

Decision of emergency laparotomy was planned looking at the condition of patient and radiological reports and per-operative findings omentum was adhered to bowel loops forming lump in right iliac fossa (rare finding, as omentum is smaller in children) extending up to right lumbar region causing obstruction, on adhesiolysis; retroceacal abscess was present, appendix was normal, 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 was also gangrenous and perforated Meckel’s adhered to the peritoneum the case was managed by drainage of abscess, adhesiolysis and resection anastomosis and peritoneal lavage. Uneventful recovery of patient was there and patient was discharged on seventh post operative day.

3. Discussion

It is a true diverticulum of the ileum containing all three layers of the small intestine and present on the antimesentric border of distal ileum, usually about 2 feet from the ileo-cecal junction. Meckel's diverticulum is one of the common congenital anomaly of the gastrointestinal tract. Length and the base of Meckel’s diverticulum are the well-known causative factors for complications, a long and narrow-based diverticula are more prone for obstruction or inflammation. This narrow lumen leads to obstruction and causing inflammation of the diverticulum as in appendicitis and this is the main reason for perforation. Perforated Meckel’s diverticulum may present with right iliac fossa pain, as in cases of acute appendicitis. [3,4] A report of study on Meckel's diverticulum in children in 24 patients showed complications like bleeding, obstruction, diverticulitis and peritonitis. [5,6] Meckel’s diverticula are known to present with a myriad of complications, in 1 to 2 years age group 77% of lesions are asymptomatic. In children with age 4 or more only 15% are symptomatic. In 90% of histopathology reports bleeding diverticula contains heterotrophic mucosa in majority of patients aged 1 month to 4 years of age 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 pertechnetate radioisotope scintigraphy 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 patho-physiology 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. [7,8,9] 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].

4. Conclusion

In conclusion, even it is rare finding, but we should be vigilant for this entity while dealing with in emergency awareness of the possibility of that there could be a gangrenous Meckel's diverticulum simulating appendicular lump and treating it with Oschner Sherren’s regime. It is better to handle such type of case showing all the features of appendicular lump and on operating table found to be a perforated Meckel’s diverticulum. These types of cases should be shifted to tertiary center without wasting time, as they can’t be managed at primary center as they need a team approach.

References