Peptic ulcer disease: an unusual presentation of a common problem

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**Question:** A 40-year-old man presented to the emergency department with a 3-day history of hematemesis and melena on a background of 6 months of intermittent, epigastric pain. He was a current smoker with a 7 pack-year history and denied aspirin, non-steroidal anti-inflammatory drugs (NSAIDs) or alcohol use. His medical history was otherwise unremarkable.

On examination, the patient was tachycardic at 115 beats per minute and hypotensive at 95/60 mmHg with no signs of peritonism. Laboratory results demonstrated a haemoglobin level of 5.1g/dL, mean corpuscular volume of 87 fL, leukocyte count of 12.4 x10³/µL and a C-reactive protein of 2.7 mg/dL. Platelet count and liver function tests were within normal limits. An esophagogastroduodenoscopy and computerized tomography of the abdomen demonstrated the following findings (Figures A, B, C and D).

What is the most likely diagnosis?
**Answer:** Contained gastric ulcer perforation with liver penetration

Esophagastroduodenoscopy demonstrated a large, deep, bleeding ulcer at the incisura of the stomach (Figure A), within which was the liver protruding through the ulcer base (Figure B). Biopsy of the ulcer edge was positive for *Helicobacter pylori* and there were no findings suggestive of malignancy. A computerized tomography scan of the abdomen demonstrated a 19mm wide by 17mm deep ulcer, which had penetrated the liver through a contained perforation (Figure C, arrow; Figure D, arrow).

Affecting millions of people worldwide, the incidence of peptic ulcer disease (PUD) varies between patient demographics and country of origin, with its frequency being heavily influenced by the various etiologies of PUD, including *H Pylori* and NSAID use. Potential major complications of PUD include hemorrhage, penetration, gastric outlet obstruction and perforation. The incidence rate for perforated peptic ulcer is 6.5 per 100,000 per year over a 10-year period with an adjusted mortality rate at 1.1 per 100,000 per year over a 10-year period. Gastric perforation into the liver is an exceedingly rare complication of peptic ulcer disease and occurs even more infrequently than duodenal perforations. There are only a small number of published case reports in medical literature of gastric ulcer perforations into the liver, with this patient being one of the youngest patients reported to date.

While gastric ulcer perforations into the liver are usually treated with surgical intervention, a few patients, including our own, have been managed conservatively with proton pump inhibitors or H₂ antagonists. Following treatment with blood transfusions, proton pump
inhibition and *Helicobacter pylori* (*H Pylori*) eradication, the patient was asymptomatic and denied any further abdominal pain, hematemesis or melena on follow-up 4 weeks later.

**References**


