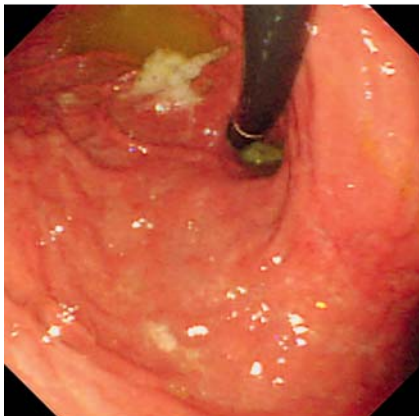
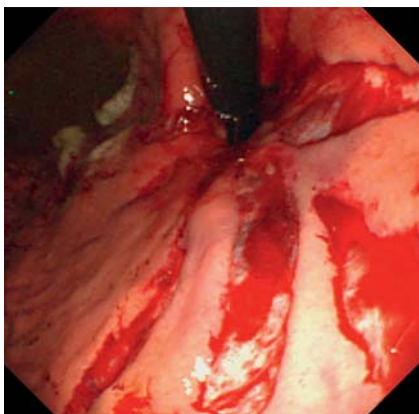


## Gastric rupture before puncture of the stomach in percutaneous gastrostomy



**Fig. 1** No gross abnormalities were found when a flexible endoscope was inserted into the stomach.



**Fig. 2** During gastric insufflations, performed before puncture of the stomach for a percutaneous endoscopic gastrostomy (PEG), several fusiform-shaped tears developed along the lesser curvature of the proximal stomach.

A 73-year-old man had swallowing difficulties because of a recent cerebrovascular accident, and was on enteral feeding via a nasogastric tube. Percutaneous

endoscopic gastrostomy (PEG) was chosen for long-term enteral feeding. Before the PEG tube was inserted, a flexible endoscope was inserted into the stomach for inspection. No gross abnormal lesion was detected in the upper gastrointestinal tract (▶ **Fig. 1**).

Then, before puncturing, the stomach was insufflated and indentation of the gastric lumen was confirmed by finger palpation of the abdominal wall. This caused the patient to choke a few times. Subsequently, bleeding occurred in the upper stomach. Several fusiform-shaped tears had developed along the lesser curvature of the proximal stomach (▶ **Fig. 2**).

Computed tomography (CT) imaging revealed pneumoperitoneum (▶ **Fig. 3a**) and pneumomediastinum (▶ **Fig. 3b**), requiring emergency laparotomy.

A 2-cm-long full-thickness tear along the lesser curvature of the stomach close to the cardia was identified and sutured.

Gastric rupture is caused by increased gastric pressure resulting from increased intra-abdominal pressure, with or without overdistention caused by food or gas. In more than 70% of the adult cases, gastric rupture occurs in the less distensible proximal lesser curvature of the stomach [1]. Spontaneous gastric rupture occurs due to vomiting, vigorous coughing, or convulsion. Its cause may also be iatrogenic, resulting from cardiopulmonary resuscitation, inadvertent esophageal intubation, Heimlich maneuver, or esophago-gastroduodenoscopy (EGD) [1–3].

Diagnostic EGD is extremely safe, and perforation of the gastrointestinal tract is rare with an incidence of 0.001%–0.05% [4]. Gastric rupture during gastric insu-

flations, which are performed before puncturing the stomach for a PEG, is also rarely reported [5]. Endoscopic gastric insufflation with air is important to avoid colon injury. In the present case, the patient's choking during gastric insufflations, which led to a sudden increase in intra-abdominal pressure, may have caused the gastric rupture. Endoscopists should consider this rare yet potentially lethal complication.

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**Competing interests:** None

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**Fig. 3** Computed tomography (CT) imaging revealed **a** massive pneumoperitoneum and **b** pneumomediastinum.