Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Letter to Editor

Acute gastric and non-mesenteric colonic infarction following mRNA COVID-19 vaccination

To the editor,

The coronavirus disease 2019 (COVID-19) has spread globally in a short period of time. Vaccinations are now undertaken worldwide to prevent its spread and reduce the associated mortality. The messenger ribonucelic acid (mRNA) vaccine has proven to be effective in preventing several types of cancers and infectious diseases and has recently displayed new potential.[1] The BioNTech (BNT) 162b2 mRNA COVID-19 vaccine developed by Pfizer has become one of the leading vaccines for COVID-19. Its efficacy and safety have been demonstrated through recent large-scale randomized control trials, and known side effects are mild and acceptable.[2]

Gastric ischemia is a relatively rare occurrence since the stomach has a rich blood supply. Colonic ischemia occurs as a result of insufficient blood supply due to conditions such as mesenteric vascular occlusion and hypoperfusion. Colonic ischemia occurs in 16 out of 100,000 people, and 15% of these people develop bowel necrosis, a fatal complication that requires emergency surgical resection. Intestinal ischemia that progresses to infarction has a very high mortality rate, regardless of location. Herein, we present the case of a 78-year-old female patient with both gastric and colonic ischemia. The patient presented with a history of hypertension, hyperlipidemia, myocardial infarction, and atrial fibrillation. A day before she visited the emergency room, she had received her second dose of the Pfizer vaccine, following which she complained of sweating, palpitations, and dyspnea. The patient showed signs of hematochezia and was immediately admitted to a local hospital after being diagnosed with atrial fibrillation. Endoscopic findings showed gastric segmental ischemia (Fig. 1A) and colonic ischemia. Computed tomography (CT) findings suggested ischemic changes of the right colon and distal stomach with intact blood supply of the celiac axis. An emergency laparotomy was performed that confirmed gastric and colonic infarction. Splenic and common hepatic artery pulsation was intact; however, the distal antrum up to the lower body of the stomach revealed segmental gangrenous changes (Fig. 1B and C). The patency of the ileocolic, midcolic, left colic, and inferior mesenteric arteries was well maintained. However, a change in the color of the ischemic colon (from the ascending colon up to the sigmoid-descending colon junction) was observed (Fig. 1D and E). Ischemic changes of the small bowel were also observed; hence, distal gastrectomy and total colectomy with end ileostomy were performed. Unfortunately, the patient died three

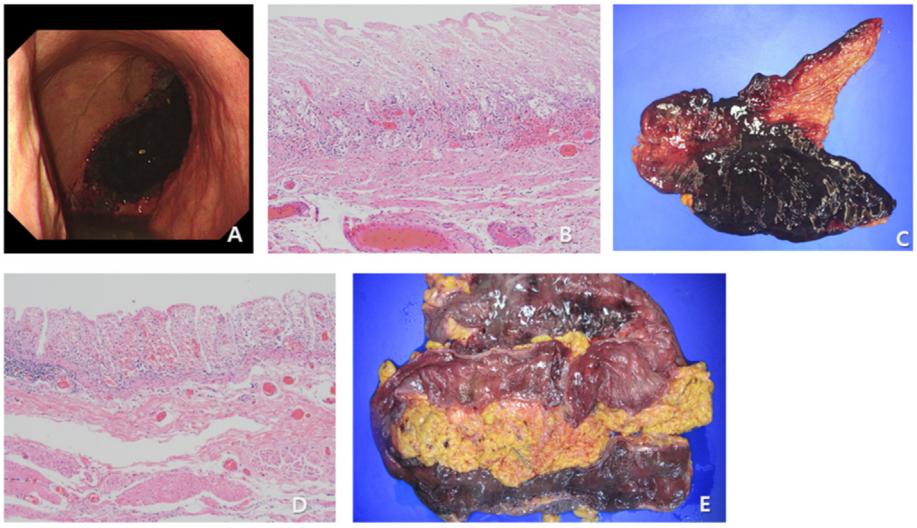

Fig. 1. A. Esophagogastroscopy revealed well-demarcated infarction lesions from the antrum to the lower body of the stomach; B. The biopsy of the stomach specimen showed hemorrhage and infarction without any evidence of thrombosis (Hematoxylin-Eosin, × 100); C. The stomach specimen showed well-demarcated ischemic lesions from the antrum to the lower body of the stomach; D. Biopsy of the colon revealed hemorrhage and ischemia without any evidence of thrombosis (Hematoxylin-Eosin, × 100); E. The colon specimen showed multiple ischemic changes.

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days after the procedure as a consequence of multiple organ failure. The vaccine has also been reported to be associated with myocarditis and pericarditis.[3,4] It should be noted that the pattern of colonic and segmental infarction of the stomach was atypical. Based on the above findings, it was concluded that such unusual patterns of infarction could be related to the mRNA COVID-19 vaccine. Therefore, we believe that elderly patients with underlying cardiac conditions should be cautious about receiving the vaccination as it may carry a risk of intestinal infarction.

Declaration of competing interest

The authors declare that they have no competing interests.

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