MECKEL’S DIVERTICULUM: A CASE SERIES

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ABSTRACT

Meckel’s diverticulum is the most prevalent congenital abnormality of the gastrointestinal tract. It is the persistent remnant of vitellointestinal duct, with a prevalence of 2% in the general population. Equal incidence is found in men and women. (1) Meckel’s diverticulum represent a diagnostic challenge, especially in adults, as most are asymptomatic. Surgical resection of the diverticulum or segment of ileum bearing it is the treatment of choice for symptomatic Meckel’s. (1) Here we report three different presentations of Meckel’s diverticulum in Adults.

INTRODUCTION

Meckel's diverticulum is the persistent remnant of vitellointestinal duct, most common congenital diverticulum of the gastrointestinal tract with a prevalence of 2% in the general population, equal incidence is found in men and women. (1) Vast majority of Meckel’s diverticula are asymptomatic. The diagnosis made incidentally, upon laparotomy for other intra-abdominal conditions, namely acute appendicitis. Haemorrhage (25%-50% of symptomatic Meckel’s), obstruction and diverticulitis (10%-20% of symptomatic Meckel’s) are the three main categories of complications resulting from Meckel’s diverticulum. (1) Spontaneous perforation of Meckel's diverticulum is very rare and mimics acute appendicitis. However, ectopic gastric or pancreatic tissue, present in 50% of the cases, leads to a vast array of differential diagnoses. Meckel's Diverticulitis and its complications still represents a diagnostic challenge, especially in the adult population.

Simple Diverticulectomy OR resection of illal segment bearing Meckel’s diverticulum is the surgical treatment of choice. (1)

Case Reports

Case 1

14 year old boy presented to casualty with chief complaint of pain in abdomen in the past two days. There was no history of trauma to the abdomen or fever. There was history of vomiting and diarrhoea. He complains of continuous sharp shooting pain in the abdomen, temporarily relieved upon medication otherwise continuous, for which he was rushed to hospital and investigated. His past medical and surgical history was not contributory.

On admission patient was thin built, averagely nourished, conscious and oriented to time place and person, with pulse rate of 110 bpm and blood pressure of 100/70 mmHg on supine position, with respiratory rate of 18 breaths per minute. Per abdomen examination revealed tenderness, guarding and rigidity present over all the quadrants of the abdomen. Per rectal examination was found to be normal. Cardio respiratory system findings were normal.

Blood investigation revealed normal picture with slightly raised TLC. Chest x-ray showed gas under diaphragm, ultrasonography of abdomen-pelvis showed reverberating multiple shadows surrounding the hepatic areas, with sub hepatic and pelvic collection. CT scan showed that patient has Meckel’s perforation.

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Intraoperative, midline laparotomy revealed pelvic and para colic soiling, with Meckel’s diverticulum at 80 cm from ileocecal junction, anti-mesenteric border, with wide mouth and faecal content draining out of 0.5-1 cm perforation near the fundic area. Rest of the bowel appeared grossly normal with all solid organs found to be normal. Decision of short segment resection of ileum containing Meckel’s with perforation and anastomosis of illeo-ileoal was taken & executed. Patient responded well in post-operative period and had uneventful recovery and was discharged, with follow up after 14 days for suture removal and had no complaints on follow up.

**Case 2**

A 32 year old male was referred from outside hospital with complaints of acute abdomen with obstruction which was managed conservatively. On admission, ultrasonography and CT was suggestive of obstruction.

On examination, patient was well built, well-nourished, conscious oriented to time place and person, with pulse rate of 100 bpm, blood pressure of 120/80 mmHg on supine position, with respiratory rate of 20 breaths per minute. Per abdominal examination revealed distension with tenderness and guarding rigidity all over the abdomen. Per rectal examination revealed roomy rectum. Intraoperatively distended bowel loops were seen looped around the band with Meckel’s diverticulum. Band was released to find a 10 cm loop of gangrenous bowel which was looped around the band. Resection of gangrenous segment with Meckel’s diverticulum and illeo-ileoal anastomosis was done. On Post-operative day 5 drain was accidentally removed and found to have feculent discharge through the drain site, for which patient was re-explored. Intraoperatively it was found to have a new perforation proximal to anastomotic site and primary closure was done. Again, on post-operative day 5, drain site had feculent discharge. Patient was managed conservatively as he had low output fistula. Patient was hypoproteinemic (albumin) for which patient was transfused with 20% albumin for 3 days. On Post-operative day 15, sutures were removed, and on post op day 30, low output fistulous track also healed. And had no complaints thereafter so far.

**Case 3**

A 58 year old male presented to casualty with chief complaints of abdominal pain dull aching, gradually increasing, associated with vomiting and constipation for 4 days. Patient was investigated and found to have features suggestive of obstruction.

**HPE**: Section studied showed gangrenous and necrosed mucosa, submucosa, muscle coat and serosa along with dense infiltration by polymorphs along with congested blood vessels in Meckel’s and adjacent small bowel.
On admission patient was of thin built, averagely nourished, having tachycardia, pulse 110 bpm, BP 110/70 mmHg. Per abdominal examination revealed distension, guarding and rigidity, per rectal examination NAD.

Intraoperatively the small bowel loops were found to be distended. A gangrenous, twisted Meckel’s diverticulum was found to be adhered to adjacent small bowel loops. Surrounding entire bowel was normal. Short segment resection of gangrenous Meckel’s with illeo-ileal anastomosis was done. Patient did well with uneventful post-operative period and was discharged on post-operative day 14. Follow up had no complaints.

**HPE:** Section studied showed Meckel’s diverticulum with normal intestinal mucosa and extensive submucosal, muscular and serosal haemorrhages, along with acute necro-inflammatory infiltrate. Findings consistent with gangrenous changes of Meckel’s diverticulum.

The case series by Yamaguchi and colleagues stated obstruction as the most common presentation in adults with Meckel’s than haemorrhage. (3). Various mechanism causing the obstruction were reported as follows invagination or intussusception where Meckel’s acted as a leading point (most common) (3,5), and other causes included volvulus around fibrotic bands adhered to umbilical area, inflamed Meckel’s causing adhesion, Littre’s hernia and diverticular stricture. (3,4,5). Rarely enterocolith formation were seen.

Second most common presentation was found to be inflammatory i.e. diverticulitis and related perforation. Clinically indistinguishable from acute appendicitis unless intraoperatively diagnosed. Further complication may lead to subsequent perforation and abscess or fistula formation.

Haemorrhage due to Meckel’s is the most common presentation in children. Children present with dark red or maroon coloured stool whereas its less common in adults and presents with crampy abdominal pain and melena. This hemorrhage account is due to heterotrophic mucosa in Meckel’s, mostly being gastric mucosa.

Neoplasms also occur in Meckel’s as NET (77% most common), adenocarcinoma (11%), GIST (10%) and Lymphoma (1%). (1)

**CONCLUSION**

Presentation of complicated Meckel’s diverticulum in adults is infrequent. The diagnosis due to complicated Meckel’s diverticulum requires a very high index of suspicion. The most useful investigation is abdominal computed tomography. Treatment is done according to intraoperative findings mostly requiring resection of involved bowel with Meckel’s and anastomosis.

**Prognosis:** Patients undergoing surgery for complications due to Meckel’s diverticulum have a good post-operative outcome.

**Bibliography**