A large posterior perforation of gastric ulcer: a rare surgical emergency

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A 65-year-old woman was admitted with a complaint of a constant dull aching pain in the epigastrium for 4 days, with subsequent worsening and generalization of the pain. Clinically the abdomen was tender all over with board-like rigidity. Chest radiography revealed pneumoperitoneum and a decision was made to explore the patient. During laparotomy we found mild peritoneal collection with no perforation in the anterior surface of the stomach, duodenum, or the entire gastrointestinal tract. After opening the gastrocolic omentum, we found a large perforation of the posterior wall of the stomach. After direct repair with an omental patch, the patient recovered and was discharged after 14 days, with only wound infection. Posterior perforation of a gastric ulcer is a very rare condition.

Keywords:
gastric ulcer, posterior perforation, surgical emergency

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Introduction

Every year peptic ulcer affects four million people globally [1]. Complications are encountered in 10–20% of these patients and 2–14% of the ulcers perforate [2,3]. Perforated peptic ulcer is relatively rare, and occurs usually in the anterior aspect of the duodenum [4].

Posterior perforation of gastric ulcer is a unique category of peptic ulcer perforation with a distinct clinical presentation [5]. Despite its rareness, awareness of this surgical emergency is very important, because it is usually associated with high morbidity and mortality especially if the diagnosis is missed.

Here we report a case of a large posterior perforation of a gastric ulcer and a review of the literature.

Case report

A 65-year-old woman was admitted with a complaint of a constant dull aching pain in the epigastrium for 4 days, which progressively worsened and generalized. She had a history of diabetes mellitus and ischemic heart disease.

The patient was febrile on admission and her vital signs were stable. The abdomen was tender all over with board-like rigidity. Chest radiography demonstrated pneumoperitoneum and the patient was diagnosed with generalized peritonitis due to perforated hollow viscus.

An emergency laparotomy was therefore performed. During the laparotomy, mild collection of pus was found, with no perforation in the anterior surface of the stomach or duodenum; the rest of the gastrointestinal tract was normal.

The gastrocolic omentum was opened and pus was drained out from the lesser sac. A 3-cm perforation of the posterior gastric wall of the body of the stomach was noted (Figs 1 and 2). We took a biopsy from the ulcer margins, and then closed the perforation with an omental patch. The biopsy was insignificant. The patient recovered and was discharged after 14 days, with wound infection.

Discussion

Posterior perforation of a gastric ulcer is a rare condition. There are fewer than 30 cases reported in the literature. Wong and colleagues (2003) reviewed nine patients with posterior perforations, who were treated from January 1990 to June 2002. Their findings were sealed perforation, localized retroperitoneal abscess, and generalized peritoneal contamination of the lesser sac and peritoneal cavity [5].

In a series of 125 consecutive perforated peptic ulcer patients operated upon by Hamilton Bailey, there was only one case of perforation on the posterior surface of the stomach [6].

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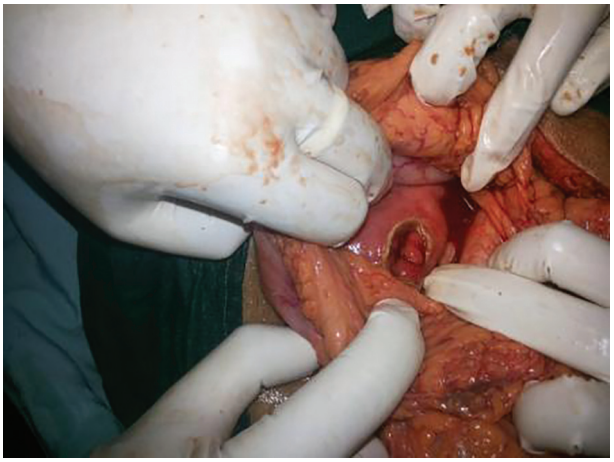
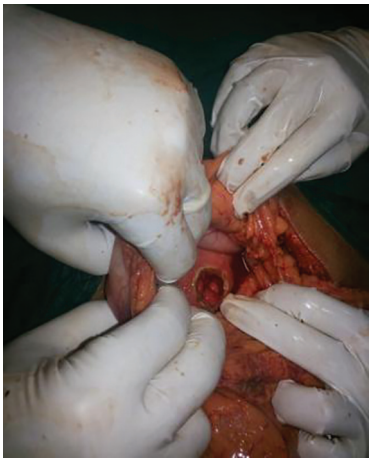
Figure 1



Posterior perforation of the gastric ulcer.

Figure 2



Posterior perforation of the gastric ulcer.

The great majority of benign gastric ulcers lie along the lesser curvature of the stomach. However, ~5–8% of ulcers lie in the posterior wall of the body of the stomach [7].

When posterior gastric ulcer perforates, it usually penetrates into the lesser sac behind the stomach (for gastric ulcers in the fundus or body of the stomach). The lesser sac is a potential space and is less effective in sealing off the perforation; thus, the gastric content and pus will accumulate in the lesser sac, forming abscess, and through the foramen of Winslow this fluid will pass into the peritoneal cavity, leading to generalized peritonitis [5].

That is why the clinical presentation of posterior gastric perforation is less dramatic than that of the more common anterior perforations and is characterized by late presentation. And because of the late presentation and missed diagnosis at laparotomy, posterior perforation is usually associated with high mortality [5,8].

In the case of posterior perforation of pyloric or duodenal ulcers, these ulcers penetrate into the retroperitoneal space, which results in either retroperitoneal abscess formation, or the perforation will be sealed off by the local inflammatory reaction and fibrosis of the surrounding adherent retroperitoneal tissue [5].

Computed tomography (CT) scanning has an important role, particularly multidetector CT, in the diagnosis of perforated peptic ulcer and in the determination of the site of perforation. There are particular findings in CT scanning that suggest gastric posterior wall perforation, such as retrogastric air and/or fluid collection [9].

Conclusion

Posterior perforation of a gastric ulcer is a rare condition and should be suspected when there is collection of pus or gastric content intraperitoneally with no perforation in the whole gastrointestinal tract on exploration of the abdomen. It usually presents late and is associated with a high mortality rate. Operative findings depend on the location of the perforation with either a lesser sac abscess associated with generalized peritonitis or retroperitoneal abscess. An unexplained retroperitoneal abscess should always draw attention to the possibility of the presence of a posteriorly perforated peptic ulcer. CT scanning plays an important role in the diagnosis of the site of the perforated peptic ulcer.

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Conflicts of interest

There are no conflicts of interest.

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