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Case Report

Surgery Section

Double Prepyloric Gastric Ulcer Perforations Managed with Emergency Gastrojejunostomy and Feeding Jejunostomy: A Rare Case Report

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ABSTRACT

The perforation of prepyloric gastric ulcer is a surgical emergency that carries a high morbidity burden, but the rate of occurrence of double prepyloric perforation is extremely low, which thus presents both diagnostic and operative challenges. The presented case is of a 57-year-old male from India, who presented with a five-day history of abdominal pain, nausea, vomiting, and constipation. Cultural Extended Focused Assessment with Sonography for Trauma (E-FAST) and clinical examination indicated peritonitis with intra-abdominal fluid, thus warranting emergency exploratory laparotomy. During the intraoperative period, about 800 mL of purulent fluid was drained and 2 cm and 1.5 cm adjacent prepyloric perforations were detected along the lesser curvature. The patient had severe intraoperative malnutrition, which was manifested through cachexia, depleted omental fat, and hypoalbuminaemia and required a surgical approach based on his compromised physiological reserve. The perforations were primarily closed and then a gastrojejunostomy with feeding jejunostomy was done to provide sufficient gastric bypass and postoperative nutritional support. Histopathologic examination of the patient revealed gastric ulceration with mucosal denudation, fibrinous exudate, bacterial colonies, and inflammatory infiltration, which were consistent with perforation. The patient responded to antibiotics, analgesia, and enteral feeding, which was achieved through jejunostomy, with a gradual improvement in the clinical condition. Oral intake was then started and tolerated. After four weeks, the feeding jejunostomy was removed, and the patient also remained asymptomatic on follow-up. The case of double prepyloric ulcer perforations is quite rare, and it highlights the necessity of immediate surgical intervention and an individual approach to patients with poor nutritional status. Reporting of such cases is significant to provide insights into optimal operative decision-making in complex cases of upper gastrointestinal perforation.

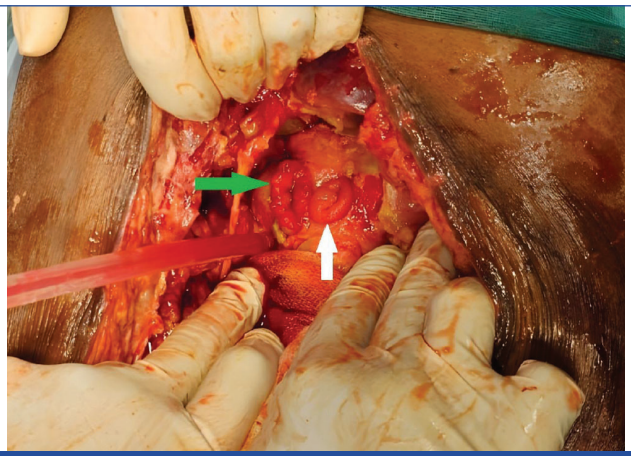
Keywords: Enteral nutrition, Peritonitis, Primary repair failure, Surgical emergency, Ulcer complications

CASE REPORT

A 57-year-old male presented to the surgery outpatient department of a tertiary healthcare hospital in India with chief complaints of abdominal pain, nausea, vomiting, and constipation for the last five days. The pain was gradual in onset, initially localised only in the epigastric region, dull aching in nature, and aggravated by the intake of food. He also complained of nausea and vomiting for the same duration, which was non-projectile, non-bilious, and non-blood tinged, but containing food particles. He had no prior similar episodes.

His past history was significant for chronic alcohol consumption for the past 20 years and a known case of hypertension, for which he was on regular treatment. There was no history of diabetes mellitus, tuberculosis, or any other chronic systemic illness in the patient. On admission, clinical examination revealed features which included diffuse abdominal tenderness with guarding and rigidity, rebound tenderness, absent bowel sounds, and severe epigastric tenderness, thus suggestive of peritonitis. Initial laboratory investigations of the patient demonstrated leucocytosis along with neutrophilic predominance, increased C-reactive protein, metabolic acidosis, and mild electrolyte imbalance, findings consistent with systemic inflammatory response. After initial stabilisation, an E-FAST examination was performed, which was suggestive of intra-abdominal fluid collection; thus, he was taken up for emergency exploratory laparotomy owing to his deteriorating clinical condition.

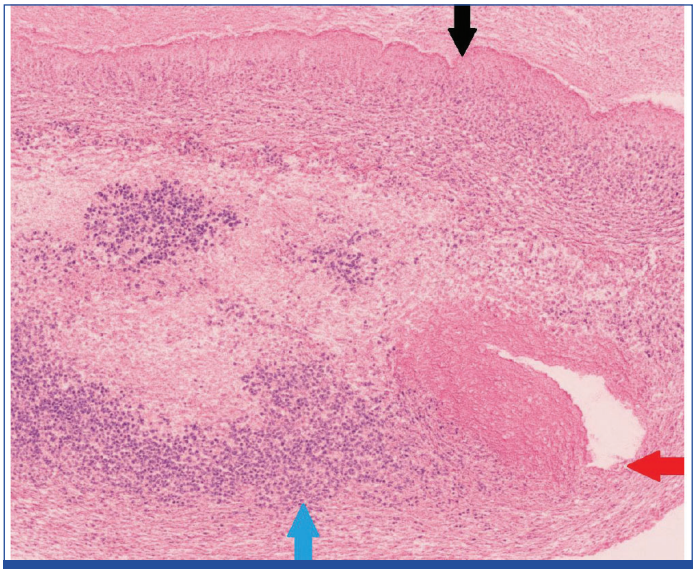
The patient was in supine position, and under general anaesthesia, an upper midline laparotomy incision was made extending 10 cm above and 4 cm below the umbilicus. On opening the peritoneum, dense adhesions were noted, which were lysed. Approximately 800 mL of purulent peritoneal fluid was drained and sent for culture. Thorough peritoneal lavage was carried out. Two prepyloric perforations of size 2 cm and 1.5 cm, adjacent to each other, were identified along the lesser curvature of the stomach as shown in [Table/Fig-1].



[Table/Fig-1]: Prepyloric perforation of size 2 cm (highlighted with green arrow) and 1.5 cm (highlighted with white arrow).

A biopsy of the perforated margins was taken and sent for histopathological examination. Multiple purulent flakes were seen over the intestines. The perforation was then closed using PDS 2-0 sutures, and owing to the patient's poor nutritional evidenced by intraoperative findings of severe cachexia, depleted omental fat, and hypoalbuminaemia and haemodynamic parameters intraoperatively, a decision of gastrojejunostomy with feeding jejunostomy was

taken and followed. Bowel walk revealed no other perforation. The peritoneal cavity was then irrigated thoroughly, and the abdomen was closed in layers with abdominal drains in situ. Histopathological examination of the prepyloric tissue revealed denudation of the gastric mucosa along with fibrinous exudate, colonies of bacteria, also inflammatory cell infiltration. The histopathology image of the patient was suggestive of a gastric ulcer with evidence of perforation, as shown in [Table/Fig-2].



[Table/Fig-2]: Histopathology image of a patient suggestive of a gastric ulcer with evidence of perforation. The section shows denudation of the gastric mucosa (black arrow), overlying fibrinous exudate with bacterial colonies and dense inflammatory cell infiltration extending into the ulcer base (blue arrow) and gastric perforation (red arrow) (H&E, 100x).

Postoperatively, the patient was given antibiotics, proper analgesia, and nutritional support was also provided by feeding jejunostomy. Oral feeds were gradually initiated, which were well tolerated by the patient. Gastrojejunostomy with feeding jejunostomy and tension suturing is depicted through [Table/Fig-3]; tension sutures were removed postoperatively on day 10 after confirming adequate wound healing. The patient improved clinically and was discharged in stable condition. On follow-up after four weeks, the feeding jejunostomy was removed. The patient was passing stools comfortably, had no abdominal pain, nausea, or vomiting, and reported no new complaints.

[Table/Fig-3]: Gastrojejunostomy with feeding jejunostomy and tension suturing.

DISCUSSION

Gastrointestinal perforations are still one of the most difficult emergent conditions in surgery that may be characterised by a high morbidity and mortality in case of failure to diagnose and treat them promptly [1]. The most common causes of gastric perforations are gastric ulcers, which usually manifest as acute abdomen and peritonitis and the standard surgical management of gastric perforation is primary closure with an omental (Grahams) patch following peritoneal lavage [2,3]. Most perforations are solitary, but rarely, cases of synchronous or multiple peptic ulcer perforations have been reported, e.g., gastric and duodenal or antral and prepyloric perforations [4].

In a case reported by Itama EP et al., a 51-year-old Barbadian female having anaemia presented with acute abdominal pain. Also, her imaging confirmed perforation due to a prepyloric gastric ulcer, which was managed with Graham patch repair and washout [5]. The postoperative course was then complicated by a persistent intra-abdominal collection, which required Interventional radiology drainage as well as antibiotics escalation, following which she gradually improved and was discharged in stable condition [5]. Similar to the present case, prepyloric perforation and purulent contamination were present; however, radiologic drainage was required, unlike the present case. Reyes-Morales JM et al., also reported a 44-year-old Mexican female with rheumatoid arthritis on chronic glucocorticoids and Non-steroidal Anti-inflammatory Drugs (NSAIDs) who developed a prepyloric gastric perforation complicated by recurrent peritonitis despite initial omental patch repair [6]. Multiple re-explorations showed severe tissue necrosis, which required the creation of a controlled gastrocutaneous fistula, there after combined surgical and endoscopic management, including Percutaneous Endoscopic Gastrostomy (PEG) placement and nasojejunal feeding, led to gradual recovery and stable discharge [6].

In a case report by Abdulrasoul MA et al., a 43-year-old Saudi Arabian male with recurrent upper GI bleeding and severe anaemia was described; his CT scan showed pneumoperitoneum and surgery identified a posterior gastroesophageal junction perforation managed with primary closure and an omental patch [7]. Although initially he recovered well, but later required a partial gastrectomy for massive rebleeding at nine months, after which his long-term follow-up remained stable [7]. However, the present case had no recurrent bleeding or need for reoperation. Sharma AK et al., in a similar case, reported a 42-year-old Indian male with chronic NSAID use who presented with acute abdomen and was found to have two separate gastric perforations with extensive peritoneal contamination, both of which were repaired with primary suturing and an omental patch [8]. He then recovered uneventfully, and also follow-up endoscopy showed erosive gastritis at the perforation sites, which supported NSAID-induced mucosal injury as the likely cause [8].

In another case report, Ozdemir K et al., described an 89-year-old Turkish male with multiple comorbidities as well as concurrent Coronavirus Disease (COVID-19) who presented with diffuse peritonitis and was found to have two prepyloric gastric perforations, which were managed with Graham patch repair [9]. Despite surgery, his postoperative course was complicated by worsening viral pneumonia, and he died on the seventh postoperative day due to cardiorespiratory failure [9]. The present case had better physiological reserve and no severe comorbidities and hence the patient survived. Hashmi JZ et al., in a case described a 23-year-old Pakistani woman who developed both pyloric and duodenal perforations ten days after caesarean section while on opioids and NSAIDs, presenting with sepsis, Acute Respiratory Distress Syndrome (ARDS), and free intraperitoneal air [10]. Both perforations were then repaired with Graham patches, and although she required intensive postoperative support, she recovered well and remained stable on follow-up [10]. Comparative summary of previously published cases and the present case is described in [Table/Fig-4] [5-10].

Author/ Year	Patient Demography	Past History / Risk Factors	Clinical Presentation	Imaging Findings	Intraoperative Findings	Management	Postoperative Course / Outcome	Comparison with Present Case	Prognosis & Dietary Recommendations
Itama EP et al., [5] (2024)	51-year-old female, Barbados	Anaemia	Acute abdominal pain, weakness, nausea, vomiting	Free intraperitoneal air & fluid	Prepyloric gastric perforation	Graham's patch + washout; IR drainage; escalation of antibiotics	Abscess (4.7 cm) aspirated; stable discharge	Similar to present case: prepyloric perforation and purulent contamination; however, required radiologic drainage unlike present case.	Good prognosis after abscess control. Dietary advice: gradual reintroduction of soft → normal diet; avoid NSAIDs; acid suppression long-term.
Reyes-Morales JM et al., [6] (2025)	44-year-old female, Mexico	Rheumatoid arthritis; chronic steroids & NSAIDs	Recurrent peritonitis; sepsis; ICU stay	Not detailed	Necrotic gastric tissue; non-resectable perforation; persistent peritonitis	Closure with omental patch → controlled gastrocutaneous fistula; PEG & NJ feeding	Gradual recovery; fistula closure; stable discharge	Much more severe course than present case—necrosis, multiple re-laparotomies, fistula creation; present case did not require advanced endoscopic rescue.	Moderate prognosis due to immunosuppression. Diet: PEG-based feeding → gradual oral intake; avoid NSAIDs lifelong.
Abdulrasoul MA et al., [7] (2025)	43-year-old male, Saudi Arabia	Prior gastric perforation; incisional hernia repair	Upper GI bleed; severe anaemia	Pneumoperitoneum	Perforation near GE junction	Primary closure + omental patch; jejunostomy; later partial gastrectomy	Stable long-term outcome after reoperation	Present case had no recurrent bleeding or need for reoperation.	Fair prognosis; high recurrence risk. Diet: PPI therapy; small frequent meals; avoid alcohol & irritants.
Sharma AK et al., [8] (2015)	42-year-old male, India	Long-term NSAIDs	Acute abdomen with fever, vomiting, constipation	Free gas	Two gastric perforations, 1500 mL bilious contamination	Primary repair + omental patch + lavage	Uneventful recovery	Similar: multiple perforations & peritoneal contamination. Present case had poorer nutritional status requiring GJ and FJ.	Excellent prognosis after repair. Diet: avoid NSAIDs; bland diet initially; long-term PPI.
Ozdemir K et al., [9] (2023)	89-year-old male, Turkey	Parkinson's disease, BPH, DM, HTN, COVID-19	Acute abdomen + sepsis	Viral pneumonia + free air	Purulent peritonitis, multiple abscesses, two perforations	Graham patch repair	Deteriorated; died post-op day 7	Present case had better physiological reserve and no severe comorbidities → survived.	Poor prognosis due to age, comorbidities, COVID. Diet: NA due to mortality.
Hashmi JZ et al., [10] (2022)	23-year-old female, Pakistan	Recent C-section; NSAID/opioid use	Distension, pain, vomiting, ARDS	Free gas; USG fluid	Pyloric + duodenal perforation; 2000 mL fluid	Graham patch ×2 + lavage	ICU stay; good recovery	Younger patient with dual perforations but strong recovery. Present case had two perforations but required GJ due to nutritional depletion.	Good prognosis. Diet: gradual oral intake; high-protein recovery diet; avoid NSAIDs.

[Table/Fig-4]: Comparative summary of previously published cases and present case [5-10].

CONCLUSION(S)

Double prepyloric gastric ulcer perforations are extremely uncommon surgical manifestations and are very difficult to diagnose and treat. Early identification, immediate resuscitation and early surgical intervention are important to enhance the outcome. The choice of gastrojejunostomy with feeding jejunostomy that was personalised to the poor intraoperative condition of the patient in this case turned out to be effective in providing recovery and nutrition. The given case shows the significance of personalised surgical planning in complicated gastric perforations and contributes to the existing paucity in the literature regarding this uncommonly occurring phenomenon.

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