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End-to-end esophagojejunostomy versus standard end-to-side esophagojejunostomy: which one is preferable?

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Abstract

Background: End-to-side esophagojejunostomy has almost always been associated with some degree of dysphagia. To overcome this complication we decided to perform an end-to-end anastomosis and compare it with end-to-side Roux-en-Y esophagojejunostomy

Methods: In this prospective study, between 1998 and 2005, 71 patients with a diagnosis of gastric adenocarcinoma underwent total gastrectomy. Standard esophagojejunostomy with an end-to-side fashion was performed in 41 patients and compared with our recommended technique of end-to-end esophagojejunostomy in 30 patients.

Results: This study showed that esophagojejunostomy with an end-to-end fashion has a low incidence of postoperative dysphagia (33.3%), whereas in those with an end-to-side anastomosis the rate of dysphagia is very high (83%).

Conclusion: A Roux-en-Y esophagojejunostomy with an end-to-end anastomosis has a low incidence of postoperative dysphagia and we strongly recommend using this technique.

Keywords: total gastrectomy, alimentary tract reconstruction, esophagojejunostomy, dysphagia.

Introduction

A variety of different surgical procedures have been proposed for alimentary tract reconstruction after total gastrectomy in patients with gastric carcinoma. These procedures have great influence on the patients' nutrition and quality of life [1,2].

In a study by Adachi et al. over 50% of patients undergoing roux-en-y esophagojejunostomy complained of heartburn, and 20% showed dumping syndrome throughout the postoperative period [1,7]. Patients undergoing Roux-en-y esophagojejunostomy with jejunal pouch complained of early satiety in the late postoperative period [3,5]. Gastrointestinal and hepatobiliary dual scintigraphy [ghds] has shown that the rate of bile reflux with Roux-en-y anastomosis was relatively high after surgery.

The customary technique of end-to-side esophagojejunostomy following total gastrectomy is almost always associated with some degree of postoperative dysphagia [1,3,4,6]. This

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symptom does not always follow the surgical procedure immediately and may appear up to 4 weeks after discharge from hospital.

The end to end esophagojejunostomy seem to have less deleterious effect on postoperative weight loss [8].

Methods

This prospective study was performed by a simple non-randomized sampling method, in which the surgical results of 71 patients with a diagnosis of resectable gastric adenocarcinoma were assessed in the time period between March 1998 and October 2005.

Group I consisted of 41 patients aged from 36 to 80 years (27 males, and 14 females), who underwent esophagojejunostomy with an end-to-side anastomosis.

Group II consisted of 30 patients aging from 40 to 78 years (19 males and 11 females) who underwent esophagojejunostomy with an end-to-end anastomosis. The rate of post-procedure dysphagia was assessed and compared between two groups. Other variables such as postoperative morbidity and mortality, anastomotic leak and length of hospital stay were also compared. In both groups all of the anastomoses were performed in one layer using 3/0 silk with Gambee sutures.

Feeding with postgastrectomy diet was instituted after bowel function resumed, usually within 5 days post-operation after obtaining a normal contrast study. The results of 6 months follow up of these patients are shown in Table 1.

Results

In group I, 34 of 41 patients (82/9%) developed dysphagia postoperatively. 8 of 34 patients (27.5%) had severe dysphagia and showed stricture at the anastomosis. Three out of eight patients with severe dysphagia had recurrence at the site of anastomosis. 25 of 34 patients (73%) presented postoperatively with mild to moderate dyphagia. 7 out of 25 patients with mild to moderate dysphagia showed stricture at the anastomosis site.

In the group II, 10 of 30 patients (33.3%) developed dysphagia postoperatively. Two of ten patients had severe dysphagia. One of two patients with severe dysphagia had stricture and recurrence at the site of anastomosis, and the other one had stricture at the site of anastomosis due to leak. Eight of ten patients had mild to moderate dysphagia. In one of them, the reconstructed bowel was tortuous around the anastomosis site, which could explain the cause of dysphagia.

Leak of anastomosis occurred in 2 patients in group I in contrast to 1 patient in group II. One of the patients in the end-to-side anastomosis group died on the 10th postoperative day with severe sepsis in the context of anastomotic leakage. Other patients with this complication were managed expectantly. There was no mortality in group II.

Other complications included 1 case of postoperative pneumonia and 2 cases of wound infection in group I, compared with 1 case of

Complications and mortality	Group I	Group II
Dysphagia	82.9 %	33.3%
Anastomotic stricture	17%	6%
Anastomotic leakage	5%	3%
Postoperative pneumonia	2.5%	0%
Wound infection	5%	3 %
Postoperative hospital stay	8.1 days	6.8 days
Mortality	2.5 %	0%

Table 1. Comparison of postoperative complications and mortality between end-to-side esophagojejunostomy anastomosis (group I) and end-to-end esophagojejunostomy anastomosis (group II).

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wound infection in group II. The average length of postoperative hospital stay was 8.1 days for group I, compared with 6.8 days for group II patients (Table 1).

The majority of patients were followed up to six months after operation. Follow-up visits were continued thereafter by oncology and gastroenterology subspecialties.

Discussion

Most of the patients with conventional end-to-side anastomosis complained of dysphagia. Postoperative morbidity and mortality as well as postoperative hospital stay was far more prolonged in the end-to-side group compared with the end-to-end anastomosis group. Alternatively when esophagojejunostomy is performed in an end-to-end fashion, the jejunum acts as a dynamic graft and contributes to bolus transport, and the rate of dysphagia will decrease, with no increase in the rate of anastomotic complications.

The use of our recommended technique of end-to-end esophagojejunostomy seems to minimize the risk of anastomotic stricture and the development of postoperative dysphagia.

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