

Large posterior perforation of duodenal ulcer: A rare surgical emergency

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ABSTRACT

A 20-year-old man was admitted with a complaint of a constant dull aching pain in the epigastrium and back for five 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 a peritoneal collection with no perforation in the anterior surface of the stomach, duodenum, or the entire gastrointestinal tract. After opening the lesser sac, we found a large perforation of the posterior wall of the duodenum. After direct repair with stitching through duodenotomy and duodenoplasty also done, the patient recovered and was discharged after 14 days. Posterior perforation of a duodenum ulcer is a very rare condition.

Key words: duodenal ulcer, posterior perforation, a surgical emergency

INTRODUCTION

Every year peptic ulcer affects three million people globally¹. Complications are encountered in 10-20% of these patients, and 2-14% of the ulcers perforate^{2,3}. A perforated peptic ulcer is relatively rare and usually occurs in the anterior aspect of the duodenum⁴. Posterior perforation of peptic ulcer is a different category of peptic ulcer perforation with a distinct clinical presentation⁵. Despite its rareness, awareness of this surgical emergency is essential, 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 duodenal ulcer and a review of the literature.

CASE REPORT

A 20-year-old man was admitted with a complaint of a constant dull aching pain in the epigastrium for five days, which progressively worsened and generalized. No history of comorbidities, not smoker, no alcohol intake, insignificant family or medical history. The patient was febrile on admission, and his vital signs were unstable. The abdomen was tender all over with board-like rigidity. Chest radiography demonstrated pneumoperitoneum (ATTACHED XRAY), and the patient was diagnosed with generalized peritonitis due to perforated hollow viscus. An emergency laparotomy was therefore performed. During the laparotomy, collection of pus was found, with no perforation in the anterior surface of the stomach or duodenum; the rest of the gastrointestinal tract was regular.

The gastrocolic omentum was opened, and pus was drained out from the lesser sac. A 2-cm perforation of the posterior duodenal wall was noted. The lesser sac was approached through opening of the gastrohepatic omentum, pancreas was soaked with the gastric secretions and looked to be partially digested, the ulcer margins were attached to the pancreas, mobilization of the second part of the duodenum was done, the ulcer margins were biopsied, duodenotomy to approach and close the defect with stitching using 2-0 vicryl, Heineke-Mikulicz pyloroplasty at the end.

Recovery was not smooth, the patient was kept in an intensive care unit for ten days because of sepsis, respiratory distress syndrome, pancreatitis, at the end patient recovers entirely and was sent home after 20 days of hospitalization.

DISCUSSION

Posterior perforation of a duodenal ulcer is a rare condition. There are fewer than 30 cases reported in the literature. Wong and colleagues (2016) reviewed nine patients with posterior perforations, who were treated from January 1990 to June 2016. Their findings were sealed perforation, localized retroperitoneal abscess, and generalized peritoneal contamination of the lesser sac and peritoneal cavity^{5,6}. 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 duodenum⁶. The great majority of benign duodenal ulcers

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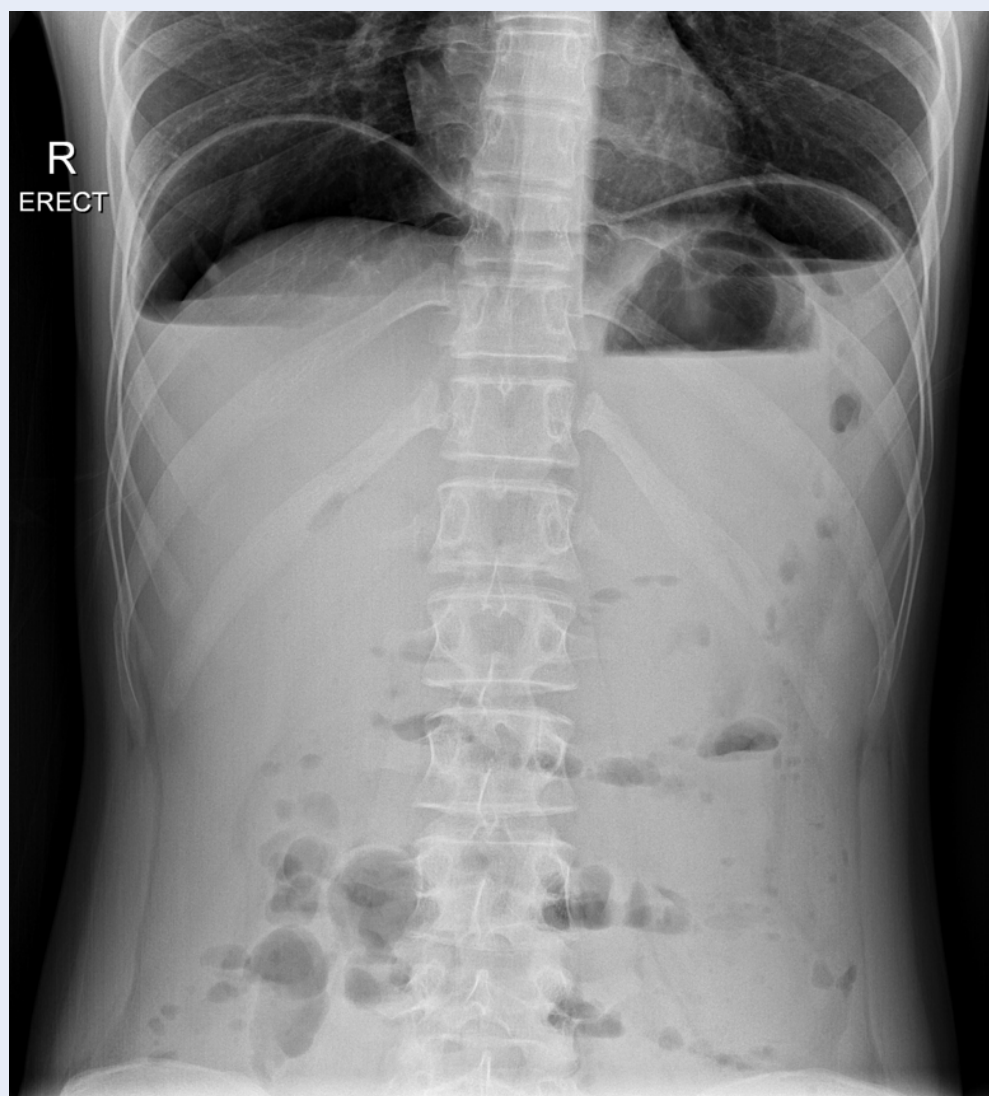


Figure 1: Chest radiography demonstrated pneumoperitoneum (ATTACHED XRAY), and the patient was diagnosed with generalized peritonitis due to perforated hollow viscus.

lie along the anterior aspect of the duodenum. However, 1-2 % of ulcers lie in the posterior wall of the duodenum⁷. When posterior duodenal ulcer perforates, it usually penetrates the lesser sac behind 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 an abscess, and through the foramen of Winslow this fluid will pass into the peritoneal cavity, leading to generalized peritonitis⁵. That is why the clinical presentation of posterior duodenal perforation is less dramatic than that of the more common anterior perforations and is characterized by the late presentation. And because of the late presentation

and missed diagnosis at laparotomy, posterior perforation is usually associated with high mortality^{1,2,5,8}. 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 tissue⁵. Computed tomography (CT) scanning has an important role, particularly multidetector CT, in the diagnosis of perforated peptic ulcer and the determination of the site of perforation. There are particular findings in CT scanning that suggest duodenal posterior wall perforation, such as retrogastric air and/or fluid collection^{9,10}.

CONCLUSION

Posterior perforation of duodenal ulcers has high mortality. Delayed diagnosis due to insidious and presentation of symptoms and missed diagnosis at laparotomy are major contributory factors. Posterior perforations if delayed, are associated with peritonitis sepsis and multi-organ failure. In cases of purulent peritonitis performing the definitive surgical procedure is a contraindication, and only damage controlled surgery should be performed. In the badly scarred and contracted duodenum the matter of both secure closure and adequate channel for gastric emptying must be considered. The operating surgeon responsible for the care of the individual case is free to select a form of therapy that varies from the standard protocol if he/she considers such a selection to be in the best interest of the patient.

COMPETING INTERESTS

The author(s) declare that they have no competing interests.

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