A 60-year-old male under mechanical ventilation through endotracheal intubation due to severe COVID-19 pneumonia was treated at our intensive care unit (ICU) with extracorporeal membrane oxygenation for several weeks. Computed tomography (CT) revealed bilateral lung involvement and a left pulmonary abscess drained by a percutaneous catheter (▶ Fig. 1). Percutaneous endoscopic gastrostomy (PEG) was performed, but the patient developed an early buried bumper syndrome [1–4] after one month, so the tube was removed and gastroscopy showed an unexpected gastric perforation of the fundus (▶ Fig. 2, Video 1), defined as de novo perforation.

A CT scan showed a fluid collection in the left upper abdominal region, so the multi-disciplinary decision was to perform a peritoneoscopy (with a 6-mm scope), which was safely performed thanks to the insufflation of carbon dioxide [5]. The ultra-slim scope allowed us to cross the gastric leak and directly visualize the diaphragm (▶ Fig. 3a), spleen (▶ Fig. 3b), and the inner abdominal wall defect from PEG insertion (▶ Fig. 3c).

The patient was critically ill and unfit for surgery, so we placed a percutaneous drain in the patient’s abdominal wall defect under direct endoscopic and radiologic visualization. Later, a full-thickness continuous suture was successfully performed using the OverStitch suturing device (▶ Video 1), and closure was confirmed by the absence of intra-abdominal contrast diffusion after intra-gastric contrast injection (▶ Fig. 5). Meanwhile, the SARS-CoV-2 infection resolved, allowing his transfer to the ICU, where a second gastroscopy was necessary due to lack of clinical improvement. It showed another leak next to the sutured area, so another suture was performed and strengthened with a whipstitch over it (▶ Video 1). The absence of intra-abdominal contrast diffusion confirmed the complete closure, but he died one month later from his terminal pulmonary condition.
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► Fig. 3 Endoscopic view of intra-abdominal cavity showing abdominal organs. a Diaphragm (white arrow) on the left side and spleen at the top (red arrow). b Spleen (white arrow) and inner abdominal wall (red arrow). c Previous percutaneous endoscopic gastrostomy fistula (red arrow) and omentum (white arrow).

► Fig. 4 Pigtail catheter insertion. a Endoscopic view. b Radiographic view.

► Fig. 5 No leak was found with injection of intra-gastric contrast on radiography.


Bibliography

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