

## Case Series

# The role of feeding jejunostomy on supportive enteral nutrition for resectable esofago-gastric junction adeno carcinoma undergoing total gastrectomy and esofago jejunostomy reconstruction: a case series

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### ABSTRACT

As a part of enhanced recovery after surgery protocols (ERAS), early gut feeding has been applied in most of gastrointestinal surgery including major resection of distal esophageal and esofago-gastric junction adeno carcinoma. Early gut feeding could be applied not only in minimally invasive procedure, but also in conventional open technique. Many enteral feeding options can be chosen as a post-operative enteral nutrition for the patients. One of them is feeding jejunostomy tube placement, we will evaluate the safety and effectiveness of this enteral route on resectable esofago-gastric cancer resection. We will evaluate the clinical outcome of resectable esofago-gastric cancer patients and reconstruction, feeding jejunostomy tube has been placed as post-operative enteral route for nutrition. The patient with history of neoadjuvant therapy will be excluded. The post-operative evaluation including morbidity associated with jejunostomy tube will be recorded. We reported 4 cases, all of them had stage III esofago-gastric adeno carcinoma and conventional laparotomy technique was done. Feeding jejunostomy was tolerated well by the patients, enteral feeding can be started during the first 24 hours after surgery. No post-operative ileus and surgical site infection has been reported. Tube site infection was not found during this study. Although it still remains controversial, feeding jejunostomy tube was safe, feasible and has been tolerated well on esofago-gastric cancer patients undergoing resection and reconstruction.

**Keywords:** Feeding jejunostomy, Enteral nutrition, Esofago-gastric adeno carcinoma

### INTRODUCTION

Distal esophageal and esofago-gastric cancer is one of the most common upper gastrointestinal cancer which has been found in our clinical practice. The definitive management is so challenging, surgical resection is the gold standard with the option of preoperative neoadjuvant chemoradiotherapy to improve the clinical outcome and recurrence free survival after surgery.<sup>1</sup>

Especially for this distal part esophageal cancer, in the resectable cases, total gastrectomy is the chosen procedure, even in minimally invasive or conventional

laparotomy surgery to resect the main tumor and been followed by any type of reconstruction (esophago-jejunostomy reconstruction). There are two techniques can be used in make this reconstruction, by using stapler device and hand suture, both of them has comparable outcome in the leak anastomosis, stapler device has higher risk of anastomosis stricture.<sup>2</sup>

There were many perioperative support treatment has been announced, since more than a decade, enhanced recovery after surgery (ERAS) protocols has been announced to improve the post-operative clinical outcome and to reduce the morbidity with the acceptability and feasibility of the patients. Application of this ERAS protocols during peri-

operative surgery play an important role on the intra-operative and post-operative period. This was not only improved the clinical outcome but also to reducing the post-operative complication following major gastrointestinal surgery, especially in the upper gastrointestinal cancer cases.<sup>1,3</sup>

Pre-operative nutrition support has also play a key role on the successful multidisciplinary treatment. Such controversies were still remaining, whether the post-operative oral intake should have started early in the first post-operative day or delayed oral intake. Although current recommendation stated that early oral intake was safe and feasible even in upper gastrointestinal cancer resection and reconstruction, delayed oral feeding after esophageal resection was still has any reason to be chosen by the surgeon.<sup>2</sup>

The other controversies are the option to placed tube jejunal feeding following resection of distal esophageal and esophago-gastric cancer as a routine procedure after resection.<sup>2,3</sup> Although it has many post-operative morbidities such as, tube insertion infection, leakage and intra-abdominal abscess, any other reason to place this jejunal tube feeding is to maintain enteral route for nutrition while oral intake could be started as soon as possible during the first 24 hours even in small amount. The tube jejunal feeding could be chosen to support the basal energy consumption. This study would have evaluated the role of feeding jejunostomy as one of a nutritional supportive for the upper gastrointestinal surgery.

## CASE SERIES

This study was state in our department of surgery, from January 2020 till December 2021. The subjects of this study are the distal esophageal, esofago-gastric cancer patients. The inclusion criteria are TNM stage III of esofago-gastric adeno carcinoma patients at any age of diagnosis, the surgery procedure is conventional laparotomy approach, all resectable cancer will be included. The patients with previous history of neoadjuvant therapy and type II diabetes will be excluded. Tolerability of the patients, post-operative morbidity will be reported if present. Both of the patients get enteral feeding combining the oral intake and jejunostomy tube feeding, starting 50 cc for 6 times daily and will be increasing gradually until 150 cc. This study has been approved by The Health Research Ethics Committee, number: 247/III/HRcEC/2018.

We reported 4 cases of resectable esofago-gastric junction adeno carcinoma. Both of the cases are stage III according to TNM system.

The clinical symptoms of the patients were already in the late presentation of cases, hematemesis and severe dysphagia are the most common symptoms. Upper gastrointestinal diagnostic endoscopy has been done and

biopsy was taken for histopatology examination with adeno carcinoma as the type of esofago-gastric junction cancer. Laparotomy conventional total gastrectomy has been done, followed with roux n y esofago-jejunosomy reconstruction and tube feeding jejunostomy as a supportive nutrition access with the parenteral nutrition as a combination during post-operative period.

Tube feeding jejunostomy was started as soon as the gut work when the bowel sound was present in the first 24 hours and the patients in stable haemodynamic. Both of the patients also started the clear fluid per oral early in the first post-operative day. There were no adverse effect following this tube jejunostomy feeding early in the first post-operative day, no symptom of abdominal pain, post-operative diarrhea and nausea associated with this enteral route. No morbidity related to tube jejunostomy to be reported during this study.

Following this study, the patients could have tolerated well the oral intake started with fluid and semi solid food in the 3<sup>rd</sup> and 6<sup>th</sup> post-operative days. The mean length of stay is 6.2 days respectively. The jejunostomy tube was taken home, it would be removed on 10<sup>th</sup> post-operative day during outpatient evaluation and no fistula related to the jejunal tube to be reported after tube removal.

## DISCUSSION

Esofago-gastric junction adeno carcinoma including distal part of esophageal and upper part of gastric cancer is one of the most common site of upper gastrointestinal cancer which be found in our clinical practice. Nowadays, surgery is the gold standard for resectable cases in which the patient should fit for major surgery, even in the era of minimal invasive surgery for upper gastrointestinal cancer, this type of resection is the advanced technique in the experienced surgeon.<sup>3,4</sup>

Surgery for esofago-gastric junction cancer has any treatment option for resection, resection with negative margin on the proximal and distal part should be achieved following with lymph node dissection (D dissection). To achieved the R 0 resection margin, total gastrectomy and reconstruction as an option of major upper gastrointestinal resection should be done.<sup>5</sup> The current issue which could be debatable is when to start the oral intake after total resection of the gastric. In the era of enhanced recovery after surgery protocol for many type of gastrointestinal surgery, it has been recommended to started the oral intake or feeding as soon as the gut work in the first post-operative day.<sup>3,6</sup>

This recommendation lead to better clinical outcome and no evidence of post-operative mortality related to early oral intake. Anastomosis leak, post-operative ileus and infection are the other remaining controversies.<sup>7</sup>

The successful treatment of upper gastrointestinal cancer resection depends on many factors, peri operative

condition, pre-operative morbidity, surgical technique, pre and post-operative nutrition are play an important role of the better clinical outcome after resection and reconstruction. Especially in the centre with low volume type of this type of resection, some limitation in nutritional support after surgery and tolerability factor of the patient, we should choose a nutrition access to maintain the enteral route early in the post-operative period as it will require the stable haemodynamic condition.<sup>6,8,9</sup>

Nowadays, in our country with better health insurance covering especially in the nutritional support for peri operative period, it might still have many limitation, although the supportive parenteral nutrition has been supported by the insurance, we must have started to make a strategy on reducing the total cost for the whole peri operative care although they were not enough data about the cost benefit ratio in comparing these both nutrition access.<sup>7,9</sup>

In the era of enhanced recovery surgery (ERAS) for upper gastrointestinal surgery, early gut feeling is the preferred option the enhanced the better clinical outcome of the patients. Giving the oral intake following major resection of the esofago gastric cancer was not that easy to be practiced routinely. Combination with the other route like jejunal feeding tube could be feasible and safe with close monitoring of the jejunal tube so the morbidity related to this feeding abscess will be decreased.<sup>10</sup>

## CONCLUSION

Although it still remains controversial, feeding jejunostomy tube was safe, feasible and has been tolerated well on esofago-gastric cancer patients undergoing resection and reconstruction.

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