



Resectable Gastric Adenocarcinoma Cancer and the Role of Early Feeding on Clinical Outcome

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Abstract

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BACKGROUND: Gastric adenocarcinoma is one of the most common gastrointestinal tract cancers, it could be found either in elderly or young patients. Surgical resection is still the main therapeutic option and the gold standard for resectable cases. Enhanced recovery protocols have been announced to improve the clinical outcome in of gastrointestinal cancer surgery. Although there remain many controversies, especially in upper GI cancer, which is still challenging in starting the oral feeding after surgical resection. We will report the clinical outcome of the early feeding on resectable gastric adenocarcinoma patients.

METHODS: This was a retrospective study, taken from January 2018 to December 2020. All respectable gastric adenocarcinoma patients were included in the study. Tumor locations, type of resection, and reconstruction were evaluated. All patients had early oral feeding from the first post-operative day, continued with liquid and semi-solid food. The short-term outcome was recorded including the anastomose leakage and surgical site infection.

RESULTS: We reported eight gastric cancer patients during this study. One patient was a young gastric cancer patient and the rest were > 50 years old patients. Gastric antrum was the most common tumor site with partial gastrectomy and Billroth II has been done. Three patients were corpus site and one case of fundus cancer, total gastrectomy, and Roux-en-y esófago-jejunoanastomosis reconstruction was done.

We found no anastomosis leakage. No SSI and no readmission associated with post-operative morbidity.

CONCLUSION: Early feeding on resectable gastric adenocarcinoma patients was workable, has good clinical outcomes, and could be tolerated well, no matter what type of gastric resection we did.

Introduction

Over several decades, the incidence of gastric cancer has decreased, especially in the United States and Western Europe, but in the East Asian countries, gastric cancer has still become a major health issue. Globally, over 1 million cases were resulting in over 782,000 cancer-related deaths in 2018. These conditions make gastric cancer which was the fifth most frequently diagnosed cancer and the third leading cause of cancer-related deaths in the entire world. The highest incidence rate of the gastric cancer occurs in East Asia, South and Central America, and Eastern Europe. When it correlated with gender, in Japan and Korea, the incidence is higher in men and in China, gastric cancer is the most common cause of cancer related-mortality [1].

Over 95% of gastric cancer are adenocarcinoma and typically were classified based on the anatomic location such as cardiac (proximal) or nocardia (distal) and histologic type (diffuse or intestinal). The diffuse type, which is characterized by undifferentiated tumor cells arranged in a scattered formation in fibrous stoma is more prevalent in low-risk

areas and is mostly associated with heritable genetic abnormalities [2].

The primary treatment option for the localized gastric cancer patients is surgery. Complete resection with negative margins is widely considered as a main standard goal, whereas the type of resection either subtotal or total gastrectomy and the extent of lymph node dissection remains the common issues to be debated and such controversies remain [1].

Since this last decade, the Enhanced Recovery After Surgery (ERAS) has already been announced with the main goal to increase the better clinical outcome and to reduce the morbidity and mortality no matter the type of surgical technique. These ERAS protocols contain not only including the post-operative care but also perioperative and intraoperative care for any kind of surgery [1], [3].

Tumor resection is the gold standard for gastric cancer management. The short-term outcome was one of the main parameters of surgery that can be influenced by several factors. Early oral feeding was one of the factors which could influence the short-term outcome. We will evaluate the effectiveness of the early oral feeding on resectable gastric cancer patients in our center.

Methods

This is a retrospective study from a single center and single operator, data have been taken from January 2018 to December 2020. The resectable gastric adenocarcinoma cancer patients were included in this study, with no previous chemotherapy history. Recurrence disease will be excluded from the study. The information about tumor location, surgical resection type, and type of reconstruction (Billroth I or Billroth II) will be reported. All subjects had early feeding started on the first day after the surgery and were already stable hemodynamically, which will be continued with liquid and semi-solid oral intake. The clinical outcome would be evaluated, including the leakage of the anastomosis and surgical site infection.

Results

During this study, we reported eight patients were included, seven patients were > 50 years old. The most common site was the antrum (four patients). Partial gastrectomy and antrectomy were done on them, total gastrectomy with Roux-en-y esophagojejunostomy was done on one patient with fundus gastric cancer. Billroth II reconstruction was our choice of procedure. All patients had early oral feeding on the first POD. They could be tolerated well with no anastomosis leakage. No SSI was found and no readmission was associated with post-operative morbidity. The types of reconstruction have not limited the efficacy of the early oral feeding. Both of cases were gastric adenocarcinoma on pathology finding.

The characteristic of the patients is shown in Table 1.

Table 1: Patients characteristic

Patients characteristic	n
Tumor site	
Corpus	3
Antrum	4
Fundus	1
Reconstruction	
Billroth II	7
Roux-en-y esofago-jejunostomy	1
Post-operative morbidity	
Leakage anastomosis	Nil
Surgical site infection	Nil
Pulmonary	Nil

Discussion

The perioperative (including pre-operative, intraoperative, and post-operative) approach remains a controversy in our clinical practice. Although it has already been announced during the last decade and

has been supported by current systematic review and meta-analysis, this recommendation for enhanced the recovery after surgery has not been applied in all centers as a critical guidelines for major gastrointestinal surgery, no matter the surgical approach was chosen by the surgeon [4].

ERAS protocols suggested minimal invasive surgery as a surgical option for major gastrointestinal surgery. For some any other reasons, these protocols could be applied even in conventional open surgery for this case. One of part of this protocol is early oral feeding for respectable gastric cancer surgery. No matter the type of resection, the early oral feeding could be applied and did not increase the post-operative morbidity and leak of the anastomosis. Many types of gastric resection and reconstruction have been done in our center during this study. The early oral feeding was associated with the early return to bowel movement, decreasing surgical site infection, and reducing the length of stay [2], [3].

Previous post-operative care, including prolonged fasting and nothing per oral (NPO) in any type of gastrointestinal surgery, was associated with a prolonged length of stay, longer time was needed for the bowel movement and was not reducing the anastomosis leak not only for large bowel anastomosis but also in upper gastrointestinal surgery including gastric resection and reconstruction [3], [5], [6].

Although the ideal approach for resectable gastric cancer according to ERAS protocols is minimally invasive surgery, this condition did not limit another approach, as conventional surgery [7]. Many studies applied ERAS protocols in open surgery and suggested better clinical outcomes, not only for the short-term but also for long-term clinical outcomes. The early oral feeding actually was not the most critical approach in this protocol, other approaches such as early mobilization, early Foley catheter, and early intra-abdominal drain removal were to play an important role in the clinical success of these protocols [8], [9], [10].

The critical issue about this ERAS protocol for the early oral feeding is the amount of oral feeding which could be given to the patients, although it has already been applied in our daily clinical practice for major gastrointestinal surgery, not only in gastric retention and other upper gastrointestinal procedure, there were no acceptable guidelines yet for this preferable amount of oral feeding. Some surgeons start with early clear fluid as soon as the bowel movement starts for hourly or each 4 until 6 h interval.

Conclusion

Although we applied this protocol in the open gastric resection procedure and it might be said as

partial ERAS protocol, early oral feeding was safe and workable on resectable gastric cancer undergoing many types of resection and reconstruction with no unfavorable outcomes. The anastomosis leak was not increasing following these protocols.

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