

# **Localized Esophageal Cancer Treatment Surgery or Chemoradiotherapy?**

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# Introduction

- **Esophageal cancer** is a **highly lethal malignancy**.
- There are approximately **19,260 people** diagnosed with **esophageal cancer** each year in the **United States** and **15,530 deaths** from the **disease**.

# Introduction

- **Local-regional management** esophageal cancer has undergone a **major evolution** over the past 15 years.
- **The low cure rates** after locoregional therapy alone prompted the inclusion of **systemic chemotherapy** in multimodality treatment regimens, to control **distant micrometastatic disease** and **enhance** local radiation effects.

# Squamous cell versus Adenocarcinoma

- Although most clinical studies have **not differentiated** between the two **histologies**, an increasing amount of evidence supports the view that they differ in terms of **pathogenesis, epidemiology, tumor biology, and prognosis.**

# Squamous cell versus Adenocarcinoma

- It remains **unclear** as to **whether** and **how** **histology** should dictate the **therapeutic approach**, and largely due to the lack of data on the impact of histology on **treatment outcomes**, the approach tends to be **similar** for both histologies.

The diagram consists of two vertical light blue rectangular boxes on a dark blue background. Each box is divided into two horizontal sections. To the left of each box is a blue circle with a white border. The left box is for SCC, and the right box is for Adenocarcinoma. The top section of each box contains the response rate after CRT, and the bottom section contains the recommended management.

SCC

**High** PCR after  
CRT

non-operative  
management  
(**optional**)

Adenocarcinoma

**Lower** PCR  
after CRT

Surgery  
**recommended**  
after CRT

# **Thoracic Esophageal Cancer (T3-4 or node-positive disease)**

# Surgery alone

- Only 30 to 40% of patients have potentially resectable disease at presentation.
- Surgery has been the standard treatment for early-stage thoracic esophageal cancer.
- 5-year survival rates with surgery is 30 to 46% for T1N0 cases.
- In node-positive disease is 15%.



# Radiation therapy

- **Modern radiation techniques** (three-dimensional conformal radiation therapy [**3D-CRT**], intensity-modulated radiation therapy [**IMRT**]) are associated with **more favorable toxicity profiles** than **before**.

# Radiation therapy alone

- **Success rate of advanced** radiation technology illustrated by a Chinese trial in which surgery was compared with RT alone in 269 patients with esophageal SCC.
- **Three-** and **five-year** overall survival rates in the RT alone group (56 and 35%, respectively) were **not significantly** different from those in the surgery group (62 and 37%, respectively).

Sun XD, Yu JM, Fan XL, et al. [Randomized clinical study of surgery versus radiotherapy alone in the treatment of resectable esophageal cancer in the chest]. Zhonghua Zhong Liu Za Zhi 2006; 28:784.

# Preoperative chemoradiotherapy

- **Several trials** and **meta-analyses** have demonstrated **better** survival with **preoperative concurrent chemoradiation** as compared with **local therapy alone**, and this approach is generally **preferred** for potentially **resectable stage T3 or 4**, or **node-positive** localized cancer of the thoracic esophagus.

# Preoperative chemoradiotherapy

- At least **seven** trials have directly compared surgery **with** or **without** preoperative **CRT** for patients with potentially **resectable** esophageal carcinoma.
- **Three studies** demonstrated a significant **survival benefit** from **combined modality** therapy, all using a **concurrent** rather than sequential approach.

# Necessity for surgery in chemoradiotherapy responders

- **50% of patients** with SCC and **25% AC** have a **pCR** after **neoadjuvant CRT**.
- An important point is that the optimal way to define "**complete CRT responders**" is not established.
- **At some institutions**, an EUS-guided FNA biopsy is routinely undertaken, but **others advise only upper endoscopy with biopsy**.
- **FDG-PET/CT** advised to interval **metastases detection**.

# Squamous cell carcinoma

- **Definitive CRT** provides **long-term survival** in up to **27% of patients** with SCC a result that is **not dissimilar** to that achieved with **preoperative CRT** followed by **surgery**.

# Squamous cell carcinoma

- **At least two randomized trials directly comparing CRT alone with trimodality therapy (CRT followed by surgery) have failed to demonstrate better survival, although both show better locoregional control and a lesser need for palliative procedures when surgery is a component of multimodality treatment.**

# Adenocarcinoma

- There are **no** randomized trials directly comparing **trimodality** versus bimodality(CRT alone) therapy in ACs.
- Some data from **retrospective analyses** suggest **inferior outcomes** in this group with **nonsurgical management**.



# Timing of surgery after chemoradiotherapy

- **five- to seven-week** interval between completion of CRT and surgery is preferred.
- For those who need **extra time** to recuperate from **CRT**, surgery can be delayed.

- **Preoperative CRT benefit** for patients with clinical stage T2N0 tumors is less clear.
- **For adenocarcinoma (AC)** patients, combined modality is better than **resection alone**.
- **Initial resection** is an option for T2N0 **squamous cell carcinomas (SCC)**, especially if **well-differentiated** and **<2 cm** in size.

- **For patients with T1N0** esophageal AC or SCC, surgery or endoscopic resection suggested rather than initial chemotherapy or CRT.
- **Definitive CRT** is a reasonable approach for patients who are not surgical or endoscopic resection candidates.

# Role of surgery

- **For clinically resectable AC**, its suggested to inclusion of **surgery** rather than **definitive CRT** alone.
- **For SCC**, nonoperative management is an option for those who have an **endoscopic complete response**, balancing the risks of surgical mortality versus **improved** locoregional control.

# Role of surgery

- For CRT nonresponders, surgery is an important component of therapy for those who are still operable after CRT, regardless of histology.

# Cervical esophageal cancer

- **Cervical esophagus carcinoma** management is more closely related to **SCC** of the **head and neck** than for **malignancies** involving the more **distal portions of the esophagus**.
- In general, **radiation** combined with **chemotherapy** is preferred over **surgery** since survival appears to be the **same** and **major morbidity** is avoided in most.

