



A Rare Case of Perforated Meckel's Diverticulum Coexisting with Acute Appendicitis

Bhavana Satwick¹, Mangesh Hivre², Dilip Gupta³

¹Senior Resident, Department of Surgery, Mahatma Gandhi Institute of Medical sciences, Wardha.

²Assistant Professor, Department of Surgery, Mahatma Gandhi Institute of Medical Sciences, Wardha.

³Professor and head, Department of Surgery, Mahatma Gandhi Institute of Medical sciences, Wardha.

ABSTRACT: Meckel's Diverticulum is a common congenital anomaly of the gastrointestinal tract due to persistence of vitellointestinal duct. It is usually found as an incidental finding in approximately 2 to 4 % of population in patients undergoing appendectomy or any other gastrointestinal pathology. Obstruction, gastrointestinal bleeding, diverticulitis and perforation are the various presentations of complicated Meckel's diverticulum. Incidence of perforated Meckel's diverticulum is only about 0.5%. Coexistence of appendicitis with perforated Meckel's diverticulum is a rare presentation thus, making routine search for meckel's diverticulum intraoperatively in all cases of appendicitis a mandatory practice. Here we report such a rare case of coexistence of perforated meckel's diverticulum with acute appendicitis in a 12 year female patient.

KEYWORDS: Appendicitis, Incidental, meckel's diverticulum, Obstruction, Perforated.

INTRODUCTION

Meckel's diverticulum is a congenital malformation due to persistence of vitellointestinal duct. It's incidence is reported to be 0.6 to 4% of population.(1) Majority of meckel's diverticulum are asymptomatic and are discovered incidentally intraoperatively.(2) Meckel's diverticulum most commonly presents with gastrointestinal bleeding in children and with obstruction in adults.(3) Symptoms of inflamed meckel's diverticulum resemble those of acute appendicitis making it a common differential diagnosis of appendicitis in children.(2) Incidence of perforated Meckel's diverticulum is very rare estimated to be about 0.5%. (4). Here we report a rare finding of coexistence of acute appendicitis along with perforated Meckel's diverticulum in a 12 year female patient.

CASE

A 12 year old female patient presented to the surgery emergency department with complains of pain in right iliac fossa region of abdomen since 3 days which was associated with anorexia and multiple episodes of vomiting. Abdominal examination revealed tenderness and rebound tenderness in right iliac fossa along with localized guarding but no rigidity. There was no history of fever or gastrointestinal bleeding. There were no similar complaints in past. A clinical diagnosis of acute appendicitis with possibility of appendicular perforation was made. Ultrasound of abdomen was suggestive of appendicular perforation with appendicolith with 21.1 ml periappendicular fluid collection (Figure 1). Patient's total leukocyte count was 10,000/dL and differentiated leukocyte count showed 61% granulocytes and 33% lymphocytes. Patient was posted for emergency surgery and was operated through Mcburney's incision. Intraoperatively, appendix was retrocecal and was found to be inflamed at body and tip but not perforated (Figure 2). Upon performing appendectomy, ileum was traced proximal to ileocaecal junction and Meckel's diverticulum was found 40 cm proximal to ileocaecal junction. The diverticulum was narrow based, perforated at the blind end with omentum being adhered to it. Resection of Meckel's diverticulum along with adjacent unhealthy inflamed bowel segment was done with end to end bowel anastomosis. Histopathology report confirmed specimen to be perforated meckel's diverticulum with necrotic and haemorrhagic areas and specimen of appendix showed presence of inflammatory infiltrate (Figure 4). Postoperative recovery of patient was uneventful and patient was discharged on postoperative day 6.

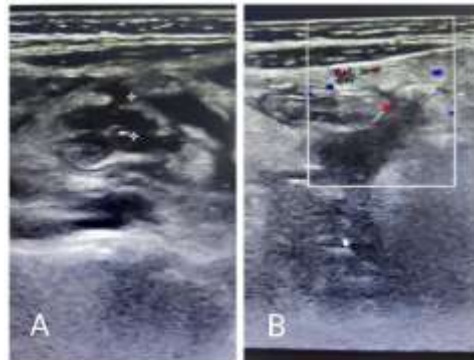


Figure 1: Ultrasonography image showing: A) inflamed appendix. B) periappendiceal fluid collection.

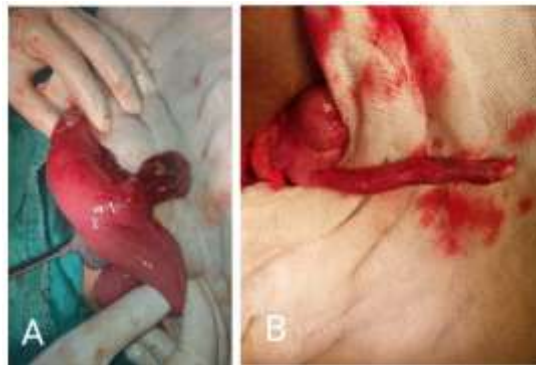


Figure 2: Intraoperative image showing: A) perforated meckel's diverticulum. B) Appendix inflamed at body and tip.



Figure 3: Resected specimen of inflamed appendix (left) and perforated meckel's diverticulum along with adjacent bowel segment (right).

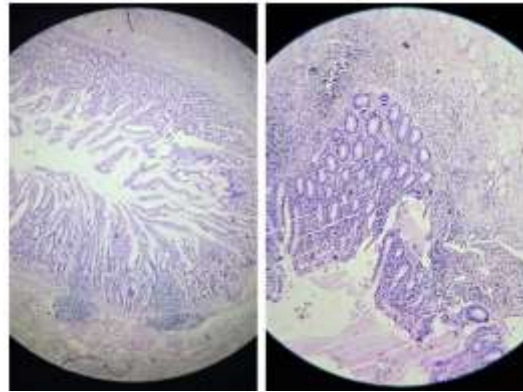


Figure 4: Histopathology images of A) Perforated meckel's diverticulum (left); B) Appendicitis (showing inflammatory infiltrate) (right)

DISCUSSION

Meckel's diverticulum is a congenital anomaly of the gastrointestinal tract due to persistence of the vitellointestinal duct. Vitellointestinal duct usually gets obliterated in 5 to 7th week of life. (1) Usually Meckel's diverticulum is an incidental finding when abdominal exploration is done for some other pathology. (2) The most common complications of Meckel's diverticulum are obstruction, haemorrhage, perforation, diverticulitis and intussusception. (5) Majority of complications of Meckel's diverticulum occur between 4 to 5 years of age, whereas a second peak is often reported between 7 to 16 years of age. Perforation of Meckel's diverticulum is a rare presentation seen in only 0.5% patients. (3) Ultrasonography is the most commonly used test for diagnosis of acute appendicitis, however it is a very nonspecific investigation for diagnosing Meckel's diverticulum preoperatively which may only be seen as bowel wall thickening or localized fluid collection in abdominal cavity on ultrasound. (6) The signs and symptoms of Meckel's diverticulum resemble that of acute appendicitis. There are many cases of Meckel's diverticulum being found as an incidental finding in patients who were operated for appendicitis, however, the coexistence of Meckel's diverticulum with acute appendicitis is rare. Medical literature suggests that search for Meckel's diverticulum should be sought if intraoperatively appendix is found to be normal. (7) But considering our case it can be emphasized that a search for Meckel's diverticulum should be done in all cases even if appendicular pathology is present. Such practice if incorporated routinely in our practice will lessen the chances of missing out complicated Meckel's diverticulum coexistent with acute appendicitis in patient being operated for the same.

CONCLUSION

Meckel's diverticulum is a very common differential diagnosis of acute appendicitis in children. Obstruction, diverticulitis, haemorrhage, perforation are the usual complications of Meckel's diverticulum. Though it is usually found as an uncomplicated diverticulum incidentally in patients operated for acute appendicitis, a complicated Meckel's diverticulum may also coexist along with an inflamed appendix. We therefore emphasize that a search for Meckel's diverticulum should be carried out in all patients irrespective of whether appendix is found to be normal or inflamed intraoperatively. Such practice will definitely help in early diagnosis and emergent management of complicated Meckel's diverticulum coexisting with an inflamed appendix thus reducing patient morbidity and improving patient prognosis.

REFERENCES

1. Sagar J, Kumar V, Shah DK. Meckel's diverticulum: A systematic review. *J R Soc Med.* 2006;99(10):501–5.
2. Chohan TA, Tabook SA, Elmukashfi E, Sakroon SM. Acute appendicitis or.... Is it meckel's diverticulitis? *Oman Med J.* 2010;25(1).
3. Diverticulitis AM, Appendicitis MA. Case 17121. 2021;(Md).
4. Report C. *Annals of Clinical Case Studies Perforated Meckel 's Diverticulum Mimicking Acute Appendicitis in an Adult Female - A Case Report.* 2022;4:15–7.



5. Rahmat S, Sangle P, Sandhu O, Aftab Z, Khan S. Does an Incidental Meckel's Diverticulum Warrant Resection? Cureus. 2020;12(9).
6. Kuru S, Kismet K. Meckel's diverticulum: Clinical features, diagnosis and management. Rev Esp Enfermedades Dig. 2018;110(11):726–32.
7. Senocak R, Ince M, Kaymak S, Kilbas Z, Ozer MT. Clinical Gastroenterology and Treatment A Rare Presentation in Older Adults ClinMed. 2016;2(1):16–8.