

Gastro-umbilical Fistula as a Rare Complication of Benign Gastric Ulcer Perforation: A Case Report¹

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An fistula occurring between the stomach and other abdominal internal organs or to the surface of the body is usually encountered as a complication of stomach cancer or colon cancer, peptic ulcer disease, or other variable causes. The most common type of gastric fistula is a gastro-colic fistula that is mainly found as a complication of a gastric carcinoma or of a carcinoma of the transverse colon invading each other. Sometimes, a benign gastric ulcer perforation also can cause a gastro-colic fistula. However, as far as we know, a fistula occurring between the stomach and the umbilicus has not been reported. Here we present a case report of a gastro-umbilical fistula in a young woman that manifested as a umbilical discharge.

Index words : Abdomen
Ultrasonography
Gastric fistula
Stomach ulcer

An fistula occurring between stomach and other abdominal internal organs or to the surface of body is usually encountered as a complication of stomach cancer, colon cancer, peptic ulcer disease, and other variable causes (1 - 7). The most common type of gastric fistula is the gastro-colic fistula that occurs due to a complication of a malignancy arising in the stomach or colon, or sometimes occurs due to a benign gastric ulcer or other causes (1, 5 - 7). The cases of a gastro-pleural, gastro-pericardial and gastro-pancreatic fistula are rarely reported (2 - 4). However, to the best of our knowledge, a fistula occurring between the stomach and the umbilicus has not been reported.

Here, we present a case report of a gastro-umbilical fistula in a young woman.

Case Report

A 24-year-old female was admitted to our hospital complaining of gradually worsening pain on the epigastric area and lower abdomen of 24 hours duration. The patient had suffered from abdominal discomfort for the last seven days, but did not receive any treatment. At the same time the patient also complained of pus draining through the umbilicus. The patient had no known underlying disease or history of a benign gastric ulcer.

A contrast enhanced abdomino-pelvic CT was performed from the diaphragm to the pubis symphysis. Images through the upper abdomen showed wall thickening of the gastric lower body to the proximal antrum at the greater curvature side and an approximate 2.5 cm sized irregular rim enhanced low density lesion was noted between the stomach and umbilicus undersurface (Fig. 1A, B). Increased fat density and infiltration of the gastrocolic ligament was also noted. There was no free

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air density in the abdominal cavity. Although there was no definite perforation site seen on the CT scan, a sealed off gastric ulcer perforation with abscess was suspected. Abdominal ultrasonography (US) was also performed that revealed an approximate 3 cm sized irregular cystic lesion underneath the umbilicus communicating with the umbilicus. A complicated urachal remnant with abscess formation was added to the differential diagnosis.

The patient underwent a laparotomy. The stomach demonstrated edematous swelling at the greater curvature side of the antrum that had two perforated holes with a connection to the umbilicus. At the connection site, an abscess was noted, and the abscess extended to the umbilicus. A benign gastric ulcer perforation with umbilical fistula was considered. Since the most common benign cause of stomach perforation is related to peptic ulcer disease, a truncal vagotomy with antrectomy, gastro-duodenostomy was performed and external drainage through the tract of the umbilical fistula was placed.

The gross specimen obtained from the distal antrectomy demonstrated the presence of a firm and fibrotic abscess pocket at the greater curvature side of the antrum (Fig. 2). In addition, the serosa was covered by a white inflammatory exudate.

Discussion

Benign gastric ulcer disease manifests most frequently as gastritis with bowel wall thickening. Hemorrhage, ulcer perforation or penetration, abscess formation, or gas-

trointestinal fistulas have been reported as severe complications of benign gastric ulcer disease (7).

The underlying causes of acquired gastric fistulas are diverse and virtually any disease process resulting in gastric perforation can cause a gastric fistula (1). Gastro-colic and gastro-duodenal fistulas are relatively common; however, occurrence of gastro-pleural, gastro-pericardial and gastro-pancreatic fistulas have been rarely reported (1 - 4).

The gastro-colic fistula is the most frequently reported type of fistula, and occurs as a complication of a malignant tumor from the colon or stomach, benign peptic ulcer disease, aspirin usage, steroid or nonsteroidal anti-in-

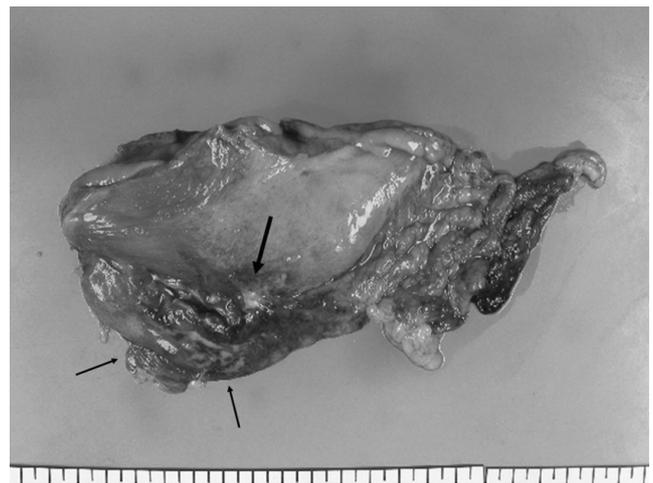


Fig. 2. The distal antrectomy specimen shows a firm and fibrotic abscess pocket at the greater curvature side of the antrum (thin arrows). The serosa is covered by a white inflammatory exudate (thick arrow).

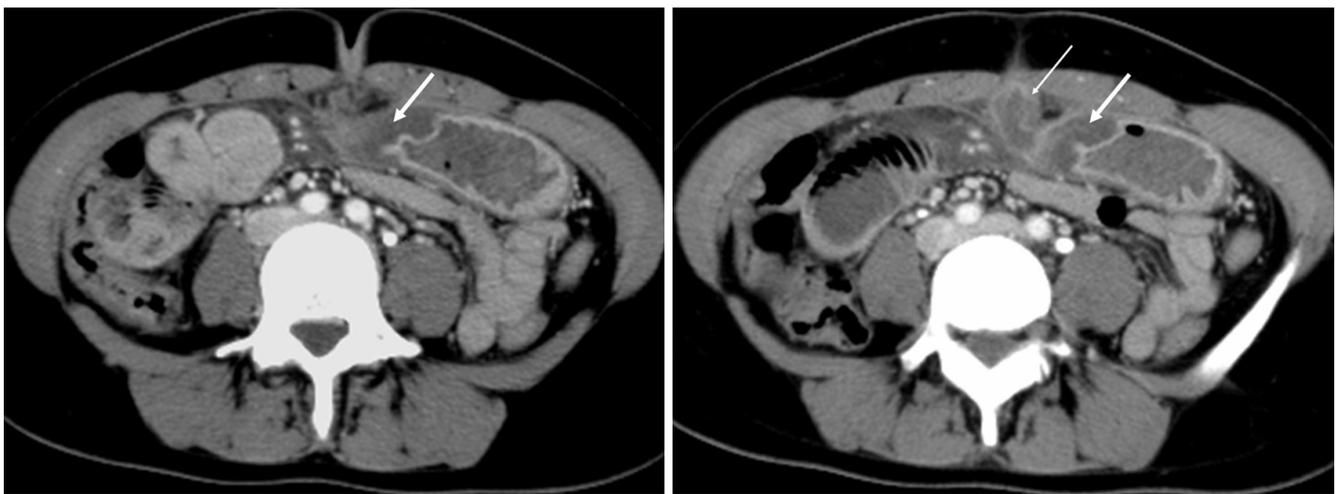


Fig. 1. A 24-year-old female with abdominal pain and umbilical discharge.

A, B. CT shows stratified wall thickening at the gastric lower body to the proximal antrum (thick arrow) and an approximate 2.5cm sized irregular rim enhanced low density lesion between the stomach and the umbilicus (thin arrow).

flammatory agent usage, any kind of inflammation, from a foreign body or due to an iatrogenic cause (1 - 7). In the case of a gastro-colic fistula due to benign gastric ulcer perforation, the ulcer is usually located along the greater curvature of the stomach and extends through the gastrocolic ligament to the transverse colon (1, 5).

Umbilical discharge is commonly accompanied by acute umbilical inflammation such as omphalitis, or embryonic anomalies such as an omphalomesenteric duct anomaly and urachal remnant with combined infection (8, 9). Thus, if the patient presents with umbilical discharge, the most frequent causes are considered in advance, and communication between the umbilicus and the stomach would not be typically considered.

As far as we know, there has been no reported case of a fistula between the umbilicus and stomach due to benign gastric ulcer perforation.

In this case, the patient was a young female that presented with umbilical discharge. Initially, a diagnosis of benign gastric ulcer perforation was difficult to consider, as the patient did not have any history of an ulcer or steroidal or nonsteroidal anti-inflammatory drug usage. A CT scan was useful to diagnose benign gastric ulcer perforation with gastro-umbilical fistula, even though there was no demonstrable perforation site or free air in the abdominal cavity as seen on CT. However, gastric wall thickening, perigastric fat infiltration, and abscess formation underneath the umbilicus with a connection between the stomach and umbilicus on CT were the most useful clues to provide a diagnosis.

The patient had a hypotonic stomach that led to the downward location of the gastric antrum in the vicinity

of the umbilicus. This might have been the cause of the gastro-umbilical fistula in this patient, occurring after benign ulcer perforation, although there has been no previously reported case.

In conclusion, we experienced a rare case of a gastro-umbilical fistula caused by benign gastric ulcer perforation.

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