

Gastric ulcerations in COVID-19: an ominous sign?

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DESCRIPTION

Gastrointestinal bleeding (GIB) is often reported in patients with COVID-19, with a reported incidence of 3% in a recent prospective cohort study of hospitalised patients with COVID-19. This study also reported that GIB is associated with an increase in mortality in patients with COVID-19.¹ The most common causes of bleeding observed on esophago-gastroduodenoscopy (EGD) were gastroduodenal ulceration¹ and esophagitis.² We present three cases of patients with COVID-19 who developed massive GIB from gastric ulcers during the course of their hospitalisation despite being on proton-pump inhibitor prophylaxis. All these three patients ultimately had a fatal outcome, thereby reiterating the poor prognosis associated with gastric ulceration. We briefly describe the clinical course and the associated EGD findings in these patients.

Case report 1: A 34-year-old man with diabetes, hypothyroidism and obesity presented with respiratory failure due to COVID-19 pneumonia, diagnosed by reverse transcription (RT)-PCR of nasopharyngeal swab. On the 29th day after being diagnosed with COVID-19, he developed haematemesis, for which he required a total of 17 units of blood transfusion over the course of his hospital stay. EGD revealed severe ulcerative esophagitis as well as non-bleeding gastric ulcers in the greater curvature of the gastric body (figure 1A), the fundus and the duodenum. Haemostasis was achieved with embolisation of gastroduodenal and right gastric arteries as well as Hemospray application over the ulcerated area. He was discharged from the hospital in a stable condition; however, he died 6 weeks later from myocardial infarction.

Case report 2: An 85-year-old man with hypertension, chronic kidney disease, prostate cancer and sick sinus syndrome presented with acute respiratory failure due to COVID-19 pneumonia requiring mechanical ventilation. About 10 days after the diagnosis of COVID-19 was made by RT-PCR of nasopharyngeal swab, he developed upper GIB with frank blood in his tube feed residuals. EGD showed a non-bleeding gastric ulcer that appeared friable and necrotic with the possibility of perforation (figure 1B), and therefore was not amenable to clip or Gold probe application. He rapidly deteriorated with progressively worsening shock, acute kidney injury (AKI) and cardiac arrhythmias. He died the following day after his family initiated comfort care measures.

Case report 3: A 58-year-old man with diabetes and hypertension presented with dyspnoea following COVID-19 infection. He ultimately required mechanical ventilation due to hypoxic respiratory failure. On the 7th day after the diagnosis of COVID-19 was confirmed by RT-PCR of

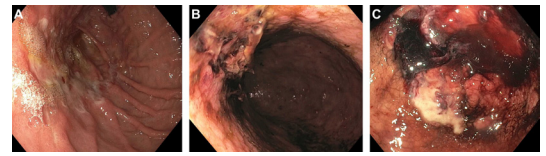


Figure 1 Upper gastrointestinal endoscopy images of gastric ulcers. (A) Non-bleeding gastric ulcer with flat pigmented spot extending across the greater curvature of the gastric body up to the fundus. (B) Non-obstructing non-bleeding gastric ulcer with friable and necrotic appearing mucosa and an adherent clot. (C) Non-bleeding gastric ulcers with an adherent clot.

his nasopharyngeal swab, he developed melena and was started on multiple pressors. EGD showed three non-bleeding cratered gastric ulcers at the incisura and gastric antrum, the largest one measuring 20 mm (figure 1C). The ulcers were concerning for perforation and difficult to approximate due to their large size and adjoining fibrotic tissues, precluding Gold probe application or clipping. Hemospray application was used to achieve haemostasis. He deteriorated over the next 4 days, developing AKI and shock. He died shortly after his family initiated comfort care measures.

The mechanism of GIB in COVID-19 is poorly understood. Besides lungs and respiratory tract epithelium, ACE-2, the SARS-CoV-2 receptors, are also expressed in the enterocytes. Direct virus invasion, mechanical ventilation associated stress and COVID-induced coagulopathy³ can all provoke ulceration. Interestingly, steroid or anticoagulant use has not been attributed to increased GIB in patients with COVID-19.¹ COVID-19-induced gastric ulcerations in all the three cases appear to be large, deep and unamenable to traditional endoscopic therapy. This is largely due to the very friable necrotic appearing tissue surrounding the ulcerations. The fatal outcome in all three of our patients warrants that clinicians must be vigilant of gastric ulcers in patients with COVID-19. To confirm the poor prognosis associated with the finding of gastric ulcerations on EGD, larger studies investigating the



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Learning points

- ▶ COVID-19-induced ulcerations are usually unamenable to traditional endoscopic therapy. This is largely due to the very friable necrotic appearing tissue surrounding the ulcerations.
- ▶ Clinicians must be vigilant of gastroduodenal ulcer bleeding in patients with COVID-19 as research found association with increased mortality.

clinical course of patients with COVID-19 with gastric ulcerations are needed in the future.

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