

Esophageal Carcinoma Questioning the Benefit of Multiorgan Resection in Case of Advanced Distal Esophageal Carcinoma – Case Report

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1. Summary

Distal esophageal carcinoma is in most cases adenocarcinoma, very rarely cases with metaplasia, many times with spreading into cardia of stomach. This article is questioning whether despite of local advanced findings, when the surgical treatment is possible by multiorgan resection, has benefit for patient, when statistically the survival rate is very short (in comparison with patients treated chemotherapy and radiotherapy without surgical treatment). This cost comes with a question despite of high surgical risk, mortality and morbidity.

2. Introduction

Adenocarcinoma of the esophagus cancer most commonly occurs in the distal esophagus and gastro-esophagus junction (GEJ). It is 4 times more common among White than Black people. Alcohol is not an important risk factor, but smoking is contributory. Over the last 30 years, it has become much more common that SCC of the esophagus. Esophageal cancer is a deadly malignancy with very low survival, even with treatment. In the United States, esophageal cancers represent the fifth most common gastrointestinal cancer, with an estimated 16,940 cases per year, and are the sixth most common cancer worldwide. Histologically, the majority of esophageal cancers are divided into squamous cell carcinoma (SCC) and adenocarcinoma (ADCA). In the past 3 decades, these carcinomas have been respectively decreasing (less than 30%) and increasing (more than 60%) in incidence in the United States. When stratified by anatomical location, the incidence of adenocarcinoma of the

distal esophagus and gastroesophageal junction (GEJ) continues to increase rapidly due to Barrett's esophagus [1].

3. Etiology

The 2 main types of oesophageal cancer – squamous cell cancer and adenocarcinoma.

The causes of esophageal carcinoma

- Smoking – causes around 35 out of 100 oesophageal cancer cases (around 35%)
- Barrett metaplasia
- high body mass index
- gastroesophageal reflux disease (GERD)
- low fruit and vegetable diet
- radiotherapy - radiotherapy for other cancers slightly increases your risk of oesophageal cancer
- hot drinks

4. Barret Metaplasia

Approximately 60% of adenocarcinoma of the distal esophagus and, more typically, GEJ cases arise from Barrett esophagus metaplastic epithelium. Barrett's esophagus is a condition in which the flat pink lining of the swallowing tube that connects the mouth to the stomach (esophagus) becomes damaged by acid reflux, which causes the lining to thicken and become red. Between the esophagus and the stomach is a critically important valve, the lower esophageal sphincter (LES). Over time, the LES may begin to fail,

leading to acid and chemical damage of the esophagus, a condition called gastroesophageal reflux disease (GERD). GERD is often accompanied by symptoms such as heartburn or regurgitation. In some people, this GERD may trigger a change in the cells lining the lower esophagus, causing Barrett's esophagus [2].

5. Clinical Symptomatology

The most common clinical presentation of both esophageal adenocarcinoma and squamous cell carcinoma is progressive are

- a) solid food dysphagia
- b) obstruction and dysphagia to liquid manifests in advanced stages - due to locally advanced cancer
- c) cachexia and substantial weight loss - consequences of dysphagia
- d) retrosternal discomfort
- e) burning sensation
- f) hematemesis
- g) melena
- h) anemia symptoms
- i) regurgitation

6. Clinical Examination of Esophageal Carcinoma

1. esophago-gastroscopy
2. biopsy – to provide sufficient histological material with a higher accuracy of obtaining a correct diagnosis (one biopsy has 93% accuracy, four biopsies have 95% accuracy, and seven biopsies have 98% accuracy)
3. endoscopic ultrasound (EUS) - the standard of therapy technique for locoregional staging, with up to 90% accuracy in assessing tumor depth and locoregional and mediastinal lymph nodes involvement.
4. positron emission tomography CT (PET/CT) – evaluates distant metastases. Adenocarcinoma frequently metastasizes to intrabdominal sites, whereas squamous cell carcinoma is usually intrathoracic. Picus established CT criteria for resectability of the tumor. Picus' angle was defined as angle of contact of tumor and thoracic aortic circumference which was classified as the following; 0: no contact or $< 45^\circ$, 1: 45° - 90° , 2: 90° - 180° , 3: $> 180^\circ$ which the criteria of invasion is angle more than 90° [3].
5. cardio ultrasonography
6. bronchoscopy – to evaluate the deviation of the main bronchus, bacterial cultivations

7. TNM classification of esophageal carcinoma

7.1. Tumour (T)

There are 4 stages of tumour size in oesophageal cancer - T1 to T4.

1. T1 means the cancer has grown no further than the layer of supportive tissue (submucosa). It's split into 2 further stages, T1a

and T1b:

- T1a means the cancer is in the inner layer (mucosa) or thin muscle layer of the oesophagus wall
- T1b means the cancer has grown into the supportive tissue (submucosa)

2. T2 means the cancer has grown into the thick muscle wall of the oesophagus.

3. T3 means the tumour has grown into the membrane covering the outside of the oesophagus (adventitia).

4. T4 means the tumour has grown into other organs or body structures next to the food pipe. It's divided into T4a and T4b:

- T4a means the cancer has grown into the tissue covering the lungs (pleura), the outer covering of the heart (pericardium), the muscle at the bottom of the rib cage (diaphragm), or the tissue lining the abdomen (peritoneum)
- T4b means that the cancer has spread into other nearby structures such as the windpipe (trachea), a spinal bone (vertebra) or a major blood vessel (the aorta).

7.2. Node (N)

There are 4 possible stages describing whether the lymph nodes contain cancer - N0 to N3.

1. N0 means there are no lymph nodes containing cancer cells.
2. N1 means there are cancer cells in 1 or 2 nearby lymph nodes.
3. N2 means there are cancer cells in 3 to 6 nearby lymph nodes.
4. N3 means there are cancer cells in 7 or more nearby lymph nodes.

7.3. Metastasis (M)

There are 2 stages of metastasis.

- M0 means the cancer has not spread to other organs.
- M1 means the cancer has spread to other parts of the body [4].

7.4. Locally advanced esophageal cancer treatment

Overall survival was 70% at 1 year, 48% at 2 years, and 26% at 3 years. This case series of patients treated with chemoradiation for localized esophageal cancer suggest a generally well-tolerated treatment with survival rates after chemoradiotherapy comparable with those seen with surgery. The treatment of esophageal carcinoma includes:

1. chemoradiation therapy - in the local advanced EC, the main direction shifts to neoadjuvant chemotherapy before surgery. widely used alternative treatment to surgical resection in certain patient groups with early esophageal cancer. Average survival is 10.8 months [5].
2. recanalisation - by laser destruction and insertion of endoluminal stent (from practical experiences there is possibility of dislocation of the stent into the stomach)

3. radiofrequency ablation

4. nutrition jejunostomy or gastrostomy

All these treatment modalities ensure the nutrition of the patient and partially in renewing the peroral intake the methods increase the survival quality.

8. Case Report

59-year patient (doctor) with diagnosis of advanced carcinoma of distal esophagus with spreading to cardia of stomach and massive lymphadenopathy and CT suspicious tumorous of metastatic lymph nodes, edges not clear, in pancreas and hilus of the spleen. Therefore the patient knew the prognosis of survival, he denied chemotherapy and radiotherapy, because after that only a small percentage of cases are able to undergo the surgical treatment. Coincidence of the social factors such as patient-doctor, his daughter schoolmate and experiences with the surgical oncologic treatment went to the decision to trustfully undergo the surgical treatment as a first and only choice. From professional point of view after clinical findings, the first opinion of surgeon was, that the tumor is incurable. Patient had dysphagia grade IV, cachexia, but cardio-pulmonary compensated with a good sports condition. Therefore after sufficient consideration of clinical finding and examinations the surgeon came to the decision of surgical treatment with evaluating the finding during the surgery. The day of the surgery the patient conciously asked to “rather die on the surgical table than not to do anything”. Doctor should though make decisions according to professional knowledge, and not patient’s will.

Peroperative findings was advanced carcinoma of distal esophagus with spreading to stomach cardia with massive lymphadenopathy creating huge tumorous mass including distal pancreas and hilus of the spleen (Figure 1). Bearing all oncologic aspects in mind and statistics of the survival in such advanced findings, there was surgical decision for en-bloc resection of distal esophagus, stomach cardia, distal pancreas and spleen through right-side thoraco-phrenolaparotomy (Figure 2 and 3), using selective pulmonary intubation. Followed by reconstruction of the spared part of stomach used for end-to-end esophago-gastro anastomosis after Kocher maneuver of duodenum mobilisation, extramucous pyloroplasty (Figure 4 and 5). Peroperatively inserted 3-way gastro-jejunal tube, drainage of left subfrenium and subhepatally on the right, drainage of the thorax (Figure 6).

Patient after surgery without any complications, without pancreatic leak, drainage removed after findings of negative amylases in serous production, 10th postoperative day patient underwent control CT with peroral contrast to exclude leak of esophago-gastro anastomosis. Discharged on 15th day after the surgery. Patient denied the postoperative chemoradiotherapy.

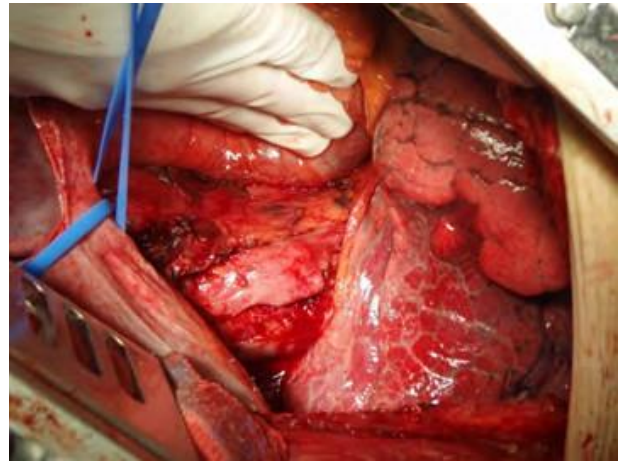


Figure 1: Peroperative findings of malignant tumor of distal esophagus and intrathoracic lymphadenopathy



Figure 2: En-bloc resection of distal esophagus, stomach cardia, distal pancreas and splenectomy



Figure 3: En-bloc resectate

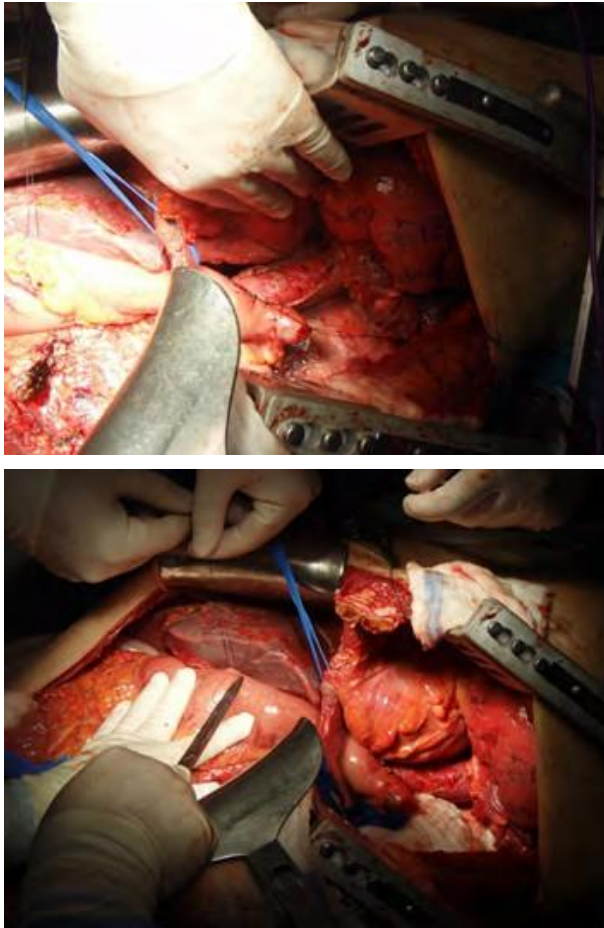


Figure 4 and 5: Reconstruction of the spared part of stomach used for end-to-end esophago-gastro anastomosis after Kocher maneuver of duodenum mobilisation, extramucous pyloroplasty



Figure 6: Anaesthesiologist inserting nutrition gastro-jejunal probe („in the eyes of the surgeon, wishful thinking for praying for the patient’s life“)

9. Discussion

Sometimes the individual decision, which can't be the standard rule, can bring the patient the benefit of quality life, especially in patient-doctor, who realizes that whatever treatment in these cases don't prolong the survival, that it can only increase the quality of the rest of the life, without gastro or jejunostomy and other side effects of chemo and radiotherapy. This patient lived 16 months enjoying his time with family.

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