




Life-threatening gastric ulcer bleeding caused by splenic vein erosion following sleeve gastrectomy

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ABSTRACT

Upper gastrointestinal bleeding is a common medical condition associated with high morbidity and mortality, and may occur as a late complication after gastrointestinal surgery. In this report, we present a sleeve gastrectomy patient with hematemesis and hemodynamic instability due to ulcer bleeding caused by splenic vein erosion. A 55-year-old female patient applied to the emergency service with hemorrhagic shock due to the upper gastrointestinal bleeding. The only notable details in the patient's medical history were hypertension and a sleeve gastrectomy surgery in 2010. Blood pressure was 70/40 mmHg, and heart rate was 145 beats per minute. After a rapid resuscitation, she underwent emergency surgery since hematemesis continued and hemodynamic status was unstable. No hemorrhagic fluid was found in the intraperitoneal space during the exploratory laparotomy. However, when gastrotomy was performed a giant bleeding ulcer was found on the staple line of the previous sleeve gastrectomy, extending into the splenic vein. The patient underwent total gastrectomy, Roux-en-Y esophagojejunostomy, and splenectomy. The patient was discharged on the 10th day after surgery without any complications.

Keywords: Gastric ulcer, sleeve gastrectomy, upper gastrointestinal bleeding

Introduction

Upper gastrointestinal bleeding (UGIB) is a common medical condition with high morbidity and mortality, and requires immediate medical care.^[1] Peptic ulcer disease cause approximately 20 to 25 percent of cases and still prominent. Gastric ulcer is more common than duodenal ulcer in patients with bleeding peptic ulcer.^[2] The major risk factors for bleeding peptic ulcers are *Helicobacter pylori* infection, nonsteroidal anti-inflammatory drugs, physiologic stress, excess gastric acid.^[3] But it can rarely occur as a late complication after gastrointestinal surgery. A few cases of gastric ulcer or marginal ulcer eroding the splenic artery causing UGIB have been reported.^[4,5] How-

ever, none of them presented with bleeding due to erosion of the splenic vein as in our case.

We aimed to report late occurrence of a rare but life-threatening complication due to gastric ulcer bleeding secondary to erosion of underlying splenic vein following sleeve gastrectomy (SG).

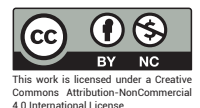
Case Report

A 55-year-old, body mass index 28.4 kg/m² female patient applied to the emergency with hematemesis that causing hemorrhagic shock. She had a history of hypertension as comorbidity and laparoscopic SG due to obesity in 2010. Routine follow-up after bariatric surgery



Received: 01.01.2026 Revision: 15.03.2026 Accepted: 17.03.2026

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was not performed, and data regarding this surgery and histopathological findings related to the surgical specimen could not be obtained. She had no risk factor for peptic ulcer disease including NSAID use, smoking or alcohol consumptions. In addition, she had never been tested for *H. pylori* during follow-up. She had a history of intermittent epigastric pain in the postoperative period, and also medical treatment was given at times due to iron and vitamin B12 deficiency, but did not use proton pump inhibitors regularly. However, the patient has never had a history of hematemesis or melena so far. The patient was monitored, blood pressure was 70/40 mmHg, heart rate was 145 beats per minute in electrocardiogram. Glasgow coma score was 10 (eye response: 3 Points, verbal response: 3 Points, motor response: 4 Points). Two peripheral and one central venous catheter were opened. Three units of O rh(-) erythrocyte suspension without cross-matching and 2500 mL of crystalloid fluids was given within 30 minutes. Additionally, norepinephrine (5 mcg/min) was started. Due to the patient's admission occurring on the weekend and the unavailability of an interventional radiologist on duty at that time, angiography and embolization could not be planned. Since hematemesis continued and clinical status remained unstable despite rapid fluid resuscitation and erythrocyte suspension replacement, patient underwent emergency laparotomy. There was no hemorrhagic fluid in the abdomen. When gastrotomy was performed, it was first confirmed that there was no gastroduodenal artery bleeding. Then, major venous bleeding was detected originating from an ulcerated area of approximately 2 cm in diameter on the corpus of stomach. After patient had been hemodynamically stabilized with satinsky vascular clamps, dissection of the remnant stomach tissue was performed for further detailed exploration. It was observed that the ulcerated area on the previous stapler line eroded the splenic vein, but splenic artery was preserved (Fig. 1). Ulcerated area was not suitable for primary suturing due to its size and fragility. In this patient who had undergone sleeve gastrectomy, total gastrectomy was required because suturing the ulcerated area and primary repair of the splenic vein were not suitable. Consequently, Total gastrectomy with Roux-en-Y esophagojejunostomy was performed along with splenectomy. On the postoperative day 10, the patient was discharged without complications.

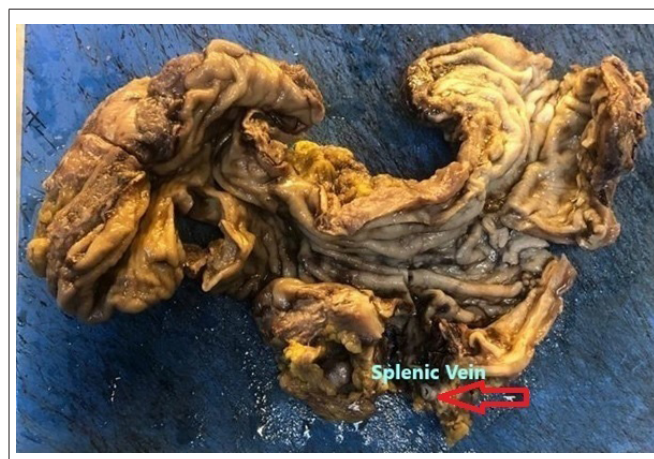


Figure 1. Eroded splenic vein at the ulcerated area on the stapler line.

Discussion

Peptic ulcers are defects in the gastric or duodenal mucosa that penetrate the muscularis mucosal layer.^[6] UGIB is mostly caused by peptic ulcer, and ulcers originating from the anastomosis line after surgery are also among the factors.^[7] There are manuscripts reporting gastric ulcer penetration into the splenic artery as a rare complication.^[4,5] However, literature review did not show any case that underwent emergency surgery due to gastric ulcer bleeding complicated by splenic vein erosion following SG. This is the first case described in the literature including splenic vein erosion by ulcer following gastrointestinal surgery, since so far only splenic artery erosion have been described.

Sleeve gastrectomy has become the most popular bariatric procedure worldwide. Although SG is a safe surgical technique one of the complications after SG is gastric ulcer. It can be seen in the early postoperative period or years later. In a retrospective study that includes 41,380 patients with a history of bariatric surgery (RYGB, 91.6% and SG, 8.4%), 1.8% (n=728) of the patients were diagnosed with a peptic ulcer during 4 years of median follow-up. The prevalence of peptic ulcer was reported as 1.9% (n=722) and 0.2% (n=6) after RYGB and SG, respectively.^[8] According to The International Federation for the Surgery of Obesity and Metabolic Disorders a pre-operative screening and post-operative surveillance endoscopy recommended after one, three and five years after SG and then once every 10 years.^[9] However, no follow-up gastroscopy was performed to our patient.

The American College of Gastroenterology Clinical Guideline suggests follow-up or endoscopic treatments

for UGIB with hemodynamically stable patients.^[10] Our patient was unstable so laparotomy was done and total gastrectomy with Roux-en-Y esophagojejunostomy and splenectomy were performed considering patients' clinical status due to the previous history of SG, location and diameter of the ulcer, need for splenectomy under emergent circumstances.

Although, case reports that presents the upper gastrointestinal bleeding as a result of gastric ulcer eroding the splenic artery or marginal ulcer eroding the splenic artery in patients with Roux-en-Y gastric bypass are available in the literature, our patient had splenic vein erosion of gastric ulcer that developed from the stapler line after sleeve gastrectomy.^[4,5] Also, it should be kept in mind that the gastric ulcer that originated from the stapler line may be related to technical problems that developed in the previous sleeve gastrectomy surgery but show late symptoms.

Conclusion

Upper gastrointestinal bleeding caused by a gastric ulcer eroding to splenic vein is an extremely rare but life-threatening late complication after sleeve gastrectomy. This complication needs to be kept in mind and may be prevented by a thorough post-operative follow-up including endoscopy.

Disclosures

Informed Consent: Written informed consent was obtained from the patient for the publication of the case report.

Peer-review: Externally peer-reviewed.

Conflict of Interest: None declared.

Financial Disclosure: No financial support was received from any institution or person for this study.

Authorship Contributions: Concept – S.Ö.; Design – S.Ö.; Supervision – U.D.; Fundings – S.Ö., B.D.; Materials – S.Ö., Data collection and/or processing – S.Ö., Analysis and/or interpretation – S.Ö., Literature search – S.Ö., B.D., U.D.; Writing – S.Ö., B.D.; Critical review – S.Ö., B.D., U.D.

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