

Spontaneous Rupture of Adenocarcinoma of Meckel's Diverticulum- A Rare Entity

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ABSTRACT

Meckel's diverticulum is a true diverticulum from remnant of vitelline duct. It is most common congenital anomaly of intestine. It is associated with intestinal atresia and anorectal anomalies. It contains heterotrophic epithelium. Most common heterotrophic mucosa is gastric followed by pancreatic tissue. Adenocarcinoma arising from Meckel's diverticulum is very rare. Spontaneous perforation of adenocarcinoma rarely reported. Most of perforation reported in Meckel's diverticulum diagnosed during intraoperative period. This is a case report of spontaneous rupture of adenocarcinoma of Meckel's diverticulum, which was managed with primary resection and ileostomy.

Keywords: Benign disease, Vitelline duct, Ileostomy

CASE REPORT

A 55-year-old male patient reported to the general surgery department with complaints of abdominal pain for 10 days and vomiting for 5 days. Patient also complained of constipation for 3 days duration. There was a history of loss of appetite and loss of weight. Abdominal examination showed distended abdomen with guarding and rigidity. On auscultation bowel sound was absent. Investigations showed anemia with leucocytosis. Erect abdominal X-ray showed dilated small bowel with gas under diaphragm. CT abdomen showed dilated small bowel with free fluid [Table/Fig-1].

Preoperative diagnosis made as hollow viscus perforation and proceeded with laparotomy. Intraoperative findings were feculent fluid with pus [Table/Fig-2]. Stomach, duodenum and pancreas were normal. An ulceroproliferative growth was present in distal ileum along the antimesenteric border which was hard in consistency [Table/Fig-3]. A single perforation was noted in the ulceroproliferative growth which measured about 0.5x0.5cm. Rest of the organs was found to be normal. Primary resection and ileostomy was done, because peritoneal cavity was highly contaminated. Peritoneal cavity was irrigated with normal saline. Abdomen closed in layers with drain tube. Postoperative recovery was uneventful. Histopathological examination showed adenocarcinoma arising from the ectopic gastric mucosa with negative resected margin [Table/Fig-4].

DISCUSSION

Most of the Meckel's diverticulum (MD) is asymptomatic. It is only symptomatic when it is associated with complications. Most common presentation in children is gastrointestinal bleeding; whereas in adult is intestinal obstruction [1]. The main complications associated with Meckel's diverticulum is gastrointestinal bleeding, intestinal obstruction, ulceration, perforation, intussusceptions and malignant transformation. The incidence of malignant transformation of Meckel's diverticulum ranges from 1-5% [2]. Both benign as well as malignant tumours can occur in Meckel's diverticulum. Most common malignant tumour arising from Meckel's diverticulum is carcinoid tumour. Adenocarcinoma arising from Meckel's diverticulum is extremely rare and it carries poor prognosis [3].

Age of presentation of adenocarcinoma and carcinoid in MD varies. Adenocarcinoma present earlier than malignant Carcinoid tumour. Most of the adenocarcinoma arising from MD either mucinous or signet cell [4]. It usually present as acute abdomen or intestinal obstruction. Most of the adenocarcinoma of MD will have either

metastasis or adjacent organ infiltration due to delay in the presentation [5]. There is no specific investigation for the diagnosis. Few case reports showed elevation of CEA level but not diagnostic. It is usually diagnosed during intraoperative period or following histopathology report [6].

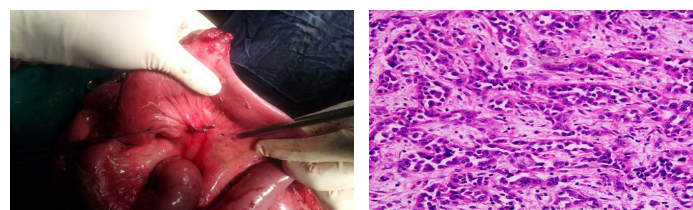
Perforation of Meckel's diverticulum occurs in both benign as well as in malignant disease. Benign disease includes presence of ectopic gastric mucosa [7], perforation following blunt and penetrating injury abdomen [8], ingestion of foreign body like fish bone or chicken bone [9] and formation of stone in Meckel's diverticulum [10]. Malignant disease includes gastrointestinal stromal tumour [11-13], adenocarcinoma of Meckel's diverticulum and Carcinoid tumour.

Most of the Meckel's diverticular perforation misdiagnosed as appendicular perforation or hollow viscus perforation. Most of the time imaging system failed to identify perforated Meckel's diverticulum. Perforated Meckel's diverticulum diagnosed while doing laparoscopy or open procedure for other differential diagnosis for perforation.

As we know MD associated with age less than 50 years, male sex, and diverticulum more than 2 cm and persistence of abnormal tissue



[Table/Fig-1]: CT abdomen showed dilated small bowel with free fluid
[Table/Fig-2]: Intraoperative findings were feculent fluid and flakes with dilated small bowel loops



[Table/Fig-3]: An ulceroproliferative growth was present in distal ileum along the antimesenteric border with single perforation was noted in the ulceroproliferative growth which measured about 0.5x0.5cm
[Table/Fig-4]: Glands show marked architectural distortion with crowding. The epithelial cells show cytological evidence of malignancy with variation in nuclear size and shape, hyperchromasia, increased and abnormal mitoses (H&E stain with 400X)

needs diverticulectomy in asymptomatic MD. But few studies and case report shows even presence of asymptomatic MD advised for diverticulectomy because of morbidity following surgery is negligible compared to the complication and associated malignant transformation [14]. Presence of gross abnormal mucosa in MD needs segmental resection rather than diverticulectomy because positive margin and surgical morbidity following reresection is high [6]. Most of the adenocarcinoma arising from MD need either segment resection or palliative resection along with adjuvant therapy [15].

CONCLUSION

Most of the Meckel's diverticulum is asymptomatic, but it can present with wide range of complication. Most of the Meckel's diverticular perforation misdiagnosed as appendicular perforation or hollow viscus perforation. Malignant transformation of Meckel's diverticulum associated with poor prognosis. Adenocarcinoma of Meckel's diverticulum carries poor prognosis compared to malignant Carcinoid. Incidental finding of Meckel's diverticulum need diverticulectomy because surgical morbidity was less compared to complication. Presence of gross abnormal tissue in Meckel's diverticulum need segmental resection rather than diverticulectomy because positive margin and surgical morbidity associated with reresection is very high.

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FINANCIAL OR OTHER COMPETING INTERESTS: None.

Date of Submission: **Mar 20, 2015**

Date of Peer Review: **Jun 09, 2015**

Date of Acceptance: **Sep 03, 2015**

Date of Publishing: **Nov 01, 2015**