



## Silent but Treacherous: A Case Report of Silent Perforated Peptic Ulcer in an Elderly Patient

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### ABSTRACT

Peptic ulcer disease (PUD) is one of the most common gastroduodenal disorders. Its prevalence has been decreasing over recent years. It has multiple complications, one of which is the life-threatening perforation. The latter usually present in a dramatic clinical picture and often necessitate an emergent surgical approach. A silent gastric perforation, however, is one of the rare conditions in the clinical practice which makes the diagnosis more challenging. We describe a case of silent perforated peptic ulcer complicated with septic shock and treated by surgery. This report highlights the wide spectrum of the clinical presentations of the peptic ulcer disease.

**Keywords:** Peptic ulcer disease (PUD), silent gastric perforation, life-threatening perforation ,septic shock.

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## Introduction

Peptic ulcer disease (PUD) is a common gastro-duodenal disorder that has an incidence of 0.1-0.3 % per year in the general population.<sup>1-3</sup> This incidence has been decreasing over recent years due to the ability to eradicate *Helicobacter pylori* and to the widespread use of the proton pump inhibitors (PPI).<sup>4</sup> Despite this and the recent advances in ulcer treatment, complications remain a healthcare burden because of the widespread use of acetylsalicylic acid (ASA) and other non-steroidal anti-inflammatory drugs (NSAIDs) that are associated with adverse gastrointestinal events.<sup>5,6</sup>

It is, therefore, possible there may have been no corresponding decrease in peptic ulcer complications.<sup>7</sup> These include bleeding, perforation, and obstruction. Gastrointestinal bleeding (GIB) is the most common complication of PUD with an annual incidence between 19 and 57 cases per 100,000 individuals.<sup>8</sup> Perforation of peptic ulcer (PPU) comes next. Its rate is expected to be 4 to 14 cases per 100,000 individuals, but it represents the most common indication for emergency surgery in PUD.<sup>8</sup> Perforation of peptic ulcer (PPU) usually presents as an acute abdomen with signs of peritonitis and has a high risk to develop septic shock and death. It is estimated that PPU causes 37% of all ulcer-related deaths.<sup>9</sup> Therefore, it is necessary to have an early diagnosis and resuscitation. However, clinical signs sometimes can be obscured, as in elderly people or immunocompromised patients, thus delaying the diagnosis, risk assessment, and selection of the proper therapeutic regimen.<sup>10</sup> Therefore, morbidity and mortality increase. This report shows a case report of asymptomatic PPU in an elderly patient with rapid deterioration.

## Case Presentation

An 85 years old female patient presented to the emergency department for two days history of generalized fatigue. She denied any abdominal pain or signs of bleeding. She had a positive

medical history for hypertension, diabetes, and chronic obstructive pulmonary disease with intermittent use of Bi-level positive airway pressure (BIPAP). She also underwent surgery for hip fracture one month ago and became bedridden since then. She was a nonsmoker and a non-alcohol drinker. On admission, she had pallor, tachypnea, tachycardia (100bpm), and relative hypotension (90/50 mmHg). No abdominal guarding, tenderness or rigidity was noticed. The digital rectal exam was negative for active GIB. Primary investigations demonstrated severe anemia (hemoglobin, 3.3 g/dl; hematocrit, 11.30 %; MCV, 70 fl), leukocytosis with left shift (WBC count, 20700 cu.mm; neutrophils, 89.60 %; lymphocytes, 5.50 %), and altered renal function test (serum urea, 69 mg/dl; serum creatinine, 1.41 mg/dl). Urinalysis was positive (numerous WBC,) and inflammation markers were elevated (CRP, 134 mg/l; ESR, 130 mm/hr). The patient was stabilized hemodynamically (with adequate administration of packed RBCs and fluids) and started on a broad-spectrum antibiotic (fourth-generation cephalosporin). After resuscitation, the patient underwent a computed tomography scan of her abdomen and pelvis. Surprisingly, the scan showed gross free gaseous bulla in the hepatogastric region, likely arising from the stomach. (figure 1). It also showed mild fluid in the abdomen with peritoneal haziness, particularly in the upper abdomen. Soon, an urgent laparotomy was done. On exploration, a distal gastric ulcer was noticed with 30 mm perforation. The perforated ulcer and the first portion of the duodenum were resected, and gastrojejunostomy was created.

The patient, subsequently, became hemodynamically stable, and clinically better for around 4 days. However, she developed later severe hospital-acquired pneumonia that necessitated intubation. She was then put on vasopressors for refractory hypotension. We, eventually, lost the patient from septic shock after 2 months of ICU stay and ventilator dependence. Retrospectively, we found out that the patient abused ibuprofen for 1 week before the presentation.

## Discussion

In 1843, Edward Crisp stated that “the symptoms are so typical, I hardly believe that it is possible that anyone can fail in making a diagnosis”.<sup>11</sup> Patients with PPU might present with severe,

Sudden onset epigastric pain. This pain can become generalized due to chemical peritonitis produced by the leak of the gas and the gastric juice into the peritoneal cavity.



**Figure 1: Free gaseous bulla in the hepato-gastric region**

Clinically, the patient will experience 3 phases.<sup>12</sup> Within the first 2 hours of the onset of the epigastric pain, tachycardia and cool extremities are present. 2 to 12 hours later, the pain spreads diffusely and is worse in movement. After 12h, abdominal distention, fever, and hypotension will occur due to the systemic inflammatory response from chemical peritonitis and total body water deficit.

Also, Chayla et al. found that 97% of PPU patients will present with severe epigastric pain<sup>13</sup> and 88.1% with abdominal tenderness. Other symptoms will include classical signs of peritonitis (66.7%), abdominal distention (76%), vomiting (36.9%), nausea (35.7%), severe dyspepsia (33.3%), constipation (29.8%) and fever (21.4%).

This clinical picture, however, can be less clear in some cases. Few examples are elderly patients, children, immunocompromised patients, those with a reduced level of

consciousness, and those on steroids. In such situations, the physical examination, as well, might be non-specific.<sup>10</sup> That is why additional laboratory tests and imaging methods are required to support the diagnosis.

In literature, although a silent GI perforation can occur as reported in many cases, rarely is it due to a perforated ulcer. PPU has usually a dramatic presentation and a silent presentation is extremely rare which makes our case of significant interest. In 2007, Sircar et al. reported a silent perforated duodenal ulcer in 82 years-old female<sup>14</sup> Another case was reported by M. Mimica in 2001 about a 70 years old male with perforated duodenal ulcer presenting as melena.<sup>15</sup> It is noticed that the common in the 3 cases (including the case above) is the old age which, as previously stated, can be a cause for masking the dramatic symptoms of PPU.

Moreover, 2 cases of asymptomatic pneumoperitoneum in younger patients were

reported in 2019 by Alizadeh et al.<sup>4</sup> It seemed that these patients had opiates addiction which explains their silent PPU. Their perforations were treated conservatively because the patients had mild symptoms and hemodynamic stability. In contrast, the case reported above shows a patient's presentation with signs of septic shock. In this case, interventions should aim at the treatment of sepsis and surgery as soon as possible, for any delay to surgery has been a consistent factor related to mortality. These measures can reduce mortality, which may reach 40–50% in cases of sepsis, and 50–60% in cases of septic shock<sup>10</sup>. This stresses on the importance of the individualization in the management of asymptomatic perforated ulcers, which are treacherous although silent.

**Conclusion**, early diagnosis of PPU can be challenging in front of a category of patients. Awareness toward the possibility of PPU in a non-tender soft abdomen should be increased especially in the presence of risk factors as NSAIDs use. A CT scan should be highly recommended for any suggestive symptoms. The how, when and who questions are still to be answered.

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