Gastric rupture before puncture of the stomach in percutaneous gastrostomy

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). 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, may have caused the gastric rupture. Endoscopists should consider this rare yet potentially lethal complication.

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 esophagogastroduodenoscopy (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 insufflations, which are performed before puncturing the stomach for a PEG, is also rarely reported [5]. Endoscopic gastric insufflation with air is important to avoid colonic 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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