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Case Report

Surgical treatment of synchronous early esophageal and gastric cancer: esophageal reconstruction with a retrograde gastric tube

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Abstract: A 51-year-old man with a 5 days history of mild dysphagia was referred to our hospital. Computed tomography of the chest and abdomen showed a bulge tumor of the lower third esophageal wall and a malignant lesion in the antrum in the distal part of the stomach. The patient underwent a left anterolateral thoracotomy through the sixth intercostal space via a ventral midline incision, with a two-field lymph node dissection of the upper abdomen and mediastinum. The proximal stomach was divided into two parts. One part was used for a gastroesophageal anastomosis, called a retrograde gastric tube. The other part was used for a gastrojejunal end-to-side anastomosis. The retrograde gastric tube was placed in the esophageal bed and the lesser curvature of the remnant stomach was in the abdominal cavity. The patient started a liquid diet on postoperative day 9 and was discharged on postoperative day 15. On follow-up one and a half years after surgery, the patient was in a good condition and there was no evidence of recurrence or metastases. In this report, we demonstrate that a retrograde gastric tube can be used for reconstruction in patients with synchronous early low esophageal and distal gastric cancer.

Keywords: Retrograde gastric tube, esophageal cancer, gastric cancer, synchronous, surgery

Introduction

Synchronous esophageal and gastric cancer are uncommon. In general, esophageal reconstruction using the stomach is preferred after esophagectomy, but this could be a problem if the stomach has a synchronous malignancy. We present a surgical method using a retrograde gastric tube for esophageal reconstruction to treat a patient with synchronous early cancer of the lower esophagus and distal stomach.

Case report and technique

A 51-year-old man with a 5 days history of mild dysphagia was referred to our hospital. Computed tomography of the chest and abdomen showed a bulge tumor of the lower third of the esophageal wall (**Figure 1A**) and a malignant lesion in the antrum in the distal part of stomach (**Figure 1B**). Biopsies from the lesion in the esophagus showed squamous cell carcinoma and the lesion in the stomach was identified as adenocarcinoma. Distant lymph node metastases and distant metastases to other organs were not found. Prior to surgery, the complete colon was examined by colonoscopy and the colon was prepared with mechanical cleaning. The patient underwent a left anterolateral thoracotomy through the sixth intercostal space via a ventral midline incision, with a two-field lymph node dissection.

During surgery in the abdominal cavity, the right and short gastric vessels and the right and left gastroepiploic vessels were divided, but the left gastric vessels were retained. The greater curvature of the stomach was made into a gastric tube about 4 cm in width and 10 cm in length by a linear cutting suture from bottom to top. The upper end of the lesser curvature of the stomach was resected 5 cm above the tumor of stomach. Thus, the proximal stomach was divided into two parts (**Figure 2A**, **2B**). The retrograde gastric tube appeared rosy, with ade-

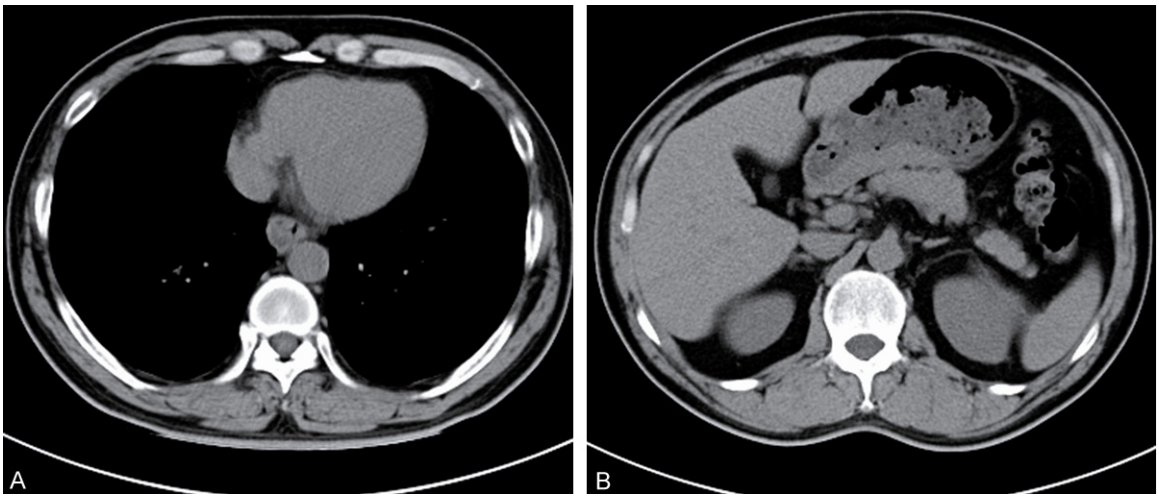

Figure 1. A. Computed tomography of the chest showed thickening of the lower third of the esophageal wall. B. Computed tomography of the abdomen showed malignant lesions in the antrum in the distal part of the stomach.

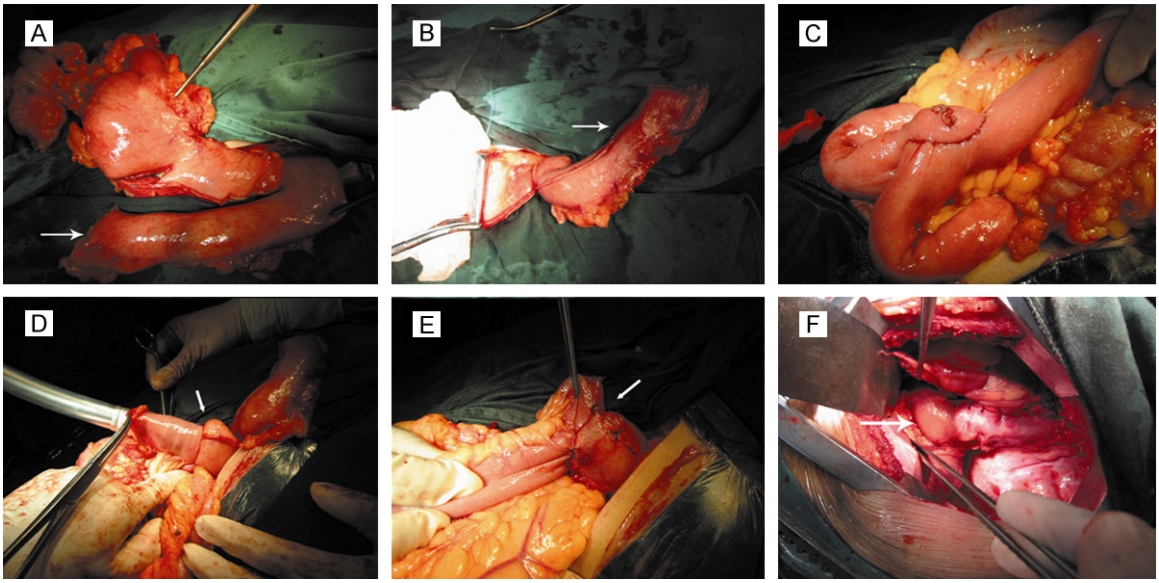

Figure 2. A, B. The proximal stomach was divided into two parts. The retrograde gastric tube appeared rosy, with adequate blood supply (arrow). C. The jejunum end to side anastomosis. D, E. The lesser curvature of remnant stomach jejunum anastomosis (arrow). F. The retrograde gastric tube was placed in the esophageal bed (arrow).

quate blood supply due to the left gastric vessels. Therefore, we decided to use a retrograde gastric tube for esophageal reconstruction. The jejunum end to side anastomosis (**Figure 2C**) and the lesser curvature of the remnant stomach jejunum end to side anastomosis (**Figure 2D**, **2E**) were performed using a circular stapler, respectively.

The patient then underwent a radical esophagectomy via a left anterolateral thoracotomy through the sixth intercostal space, the upper end of the esophagus was resected 5 cm above the tumor and the retrograde gastric tube was freed up to the gastroesophageal junction. An esophagogastric anastomosis was performed mechanically above the level of the left inferior pulmonary vein using a circular stapler by an anterior gastrotomy to the high point of the fundus of the retrograde gastric tube. The retrograde gastric tube was placed in the esophageal bed (**Figure 2F**) and the lesser curvature of

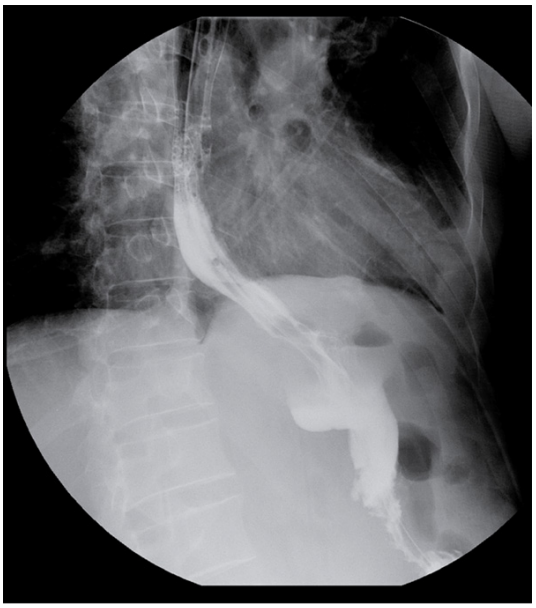

Figure 3. The integrity of the anastomosis was confirmed by meglumine diatrizoate contrast radiography on postoperative day 8, with no signs of leakage or stricture.

the remnant stomach was in abdominal cavity. The operative time was 310 min and intraoperative blood loss was 220 mL.

The postoperative course was uneventful. The integrity of the anastomosis was confirmed by meglumine diatrizoate contrast radiography on postoperative day 8, with no signs of leakage or stricture (**Figure 3**). The patient started a liquid diet on the following day, and was discharged on postoperative day 15. Postoperative pathology diagnosed the tumor in the distal stomach as a tubular adenocarcinoma and involved muscularis and the neoplasm of the lower esophagus as a squamous cell carcinoma involved submucosa, metastases in the abdomen and mediastinum lymph nodes were not found. The gastric and esophageal cancers were pathologically staged as pT2N0M0, stage I B and pT1N0M0, stage I B, respectively, according to the 7th edition of the UICC-TNM Classification of Malignant Tumors [1]. No complications occurred postoperatively and there were no complications resulting from insufficient blood supply. The patient underwent adjuvant chemotherapy of four cycles of cisplatin, 5-fluorouracil and docetaxel every 21 days after the operation. On follow-up one and half years after surgery, the patient was in a good condition and there was no evidence of recurrence.

Discussion

The occurrence of multiple primary cancers in the upper digestive tract, including the esophagus, is a well-known phenomenon that has been explained by the concept of field cancerization [2]. However, the occurrence of synchronous esophageal squamous cell carcinoma and gastric adenocarcinoma is rare [3]. Only 30.6% of patients with synchronous esophageal and gastric cancer were able to undergo curative surgery, while the rest received chemotherapy or palliative treatment [4].

The stomach is usually used for reconstruction after resection of esophageal carcinoma [5] but this could be a problem if the stomach has a synchronous malignancy. When the stomach cannot be used, the colon or jejunum are used as an alternative esophageal substitute [6]. However, a colon or jejunum interposition is a more complicated procedure, with a greater frequency of anastomotic leakage, infection and a poor general quality of life [7], especially in the colon [8, 9].

According to a retrospective study by Xie and colleagues [10], the remnant stomach may be used for reconstruction in patients with esophageal cancer as a substitute organ after distal gastrectomy. We made full use of the proximal stomach with the proximal stomach divided into two parts, the left gastric vessels were retained in surgery and there was no ischemia phenomenon at the retrograde gastric tube. In our case, no complications occurred during the postoperative period and upper gastrointestinal radiography on postoperative day 8 showed that the contrast media passed smoothly through the thoracic retrograde gastric tube and the remnant stomach to the jejunum, without leakage. The operation should be conducted depending on the tumor location and stomach condition. If the stomach cannot be used, digestive tract reconstruction can be accomplished using the colon.

In conclusion, it is important to select an appropriate operative method for patients with synchronous early esophageal and gastric cancer or other benign lesions. A retrograde gastric tube can be used for esophageal reconstruc-

tion, an easier procedure which also could provide a better quality of life.

Disclosure of conflict of interest

None.

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