

Endoscopic unroofing drainage with a needle-knife for gastric wall abscess: a rare adverse event that developed after EUS-FNA



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Gastric wall abscess (GWA) is a rare adverse event of EUS-FNA. There have been a few reports of therapeutic interventions for GWA, such as EUS-guided drainage or surgical drainage. We report a case of GWA that was successfully treated by the endoscopic unroofing technique (Video 1, available online at www.VideoGIE.org).

A 68-year-old woman was referred for evaluation of a pancreatic tail mass (maximum diameter, 3.2 cm). To obtain specimens for histologic examination, transgastric EUS-FNA was performed with a 22-gauge needle (3 passes). The mass was diagnosed as adenocarcinoma, and the patient underwent adjuvant chemotherapy before curative resection. One month after EUS-FNA, the patient was hospitalized with high-grade fever and upper-abdominal pain.

Abdominal CT showed a rim-enhancing irregular cystic mass (maximum diameter, 4.4 cm) extending from the pancreatic tail to the posterior gastric wall (Fig. 1). The laboratory findings were as follows: white blood cell count, 9200/mm³ (percentage of neutrophils, 86.3%); serum C-reactive protein level, 21.54 mg/dL, hemoglobin A1c, 9.1%. Pyogenic GWA was suspected. Intravenous antibiotic therapy (meropenem 1 g every 12 hours) was started as soon as the patient was admitted.

EGD (GIF Type H260; Olympus Medical System, Tokyo, Japan) on day 3 showed a bulging mass with purulent fluid appearing from the mucosa in the posterior gastric wall (Fig. 2). EUS (GF Type UCT-260; Olympus Medical) showed a submucosal mass arising mainly from the second



Figure 1. CT view showing a tumor in the tail of the pancreas. Inside the posterior gastric wall is a lesion with a low-density area; the location of the lesion seems to match the route of the EUS-FNA procedure.

to the fourth layer of the gastric wall. The mass showed heterogeneous hyperechogenicity, suggestive of a GWA.

After the patient gave informed consent, endoscopic drainage by the unroofing technique was performed. First, the top of the mucosa with spilling pus was incised, measuring 2.0 cm, by use of a needle-knife in the pure cut mode, and, subsequently, pus began to flow out. Then, lavage of the submucosal abscess cavity was performed with normal saline solution by use of an ERCP catheter (MTW Endoskopie, Wesel, Germany). Finally, a rat-toothed forceps was used to open the incision further to facilitate drainage. No pus was noted thereafter in the abscess cavity. The procedure took only a few minutes.

Later, culture of the pus grew *Streptococcus intermedium*. The patient's symptoms promptly resolved a few days after the procedure, and she was discharged on day 10. Follow-up CT on day 16 revealed marked shrinkage of the GWA (Fig. 3). The patient then underwent curative surgery for pancreatic cancer, which was uneventful and without adverse events.

GWA is a rare infectious disease of the stomach. Only about 500 cases have been reported since it was first described in 1862.¹ In addition, there are very few reports



Figure 2. EGD view showing a submucosal tumor-like lesion with pus on top in the posterior gastric wall.

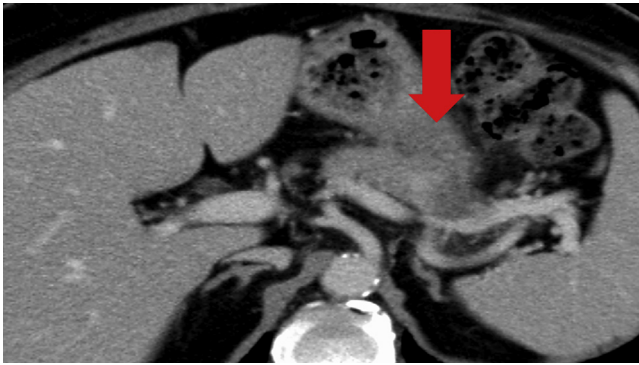


Figure 3. CT view on day 16 showing disappearance of most of the gastric wall abscess.

of the development of GWA as an adverse event of EUS-FNA.² Phlegmonous gastritis is another infectious condition of the gastric wall. A previous report described a case of severe phlegmonous gastritis arising as an adverse event of EUS-FNA.³ Risk factors for the development of GWA include delayed recovery of gastric mucosal injury (eg, due to diabetes mellitus, alcohol, or gastric ulcer), immune deficiency, and gastric secretion inhibitors.⁴ In our case, the patient had underlying diabetes mellitus and was receiving anticancer therapy. *Streptococcus* species are the most commonly isolated bacteria from cases of GWA.⁵

In the past, surgical drainage and antibiotic therapy were the main treatment modalities for GWA, before the emergence of minimally invasive endoscopic interventions.⁶ There have been several reports of GWA drainage with interventional EUS procedures.^{7,8} In our case, the EUS and endoscopic findings revealed incipient fistula formation between the encapsulated cystic mass and the gastric lumen. The unroofing technique adopted in this case, rather than EUS-guided drainage, allowed easy and surgical-like drainage of the abscess through the incision. Other advantages of the procedure were that it was a minimally invasive, short, and inexpensive procedure with the use of forceps and a cutting device, and no stent insertion was required for drainage, although EUS-guided drainage

with plastic stent placement has been reported as a useful treatment option for GWA in the literature.

DISCLOSURE

All authors disclosed no financial relationships relevant to this publication.

Abbreviation: GWA, gastric wall abscess.

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