A case of perforation following endoscopic biopsy of advanced gastric cancer

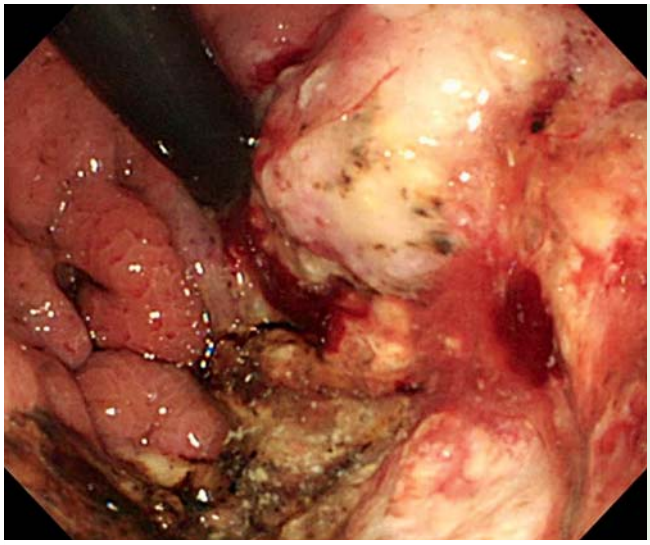

Fig. 1 A view during upper gastrointestinal endoscopy in an 82-year-old-man revealing a type 3 gastric tumor that was extending from the cardia to the fornix.

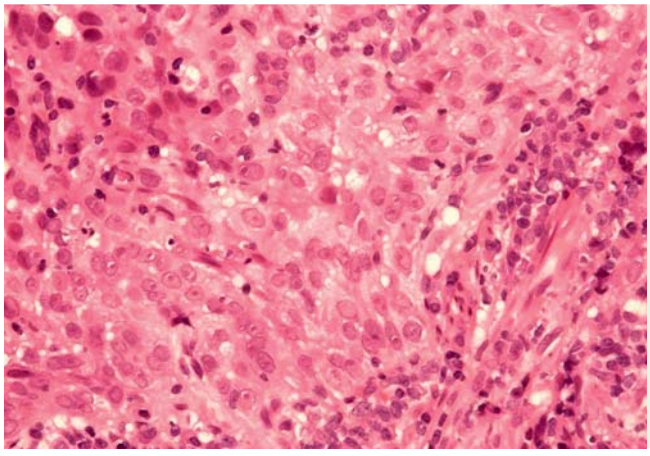

Fig. 2 Histological appearance of the biopsy specimen taken from the tumor shown in **Fig. 1** showing a poorly differentiated adenocarcinoma (hematoxylin and eosin [H&E] staining; magnification × 40).

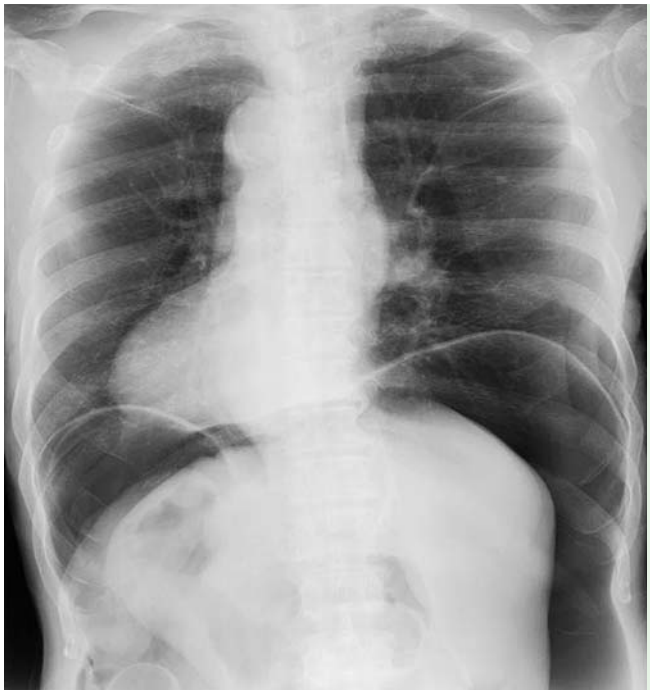

Fig. 3 A chest radiograph taken in a sitting position shortly after the endoscopy was performed showing complete situs inversus and a considerable amount of air under the diaphragm.

An 82-year-old man with complete situs inversus was admitted to our hospital because of anorexia. He usually required home oxygen therapy to manage his chronic respiratory failure. An upper gastrointestinal endoscopy performed by an endoscopist of 24 years' experience revealed a type 3 gastric tumor, approximately 7 cm in diameter, in the cardiac region of the stomach (**Fig. 1**). Three biopsies were taken from the marginal swelling and one from the base of the tumor using spiked biopsy forceps (Olympus FB-220K). Histology subsequently showed poorly differentiated adenocarcinoma (**Fig. 2**).

Shortly after the examination, the patient complained of abdominal distension and dyspnea. A chest radiograph revealed a considerable amount of air under the diaphragm (**Fig. 3**). Urgent abdominal decompression was carried out using a 14-gauge puncture needle to drain air from the peritoneal cavity and led to an improvement in his symptoms. A small amount of Gastrografin introduced into the stomach through a nasogastric tube revealed leakage from the base of the tumor (**Fig. 4**). As the associated perioperative risk of pulmonary dysfunction was high and the patient had only localized pain, a nonoperative therapy including continuous nasogastric suction, intravenous broad-spectrum antibiotics and hyperalimentation was started.

A fluoroscopic examination 1 week later confirmed closure of the defect (**Fig. 5**). Oral intake of fluids and solids was restarted. An abdominal computed tomography (CT) scan demonstrated tumor invasion to the crus of the diaphragm and the tail of the pancreas. As the tumor was also in contact with the aorta and celiac artery, a curative gastrectomy was considered too difficult (**Fig. 6**). Chemotherapy was initiated, but the patient developed aspiration pneumonia and died from complications.

Although perforation of the stomach caused by biopsy forceps is very rare, perforations of the small bowel and colon after biopsy have been reported [1, 2]. We presume that the biopsy forceps was pushed through the bottom of the tumor. The biopsy specimen taken from the bottom of the tumor contained only necrotic tissue, with no serosa. Treatment with endoclips for endoscopic perforation has been described in the literature since 1993 [3]; however, because of the fragility of the tumor tissue, closure using an endoclip did not appear to be feasible in our patient.

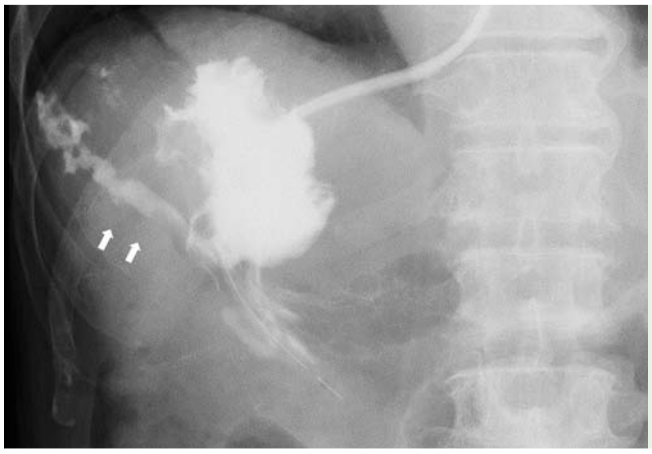

Fig. 4 Radiographic image showing leakage of Gastrografin from the base of the tumor (arrows) after the contrast had been introduced into the stomach through a nasogastric tube.

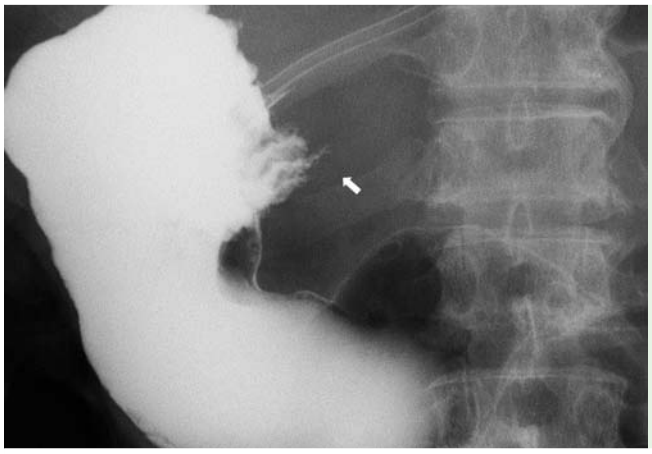

Fig. 5 Fluoroscopic examination of the stomach 1 week later showing the insertion site of the biopsy forceps but no leakage of contrast into the peritoneal cavity (arrow), which confirmed closure of the defect.

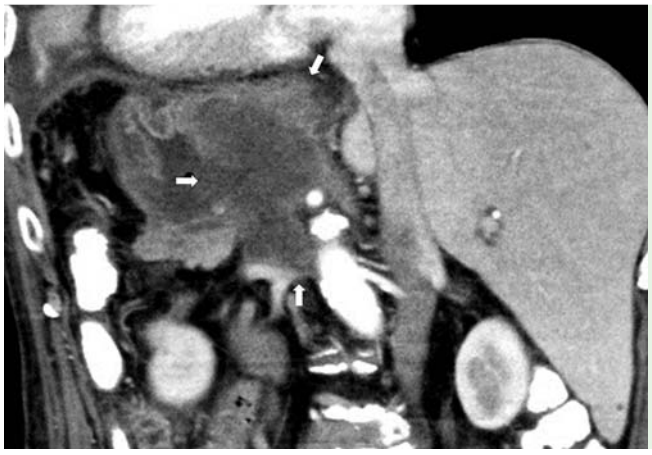

Fig. 6 An abdominal computed tomography (CT) scan demonstrating tumor invasion to the crus of the diaphragm and the tail of the pancreas. The tumor was also in contact with the aorta and celiac artery (arrows), which suggested infiltration.

It is known that gastric carcinoma infrequently perforates spontaneously during the course of the illness [4]. Perforation is more often a manifestation of advanced stage disease with serosal invasion. The preferred treatment for a perforated gastric cancer is still the subject of debate. The mortality rate and postoperative complications associated with emergency gastrectomy are higher than those of elective surgery.

In this report, we present the conservative treatment of an iatrogenic perforation of advanced gastric cancer.

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Competing interests: None

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Bibliography

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