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## Image of the Month

## Could SARS-CoV-2 be associated with emphysematous gastritis?

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A 90-year-old patient was admitted to the emergency department with symptomatology of fever, cough, dyspnea, diarrhea, and abdominal pain. Physical examination revealed fever, tachypnea, hypoxemia, bibasal crackles and diffuse abdominal pain. Nasopharyngeal swabs were positive for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) on RT-PCR test. The blood test showed lymphopenia ( $0.67 \times 10^3/\mu\text{L}$ ), neutrophilia ( $7.58 \times 10^3/\mu\text{L}$ ), lactic acidosis (pH 7.29, lactate 8.7 mmol/L), elevated C-reactive protein (2.50 mg/dL) and procalcitonin (7.32 ng/mL). Chest x-ray revealed bilateral ground-glass opacities that suggested coronavirus disease 2019 (COVID-19) pneumonia. Abdominal CT scan showed diffuse gastric pneumatosis with progression to the esophagus and duodenum (Figs. 1A/B and 2A), associated with hepatic portal venous gas (Fig. 2B). These findings were compatible with COVID-19 pneumonia associated with severe emphysematous gastritis and massive



Fig. 2. Contrast-enhanced computed tomography (CT) with sagittal (A) and coronal (B) sections showing hepatic portal venous gas and diffuse gastric pneumatosis.



Fig. 1. Contrast-enhanced computed tomography (CT) with coronal (A) and a modified lung window (B) section. Diffuse gastric pneumatosis with progression to the esophagus and duodenum.

gastric distension. Supportive care and broad-spectrum antibiotic were prescribed. The patient, however, showed respiratory worsening and he died during admission.

Emphysematous gastritis is a severe infection caused by gas-forming bacteria, with a high risk of mortality [1]. On the other hand, SARS-CoV-2 is associated with several gastrointestinal disorders due to the invasion of the gastrointestinal angiotensin-converting enzyme 2 (ACE2) receptor and hypercoagulability caused by vascular endothelial cell injury.

To our knowledge, this is the first published case of emphysematous gastritis in a patient with SARS-CoV-2 infection. Further research is needed to establish this relationship.

## References

- [1] Singhania N, Bansal S, Singhania G, et al. Emphysematous gastritis. *J Emerg Med* 2020;59(6):e259–61.

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