Int Surg 2018;**103:**36–39
DOI: 10.9738/INTSURG-D-15-00280.1

Double Perforated Kissing Ulcers of Duodenum: A Brief Report

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***Helicobactor pylori* infection has been associated with peptic ulcer disease and is currently treated with proton pump inhibitors (PPIs), which have reduced the complications of the disease. Perforation of either a gastric or duodenal ulcer is rarely treated with surgery. We report the case of double-perforated synchronous duodenal ulcers, which is an extremely infrequent condition. To our knowledge, no English case reports have yet been published. Therefore, awareness of the physician in the field of diagnosis and treatment of this peptic ulcer is required. We report the case of a 46-year-old male patient who presented with acute abdominal pain at the emergency surgical department of our hospital. According to patient history, smoking, alcohol consumption, and frequent postprandial abdominal pain were noted. A physical examination revealed a rigid abdomen and tachycardia, and the temperature was 37.8°C. Laboratory testing showed increased levels of leukocytes, and free subdiaphragmatic air was found in the chest X-ray. Due to rapid deterioration of his clinical condition, the patient underwent urgent surgery. An explorative laparotomy showed 2 perforated kissing ulcers at the first segment of the duodenum, in the anterior and posterior walls. A peripheral gastrectomy was performed. Postoperative follow-up did not result in any complications. In regard to this case we present, simultaneous perforation of two synchronous duodenal ulcers is an uncommon but possible incident of which the clinician should be aware. To our knowledge, this is the first case published in the literature.**

Key words: Peptic ulcer – Perforation – Duodenum – Kissing ulcers

The epidemiology of peptic ulcer disease (PUD) has changed in recent years. In fact, the incidence and prevalence of PUD have decreased, mainly due to the wide use of proton pump inhibitors (PPIs) for the treatment of *Helicobacter pylori* infection.[1,2] Apart from *H. pylori* infection,

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several other causes of PUD that stimulate acid secretion and affect the mucosa of the upper gastrointestinal tract have been reported in the literature. More precisely, the use of acetylsalicylic acid (ASA) and nonsteroidal anti-inflammatory drugs (NSAIDS), smoking, and meals highly enriched with salt are implicating factors of the disease as well.[2–5]

About 4 million new diagnoses of PUD are recorded each year worldwide.[4] Among these patients, 10% to 20% results in complications, 2% to 14% of whom present with ulcer perforation.[2,6] Perforation is the second most common complication of PUD, whereas upper gastrointestinal hemorrhage is the most frequent one.[2] According to the literature, the annual incidence of perforation ranges from 3.77 to 14 cases per 100,000 individuals.[7,8] However, both complications seem to present with a decreased incidence nowadays.[9]

Perforation of an either gastric or duodenal ulcer may potentially be a fatal complication. The overall mortality of this incidence is estimated to be 3% to 27% among several health systems worldwide.[6,10] Without any treatment, neither conservative nor surgical, the mortality increases to 50% in 24 hours.[11] Conservative management includes drugs, endoscopy, and/or radiology. Nonsurgical treatment is responsible for significant decrease in the field of emergency surgical approach, which, as a first option in the management of peptic ulcer complications, is performed in less than 2% among all peptic ulcer perforation incidences.

Considering the fact that the incidence of ulcer perforation has decreased and the complications of the disease, kissing peptic ulcers are rarely reported in the literature. To our knowledge, no English case reports of perforated kissing duodenal ulcers have yet been published.

Materials and Methods

This study is a retrospective review of a case of a patient who referred to the emergency surgical department of our hospital with acute abdomen and was diagnosed with perforated kissing duodenal ulcers.

Case Presentation

We report the case of a 46-year-old male patient who presented with acute abdominal pain at the emergency surgical department of our hospital. According to the patient history, he has smoked since adolescence and consumed alcohol on a daily basis. Abdominal pain was referred as a frequent symptom, slightly reduced postprandially. A physical examination revealed a rigid abdomen and tachycardia, and the temperature was 37.8°C. Laboratory testing showed increased levels of leukocytes. According to a chest X-ray, free subdiaphragmatic air was found. As a result of rapid deterioration of his clinical condition, the patient underwent an urgent surgical operation. Explorative laparotomy revealed free liquid in the abdomen. Furthermore, two perforated kissing ulcers were detected at the first segment of the duodenum. The ulcers were located both anteriorly and posteriorly across the duodenal wall (Fig. 1). Peripheral gastrectomy, including the region containing the perforated kissing ulcers, was the surgical procedure selected for the patient.

The patient was discharged on the fifth postoperative day without complications.

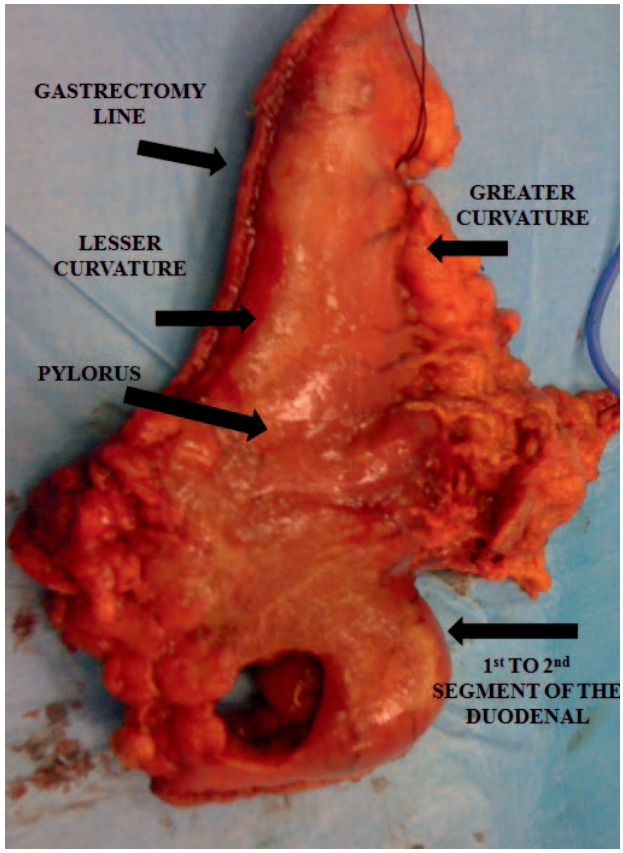

Fig. 1 Perforated kissing ulcers at the first division of the duodenum.

Discussion

The combination of anterior perforation and concomitant posterior bleeding, as a peptic ulcer complication, is a very rare condition, recently reported by Vahedian *et al*.[12] However, the simultaneous perforation of two duodenal kissing ulcers has never been reported in the literature. Thus, this case is an extremely unusual clinical situation, which may result in fatal consequences unless the surgeon is highly aware of it.

Regarding the treatment of perforated duodenal ulcer, several options have been proposed, either conservative or surgical. Most cases are treated conservatively, as *H. pylori* infection is the most frequent cause of the disease. In contrast, surgical management of peptic ulcers depends on the size of the ulcer perforated, the anatomical position, the available equipment, and the surgeon's experience. For large (1 to 3 cm) perforated duodenal ulcers, Hardeep Gill *et al*[13] suggest the resection of the perforation in the form of a partial gastrectomy with either a Billroth I or II anastomosis. Alternatively, gastric disconnection in which an antrectomy, gastrostomy, lateral duodenostomy, and feeding jejunostomy are performed may be selected. When the latter procedure is applied, restoration of gastrointestinal continuity is completed in approximately 4 weeks. Closure techniques are the most common among all surgical methods. They consist of primary closure, primary closure with omental pedicle flap, long tails, omental pedicle flap (Cellan-Jones repair), free omental plug (Graham patch), and tacking sutures. However, large perforations may not be suitable for simple patch closure. Omentopexy is safe to perform in perforations up to 3 cm because it is simple and avoids a major resection in an already compromised patient.

Recent trends disclose similar outcomes between minimally invasive laparoscopic surgery and open surgery in selected patients, although there have been other publications favoring laparoscopy among selected patients.[13–16] Therefore, the modern state of evidence on the optimal surgical approach is rather conflicting.

In the case reported, given the size of the perforations (4 and 3 cm in the anterior and posterior, respectively), resection of the first segment of the duodenum and a peripheral gastrectomy were performed. The gastrointestinal continuity was restored with a gastrojejunal anastomosis. Simple closure was not appropriate, as in most cases, because of the position of the two ulcers.

Conclusion

Because of the current medical treatment of *H. pylori* infection and PUD, complications, such as perforation, bleeding, and gastric outlet obstruction, are rarely identified today. Thus, simultaneous perforation of two synchronous duodenal ulcers, like the case we have just reported, is an even less common incident. However, despite the extremely poor possibility of perforation of kissing ulcers, the clinician should be aware of this unlikely event, especially in cases of inadequate compliance to medical treatment.

Acknowledgments

All the authors declare no conflict of interest and no financial support.

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