

Perforation of the anastomotic line post-truncal vagotomy and gastrojejunostomy – Rare clinical entity and a review of literature

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ABSTRACT

Peptic ulcer disease, that is refractory to medical management, must be managed surgically. A truncal vagotomy combined with a gastrojejunostomy or a pyloroplasty was a commonly done surgery in the past, along with drugs that control *Helicobacter pylori* infection. Gastrojejunostomy may be associated with several complications such as hemorrhage, perforation, retrograde intussusception, retroanastomotic hernia, adhesions, and gastrojejunocolic fistula. We report a case of an acute episode of spontaneous perforation of the gastrojejunostomy, which was done in the same patient 3 years back along with truncal vagotomy for a complicated duodenal ulcer with gastric outlet obstruction. We have also reviewed the literature associated with this rare case.

Key words: Acute abdomen, Anastomosis, Duodenal ulcer, Gastric outlet obstruction, gastrojejunostomy, Peptic ulcer, Peritonitis, Truncal vagotomy

Peptic ulcer disease is a clinical entity that occurs mainly due to the disruption of the protecting factors of the stomach that is caused by various external insults such as *Helicobacter pylori*, nonsteroidal anti-inflammatory drugs, smoking, and alcohol. Mostly a duodenal ulcer would be commonly related to *H. pylori* infection. Historically before the advent of novel drugs, surgery was the mainstay of treatment for peptic ulcer disease. Truncal vagotomy was easy to perform but an associated drainage procedure is a must. Gastrojejunostomy has various complications such as hemorrhage, perforation, retrograde intussusception, retroanastomotic hernia, adhesions, and gastrojejunocolic fistula. Acute perforation of the gastrojejunostomy anastomosis due to peptic ulcer is an extremely rare clinical entity and only a few documented cases have been reported. We report a similar case in an era where surgery for peptic ulcer disease was perhaps considered historical.

CASE REPORT

A 48-year-old gentleman, who is a known smoker, presented to our emergency department with a history of severe upper abdominal pain since the morning. He also had an episode of vomiting and abdominal distention that was progressive. There was no history of trauma or fever or chest discomfort. The patient underwent a truncal vagotomy and gastrojejunostomy 3 years back due to a duodenal ulcer that caused gastric outlet obstruction.

On examination, his temperature was 38.2°C, pulse was 110 beats per minute, blood pressure was 138/70 mmHg, and respiratory rate was 22 breaths per minute. His abdomen had

an upper midline laparotomy scar. The left upper quadrant was tender on palpation, but the entire abdomen was distended and rigid with guarding. Rebound tenderness was present over the entire abdomen. The liver dullness was obliterated. Bowel sounds were absent and the hernia orifices were normal. A per rectal examination was essentially normal.

The patient was initially resuscitated with a nasogastric decompression; intravenous fluids and his urine output was closely monitored. An urgent X-ray abdomen was called for and it revealed a tiny chink of free gas under the right dome of the diaphragm [Figure 1]. The ultrasonogram showed dilated bowel loops. Pre-operative laboratory values were within normal limits.

A decision for an emergency laparotomy was taken and the abdomen was accessed through a midline incision excising the previous scar. The laparotomy was difficult because there were numerous adhesions that required careful adhesiolysis. After exploring the abdomen, a small 1.5 cm rent was found along the previously constructed retrocolic gastrojejunostomy loop primarily involving the jejunal side and encroaching minimally on the stomach [Figure 2].

After a thorough peritoneal lavage, the perforation was repaired and an omental patch was placed over the perforation [Figure 2]. A 28 F abdominal drain was placed in the pelvis. Postoperatively, the patient did well. We removed the Ryles tube suction when the bowel sounds resumed and started clear fluids. The drain was removed after the 5th day. Skin staples were removed on the 10th post-operative day. The patient has been doing well after the surgery and visits us regularly for follow-up.



Figure 1: Straight X-ray of the Abdomen of the Patient when he presented to the Emergency. There is Free Gas under the Right Dome of the Diaphragm that indicates a Perforation of a Hollow Viscus

DISCUSSION

Peptic ulcer disease is commonly complicated by perforation that is best treated by an omental patch and thorough peritoneal lavage. Medical treatment is the mainstay of treatment for such cases. Those refractory to medical management require surgery. Truncal vagotomy is accepted due to its simplicity but is often needs to be combined with a gastrojejunostomy or a pyloroplasty. Hence, highly selective vagotomy is a better advancement to its precursor. With the advent of novel drugs, these surgeries have become historical.

Gastrojejunostomy is commonly associated with various complications such as hemorrhage, perforation, retrograde intussusceptions, retroanastomotic hernia, adhesions, and gastrojejunal fistula. Our patient developed a rare complication, perforation [1,2]. Perforation in the gastrojejunostomy anastomosis has been rarely documented in literature. Patients with ulcers on the stoma present with hemorrhage and thereafter perforation, as described by Scarlet and Macnab [3].

Toland and Thompson [4] found 93 reports of acute perforation in gastrojejunal ulcers and stated that incidence of such perforation range from 5 days to 18 years after the primary anastomosis is constructed. The incident is <1%. Here, in our case, it was seen after 3 years. Chittora reported a case of acute perforation on the efferent loop of the jejunum, close to the anastomotic site [5].

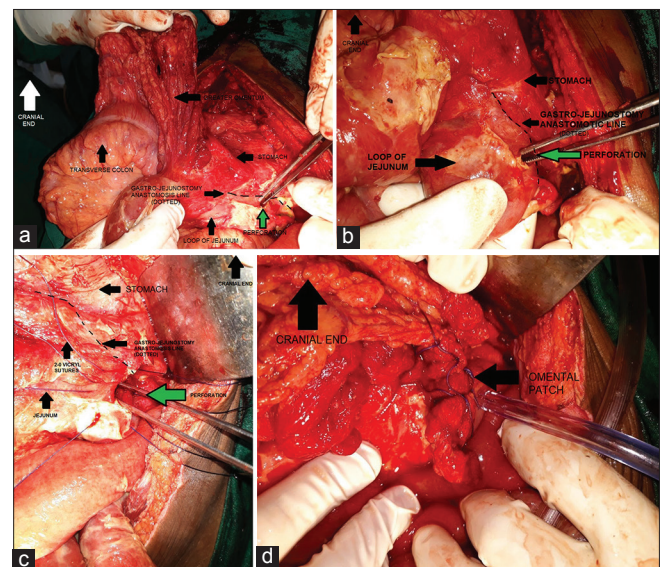


Figure 2: Colour images: (a) Intra-Operative: The Green Arrow shows the Perforation along the previously constructed Anastomotic line, predominantly on the Jejunal side but encroaching slightly onto the Stomach. Other Black Arrows point to the Related Structures nearby. (b) Intra-Operative: A closer view of the perforation. Note the tip of the fine forceps negotiated into the perforation. The Green Arrow shows the Perforation along the previously constructed Anastomotic line, predominantly on the Jejunal side but encroaching slightly onto the Stomach. (c) Intra-Operative: The Perforation is being Primarily repaired using 2-0 Vicryl sutures The Green Arrow shows the Perforation along the previously constructed Anastomotic line, predominantly on the Jejunal side but encroaching slightly onto the Stomach. (d) Intra-Operative: Completed Primary Repair re-enforced with a patch of healthy omentum over the perforation. (Black arrow)

Rangarajan reported a case of gastrojejunostomy anastomotic site perforation on jejunal side was reported by laparoscopy [6]. Kalaiselvan *et al.* reported the incidence of 1 in 120 patients who underwent laparoscopic Roux-en-Y gastric bypass for morbid obesity [7]. Goud *et al.* also reported such a case in 2015 [8].

Rarely, a late and severe complication due to an inadequate resection of the stomach or an incomplete vagotomy may result in a gastrojejunal fistula. It may present with chronic abdominal pain, fecal vomiting, and upper gastrointestinal bleeding. It is diagnosed using barium studies (95–100% accurate), computed tomography scan of the abdomen or endoscopy. Initially, a 2–3 staged operation (Lahey's procedure - comprising a colostomy, resection of the fistula, and colostomy closure) was performed; however, nowadays, due to the advent of better enteral support (total parenteral or total enteral nutrition) a single-staged procedure may be performed with decreased morbidity and mortality [9,10]. Takemura *et al.* have concluded that today, laparoscopic-assisted one-stage *en bloc* resection may be feasible for patients with GJC fistula [11].

CONCLUSION

Acute perforation in a gastrojejunostomy anastomosis line is an extremely rare clinical entity. Only a handful of cases have been reported so far. The mainstay of treatment is surgical; therefore, it is essential to arrive at a diagnosis promptly.

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