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Case Report

Posterior Gastric Perforation: An Uncommon Surgical Emergency

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ABSTRACT

Posterior perforation of gastric ulcer is a rare clinical condition. The more frequent type of perforation associated with the stomach is an anterior perforation located at the pyloro-duodenal area. Only 5-8% of these ulcers lie along the posterior wall of the body of stomach. Making a pre-operative diagnosis of posterior gastric perforation requires a; high degree of suspicion as most times the diagnosis is made intra-operatively. Delayed presentation is a characteristic of posterior perforation We present a case of a 70-years-old male with a spontaneous posterior gastric perforation with a benign histopathology

Keywords: Posterior gastric perforation, gastric ulcer, uncommon surgical emergency

INTRODUCTION

Posterior perforation of gastric ulcer is a rare clinical condition. The more common type of perforation associated with the stomach is an anterior perforation occurring at the pyloro-duodenal area is more common. [1] The clinical presentation of patients is variable, depending upon the location of perforation. Ulcers located in the fundus or body of stomach may erode into the lesser sac which is less effective in sealing off the perforation. Gastric contents therefore, accumulate in the lesser sac and pass into the peritoneal cavity, resulting in generalized peritonitis. Only 5-8% of these ulcers lie along the posterior wall of the body of stomach. [2] Helicobacter pylori, smoking and consumption of alcohol and other illicit drugs, use of NSAIDs and advanced age (>60 years) are important predisposing factors for the development of gastric ulcers. [3] A high degree of suspicion is required to make a pre-operative diagnosis of posterior gastric perforation; most times the diagnosis is made intra-operatively. Early intervention in these cases is vitally important to improve patient's chances of survival. We present a case of a 70-years-old male with a spontaneous posterior gastric perforation with a benign histopathology. This case prompts discussion due to the rarity of its incidence in the general population.

CASE REPORT

A 70 year old male was referred to Department of General Surgery Hospital in Central India with a diagnosis of gastritis. The patient had presented to Primary Health Centre six days after he developed worsening epigastric pain. He had generalized abdominal pain associated with

bouts of non-projectile, postprandial vomiting. He was not having any previous history of gastritis, peptic ulcer disease, diabetes or hypertension. His vital at the time admission were a heart rate of 101 bpm, blood pressure 90/50 mmHg, respiratory rate 22 bpm and temperature of 38.5˚C. The abdomen on examination was moderately distended, diffusely tender with guarding and rigidity all over the abdomen. No Bowel sounds. The digital rectal examination was normal. At presentation our differential diagnosis included perforated peptic ulcer disease, ruptured appendicitis, and intestinal perforation due to typhoid fever. His Hb was 12.7 g/dl and urinalysis was normal. Abdominal x-rays in the erect and supine positions were suggestive of gastrointestinal perforation with air under the right hemi-diaphragm (Figure 1). ultrasound scan suggestive of hollow viscus perforation with mild to moderate ascites. Amylase was 151s.u. and lipase 109u/l. The patient was resuscitated with intravenous fluids. Nasogastric and urethral catheters were passed. Broad spectrum antibiotics and analgesics were administered intravenously and an emergency exploratory laparotomy done. Findings at surgery included a 5mm × 5mm perforation on the posterior wall of the stomach (Figure 2) Near about 2litres of purulent fluid were drained from the peritoneum. On examination the anterior surface of the stomach and the rest of the gastrointestinal tract including the duodenum were intact. A biopsy of the edge of the gastric defect was taken and an omental patch repair was done. Thorough was with warm saline was given till returning fluid was clear. The abdomen was drained and closed. The patient recovered well and was discharged on proton pump inhibitors. Final histopathology result of the biopsy from gastric wall came as normal gastric histology.

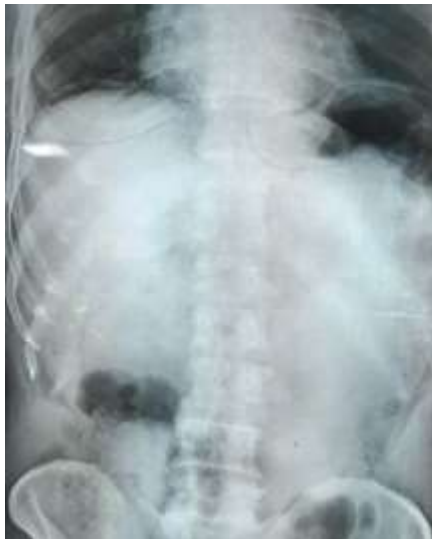

Figure 1 (Gas under Diaphragm)

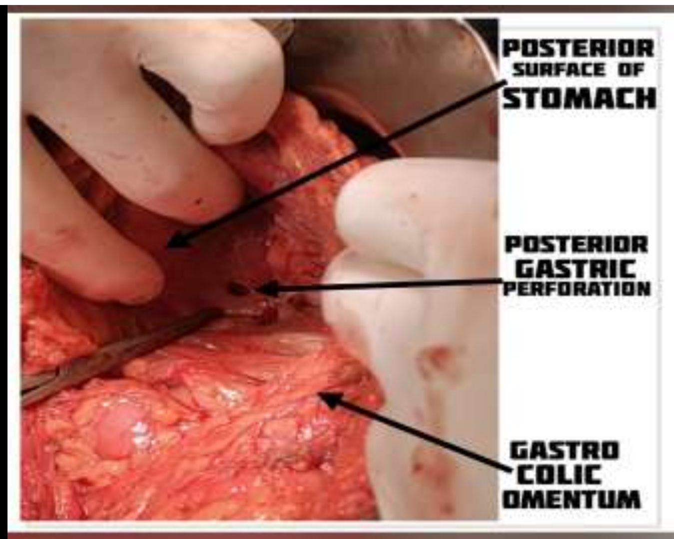

Figure 2

DISCUSSION

Spontaneous non traumatic posterior perforation of gastric ulcer is a rare entity. Approximately 5% - 8% of ulcers are located in the posterior wall of the body of the stomach and untreated, may also perforate. Posterior perforation, however, is rare. [4] In 2003 Wong, et al. reported only 9 cases over a 12 year period of posterior peptic ulcer perforation in Singapore. Hamilton Bailey reported one posterior gastric ulcer in his case series of 125 consecutive operations for perforated peptic ulcers. The main predisposing factors for peptic ulcer perforation are Helicobacter pylori infection, smoking, the use of NSAIDS, chronic stress, and advanced age (>60 years). [5,6] The final common pathway

to ulcer formation is acid-peptic injury of mucosal barrier. Thus, the saying "no acid, no ulcer" remains true. Delayed presentation is a characteristic of posterior perforation. Our patient 70 years old male, falls with in the range of 40-84 reported in the studies by Wong et al [7] Badawy et al [8] and Afolayan et al. [9] His presentation with insidious abdominal pain which became generalized, followed by vomiting over a 2 day period is less dramatic compared to the more common anterior gastric perforation. [10] His consumption of alcohol may have exacerbated an undiagnosed peptic ulcer disease resulting in perforation. Symptoms of bowel obstruction may sometimes be seen in cases of gastric perforation as reported in 25% of the cases reviewed by Wong. Reaching to a definite pre-operative diagnosis therefore can pose a great challenge, as experienced by other authors. Although referred to us as a case of chronic gastritis, our patient was not having any prior history of peptic ulcer disease. In the cases seen by Wong, Badawy and Afolayan, peptic ulcer disease was not considered as a pre-existing pathology. Sign and symptoms like abdominal distension, generalized abdominal tenderness and rigidity suggestive of peritonitis, which our patient presented with, is consistent with findings in study done by Badawy and Afolayan. However, Wong et al. could not find the sign of peritonitis in 25% of their cases making the preoperative diagnosis of posterior gastric perforation even more challenging. Abdominal x-ray showing pneumo-peritoneum is pathognemonic of gastro-intestinal perforation in 67% - 80.18% of the cases . [11] Pre-op diagnosis of peritonitis secondary to a perforated viscus can be made in most patients as corroborated by Badawy, Afolayan and 75% of Wong's cases. The treatment of choice for all patients with suspected diagnosis of gastric perforation is Emergency exploratory laparotomy. [12] Massive peritoneal contamination can complicate gastric perforation and requires diligent peritoneal lavage The clinical presentation of posterior perforations of gastric ulcers depends on the location of these ulcers within the stomach. Ulcers situated in the fundus or body of the stomach perforate into the lesser sac, with consequent lesser sac abscess and generalized peritonitis with contamination of the peritoneal cavity through the foramen of Winslow. Ulcers in the pylorus of the stomach perforate into the retroperitoneal space. These ulcers behave like posteriorly perforated duodenal ulcers, with retroperitoneal extravasation and retroperitoneal abscess formation. It is foremost important for the operating surgeon to be aware that the extravasated duodenal or gastric juices can track in the retroperitoneal space and form abscesses around any retroperitoneal organs, such as the pancreas, cecum, or kidneys. [13] The resultant abscesses often divert the attention of the surgeon from the true site of perforation. For this reason, these ulcers are commonly missed, with catastrophic consequences. [14,15] The most common misdiagnosis was appendicular diseases. Other misdiagnosis included perinephric abscess, retrocolic abscess, pancreatic abscess, colonic abscess, and even an incarcerated inguinal hernia. [14,15] A biopsy of the ulcer margins is imperative to establish the histological diagnosis. Perforation is repaired as a simple double layer closure reinforced with an omental patch. Our patient's post-operative recovery was uneventful and he was discharged home 7 days after surgery.

CONCLUSION

Posterior gastric ulcer perforation Is found to be very infrequent disease. A high index of dubiety is crucial. Operative findings depend on the location of these ulcers within the stomach. They can present with lesser sac abscess associated with generalized peritonitis or retroperitoneal abscess. Of note, an unexplained retroperitoneal abscess should always prompt operative intervention and exploration of the lesser sac for posterior perforation of a gastric ulcer, regardless of

the site of the abscess within the peritoneal cavity.

The patient's consent was taken to prepare the case report.

Conflict of Interest: None

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