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Gastrojejunocolic Fistula Changing Trends in Management

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Abstract

Introduction: Gastrojejunocolic fistula (GJCF) is a rare, preventable and debilitating complication of surgery for peptic ulcer. It commonly follows posterior gastrojejunostomy without/with incomplete vagotomy for peptic ulcer disease. Over period of time, with advances in medical science the modalities used in diagnosis and the treatment have changed. GJCF is associated with high morbidity and mortality. The objective of this study was to analyze our experience in the management of GJCF.

Materials and methods: Between 1993 and 2017, 13 patients presented with GJCF after surgery for peptic ulcer disease at our hospital for elective surgery. Data from the records of these patients was analyzed retrospectively. Weight loss, faeculent vomiting and diarrhoea were the common symptoms. Diagnosis of GJCF was made by barium enema, upper gastrointestinal endoscopy, colonoscopy and CT scan abdomen. All patients underwent surgery- single stage 9 patients, two stages 2 patients and closure of fistula with distal gastrectomy in 2 patients.

Conclusion: GJCF should be considered as a diagnosis in patients presenting with one or more of the clinical symptoms- faeculent vomiting, chronic diarrhoea, weight loss after surgery for peptic ulcer. Diagnosis of GJCF has evolved for barium enema to colonoscopy and CT scan. Depending on the nutritional status of patient the trend in the surgery has changed from multiple stages to single stage surgery.

have changed over time from barium enema to Endoscopy/ colonoscopy to CT scan abdomen. Trends in treatment have also changed due to advances in pre-operative nutrition support, antibiotics and post-operative critical care support from three stage procedure to single stage procedure which can now even be performed laparoscopically.

Material and Methods

This is a retrospective observational study. Thirteen cases of GJCF following surgery for peptic ulcer disease were studied. All cases of GJCF admitted for elective surgery between 1993 and 2017 were included in the study. Data of these patients was analyzed retrospectively. Details of age, sex, interval between surgery and development of GJCF, presenting symptoms, method of evaluation, surgical procedure performed and post-operative mortality and morbidity were recorded.

Patients were prepared preoperatively by parenteral nutrition, antibiotics, fluid and electrolytes correction and blood transfusions. Preoperative evaluation for diagnosis of GJCF was done by barium enema, endoscopy, colonoscopy and CT scan abdomen. Bowel preparation was done in all patients and surgical procedure planned based on general condition of patient and the nutritional assessment. Patient underwent either single stage (triple resection) or staged procedure (colostomy followed by triple resection). Intra operative record of type of gastrojejunostomy, evidence of vagotomy and size of fistula was noted.

Results

All patients were males, aged between 24 years to 50 years (mean: 34.7 years). The interval between the surgery for peptic ulcer and development of symptoms of GJCF was on an average 6.8 years (4 years to 18 years). Faeculent vomiting was present in 10/13 patient (76.9%), diarrhoea in 9/13 (69.2%) and weight loss was present in all patients (100%). History of stomal ulcer was present in 11/13 patients (85%). Emaciation with pedal oedema and anaemia was seen in all the patients. Midline scar was noted on 4/13 patients, right para-median scar in 9/13 patients. Previous operations notes were not available in any of the patients.

Keywords: Gastrojejunostomy; Stomal ulcer; Gastro jejunocolic fistula

Introduction

Gastrojejunocolic fistula (GJCF) is a rare and late complication of peptic ulcer surgery. Most patient present with classical triad of faeculent vomiting, chronic diarrhoea and weight loss. With advancements in the medical field, the management of GJCF has been evolving. Diagnostic modalities

The patients were evaluated by barium enema and GJCF was diagnosed in all patients based on this investigations. Endoscopy was done in 9 patients and faeculent reflux was observed in 4 patients, 1 patient has severe gastritis and 4 patients has stomal ulcer. Colonoscopy was done in 4 patients and fistula could be demonstrated in $\frac{3}{4}$ patients. CT scan abdomen with contrast was done in 2 patients and in both GJCF was clearly visualized.

In nine of the patients, single stage procedure (triple resection) was performed after proper preoperative preparation, in two patient, two stage procedure (colostomy followed by triple resection) and in two patients distal gastrectomy with closure of fistula and Billroth II reconstruction was done when size of fistula was very small

Data from the operative findings revealed that all the gastrojejunostomies were posterior gastrojejunostomy and in 11/13 patient's vagus was intact and in all patients fistula was demonstrated. In 11/13 the size of fistula was more than 1 cm in 2 patients the size of fistula was < 0.5 cm.

Post-operative morbidity included anastomotic leak in two patients of which one settled on conservative treatment and one progressed to sepsis and died, bleeding in one patient which settled on conservative treatment. One patient expired on 7th post-operative day due to anastomotic leak and sepsis. All complications and deaths were seen in patients who had undergone single stage procedure. The morbidity rate was 15.3% and the mortality rate was 7.7%.

Discussion

GJCF is a late complication of recurrent peptic ulcer disease. It develops from stomal ulcer which is in turn a result of inadequate surgery for peptic ulcer disease – gastrojejunostomy alone, incomplete vagotomy or inadequate gastric resection. One out of seven patients with stomal ulcer go on to develop a GJCF [1].

Surgery for peptic ulcer disease is rarely performed these days because of advancements in medical treatment like proton pump inhibitors and anti H. pylori therapy [2]. Most of the patients with GJCF present with clinical symptoms of diarrhoea, weight loss and faeculent vomiting with past history of surgery for peptic ulcer. Laboratory investigations show malnutrition, anaemia, dehydration with electrolytes imbalance.

There has been an evolution in the diagnosis of GJCF. Barium enema was the gold standard for diagnosis of GJCF.

Now upper gastrointestinal endoscopy or colonoscopy is used for diagnosis of GJCF. In recent times CT scan is replacing other investigations for diagnosis of GJCF [3]. Changing trends have also been noticed in the treatment of GJCF. Prior to 1930's three stage procedures - diverting colostomy followed by resection of fistula and then closure of colostomy for GJCF was used for and was associated with high mortality.

In 1938, Lahey [4] proposed a two state approach – stage I ileo sigmoidostomy with division of ileum and stage II enblock resection of fistula, distal 2/3 of stomach with right and transverse colon was carried out. There was significant reduction in mortality and morbidity with this procedure. In 1940's with advances in pre and post op care one stage procedure came in to use. Recently reports of GJCF being managed by laparoscopic single stage procedure have been published [5].

Conclusion

GJCF should be considered as a diagnosis in patient presenting with one or more of the clinical symptoms (faeculent vomiting, chronic diarrhoea, weight loss) after a period following surgery for peptic ulcer disease. It can be diagnosed by barium enema/ endoscopy/ colonoscopy/ CT scan. Presently colonoscopy/ CT is the diagnostic modality of choice. Depending on the nutritional status of the patient, definitive surgery can be performed in one, two or three stages. With advances in pre-operative nutritional support and post-operative critical care management, single stage procedure has become the standard of treatment.

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