

# **Esophageal Cancer Program**

**Levine Cancer Institute**

## **Esophageal Cancer Treatment Categories**

Category	Stage	Treatment
Superficial Tumors	T1a	Endoscopic Therapy
Localized Tumors	T1b T2	Surgery
Locally advanced	T3 or N <sup>+</sup>	Chemo± RT → Surgery
Metastatic	M1	Chemotherapy +/- Radiation

### **Superficial Tumors**

- Endoscopic Ultrasound
- Endoscopic Mucosal Resection
  - Diagnostic (T staging)
  - May be therapeutic for T1a tumors

## Endoscopic Musocal Resection

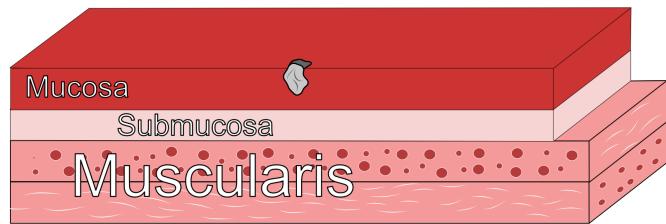


Figure 1: T1 Tumor

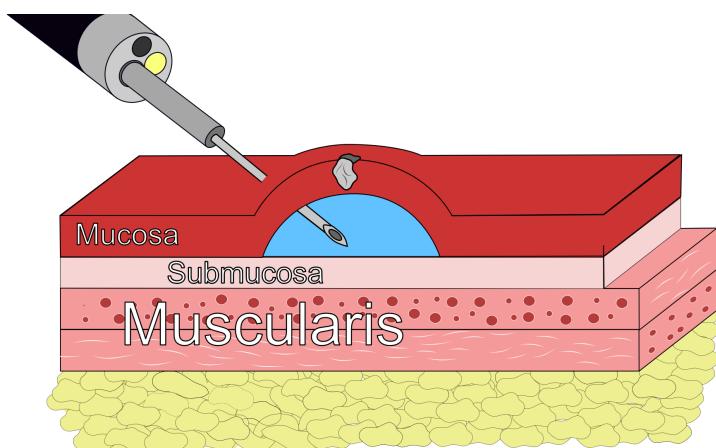


Figure 2: Saline Lift

## Endoscopic Musocal Resection

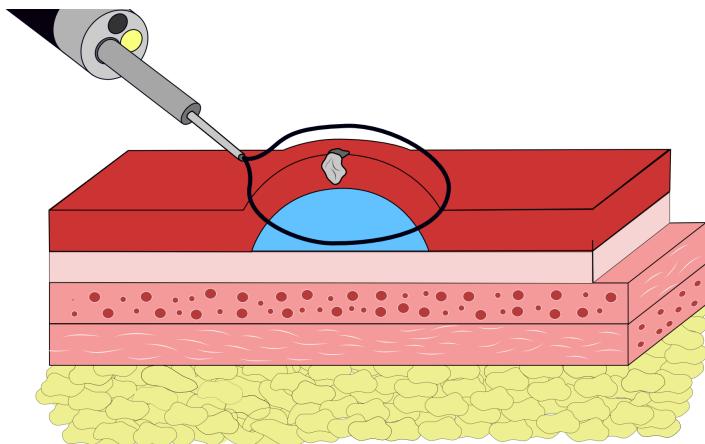
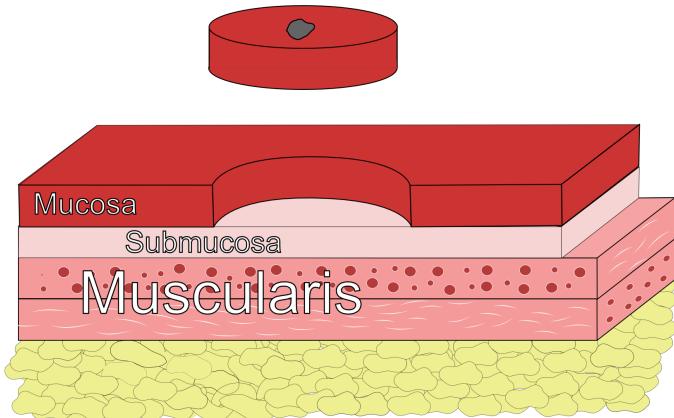


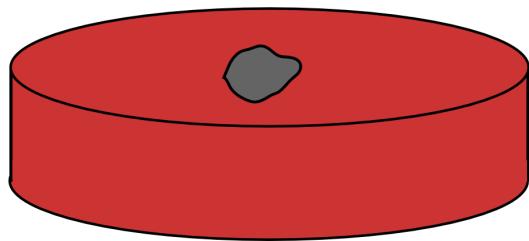
Figure 3: Snare Excision



## EMR Favorable Features

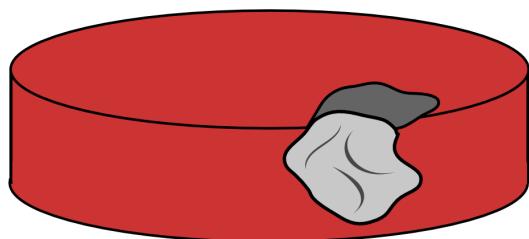
- Clear Margins
- Size <2cm
- No LVI/PNI
- Well-differentiated
- Overall good prognosis

- EGD in 6 months for surveillance



### **EMR Unfavorable Features**

- Involved Margins
- Size >2cm
- Lymphovascular/Perineural Invasion
- Poorly differentiated
- High risk for recurrence
- EGD in 3 months for surveillance

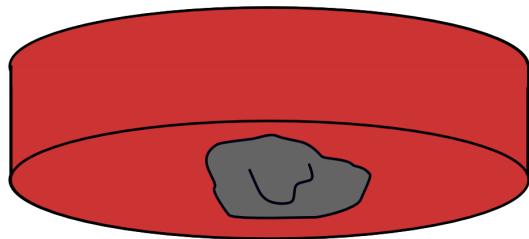


## **EMR Deep Positive Margin**

Positive deep margin on EMR: likely understaged.

High risk of lymph node metastasis

Recommendation for Surgery



## **Localized Tumors**

uT2 N0 are candidates for primary surgery. *However:*

- EUS has a 25% rate of understaging uT2 N0 tumors
- Understaged patients treated with surgery need chemo or chemoRT postop

## **Asymptomatic Esophageal Tumors (minimal dysphagia)**

- EUS to distinguish T2 from T3 tumors
- uT2 N0 → CT chest/abdomen/pelvis → Esophagectomy
- uT3 or N1 → PET → neoadjuvant therapy

Patients with dysphagia almost always are T3 tumors (and don't need EUS)

## **Symptomatic Esophageal Tumors (dysphagia)**

Patients with:

- Dysphagia to solids
- Weight loss
- Tumor length >3cm are unlikely to have T1-2 tumors

⇒ Initial evaluation with PET

## **EUS in Patients with Dysphagia**

Memorial Sloan Kettering patients with esophageal cancer:

- 61 with dysphagia, 54 (89%) were found on EUS to have uT3-4 tumors.
- 53 without dysphagia, 25 (47%) were uT1-2 → candidates for primary surgery.

EUS can be omitted for patients with dysphagia,

but is useful in those *without* dysphagia.

(Ripley et al. 2016)

## **Squamous Cell Carcinoma**

Standard Treatment: ChemoRT (CROSS)

- Weekly Carboplatin + Paclitaxel
- 5040 cGy radiation in 28 fractions

CROSS: 49% pCR for squamous cell carcinoma

⇒ Majority never need surgery

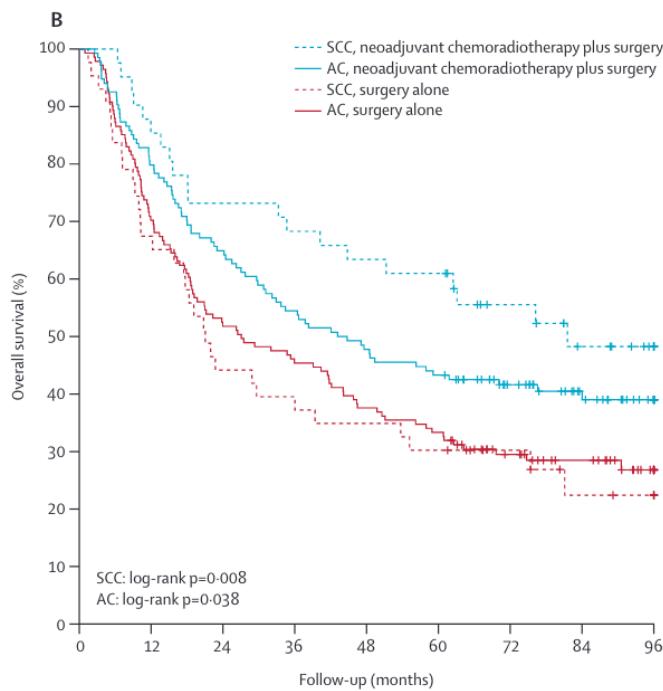


Figure 4: Surgery vs ChemoRT → Surgery by Histology

### Restaging after ChemoRT - SCCa

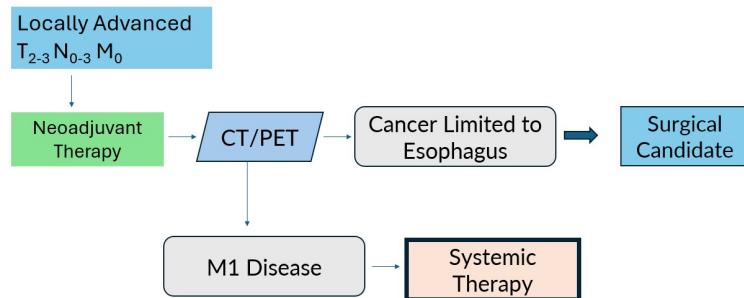


Figure 5: Restaging after ChemoRT

## ChemoRT → Immediate Surgery Strategy



Difficult to justify immediate surgery for squamous cell with 50% pCR rate

## EGD for Restaging after ChemoRT - SCCa

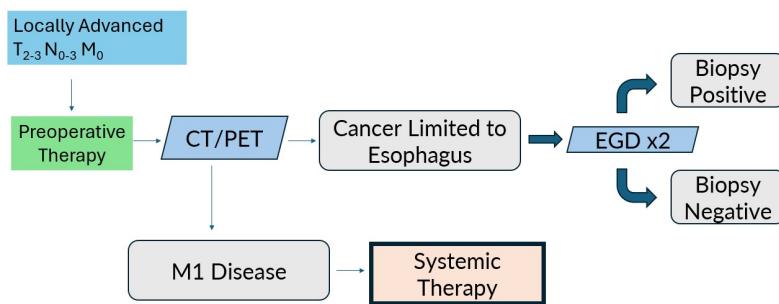


Figure 6: EGD at 6 weeks and 12 weeks

## Positive EGD after ChemoRT

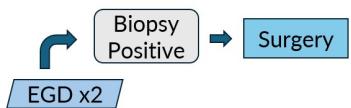


Figure 7: ChemoRT → EGD Positive

## Negative EGD after ChemoRT

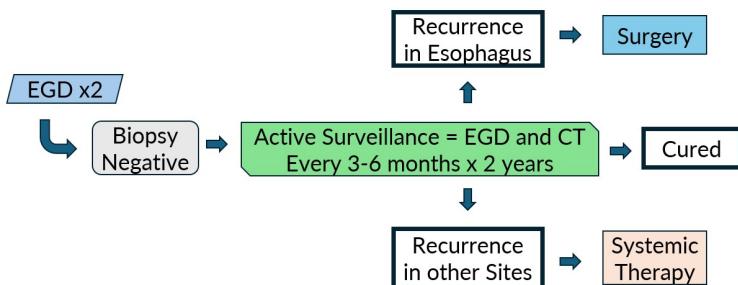


Figure 8: ChemoRT → EGD Negative

## Active Surveillance for SCCa Esophagus

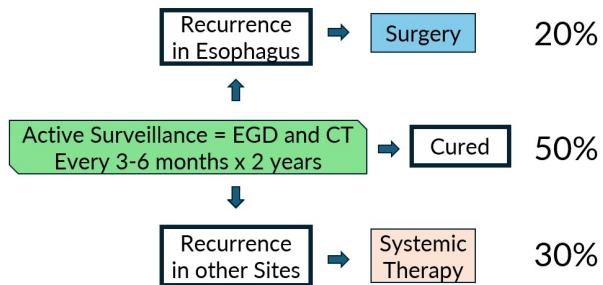
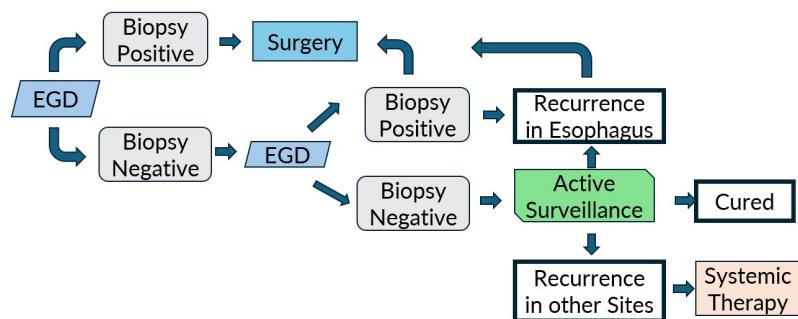


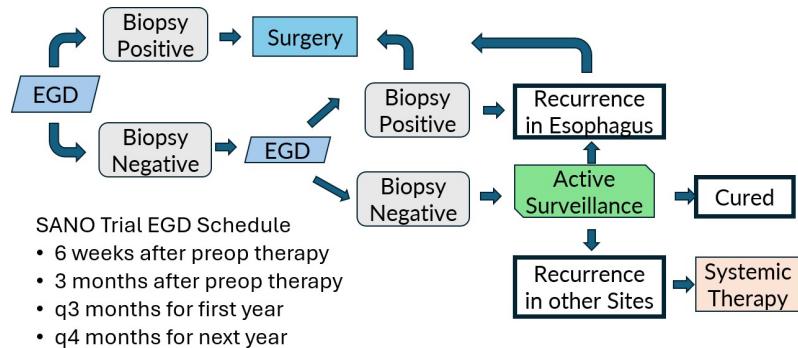
Figure 9: ChemoRT → EGD Negative

## SANO Surveillance Schema



(Wilk et al. 2025)

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(Wilk et al. 2025)

## Adenocarcinoma

CROSS: benefit from preoperative ChemoRT is less dramatic with adenocarcinoma

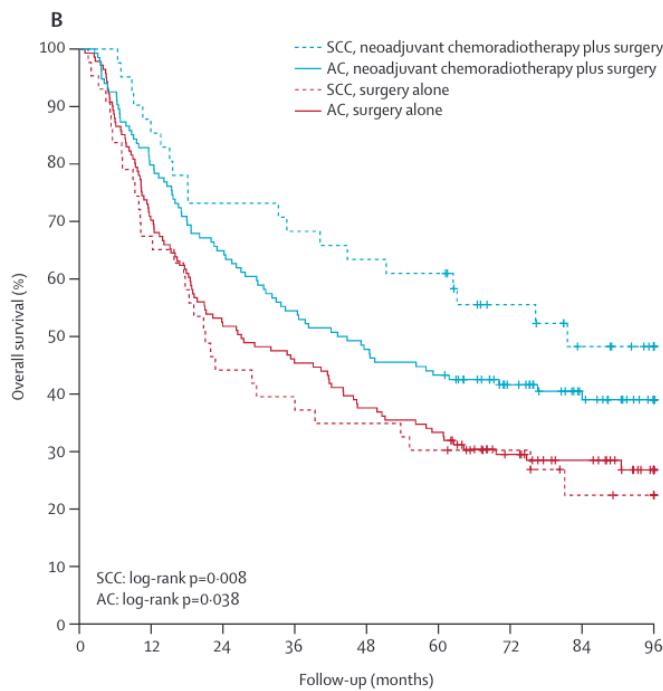
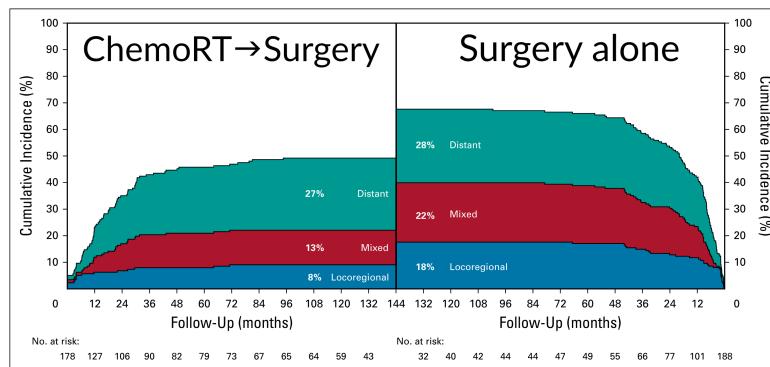


Figure 10: Surgery vs ChemoRT (Adenocarcinoma is solid lines)

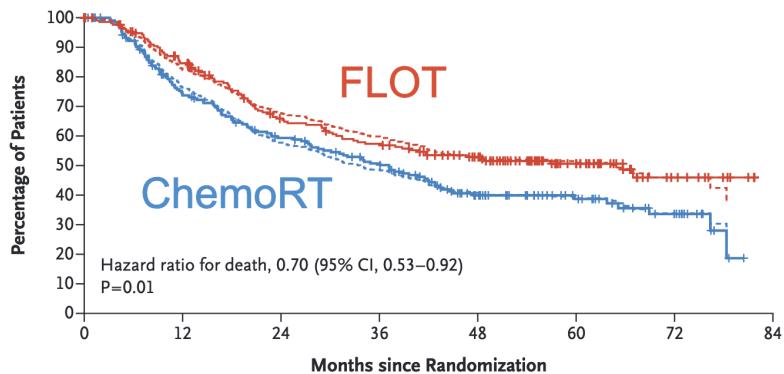
## CROSS Treatment Failures

Primary benefit of ChemoRT is reducing locoregional and mixed failures



(Shapiro et al. 2015)

## **ESOPEC: Periop Chemo (FLOT) vs ChemoRT (CROSS)**



(Hoeppner et al. 2025)

### **Locally Advanced Adenocarcinoma**

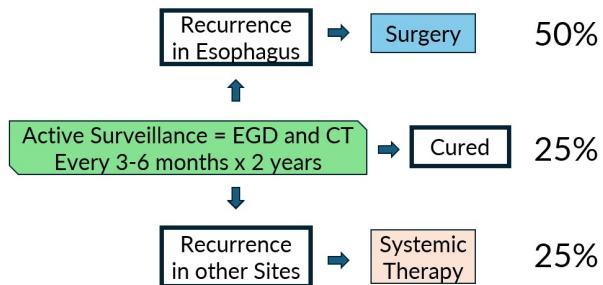
#### **Chemo + Radiation**

- Better tolerated
- Port usually placed
- More dysphagia (last 2 weeks of Tx)
- Dysphagia resolves 2-3 weeks later
- More likely to need feeding tube

#### **Chemotherapy**

- More effective
- More toxicity (neutropenia)
- Port always required
- Eating slowly improves
- Less likely to need feeding tube

## Active Surveillance for Adenocarcinoma after ChemoRT



## Esophagectomy at Carolinas Medical Center

- Minimally-invasive approach
- 500+ cases since 2007 (JCS)
- Laparoscopic/VATS → Robotic
- Anastomotic leak 8%
- 90-day mortality 5.5%

(Lorimer et al. 2019)

## Frailty Assessment



Figure 11: Grip Strength → CT Body Composition for evaluation of frailty

## Body Composition and Age Predict Operative Mortality

(Colcord et al. 2021)



Figure 12: 90-day mortality after esophagectomy =  $f(\text{age} + \text{body composition})$

(Sanderfer et al. 2025)

## Body Composition and Age Predict Operative Mortality

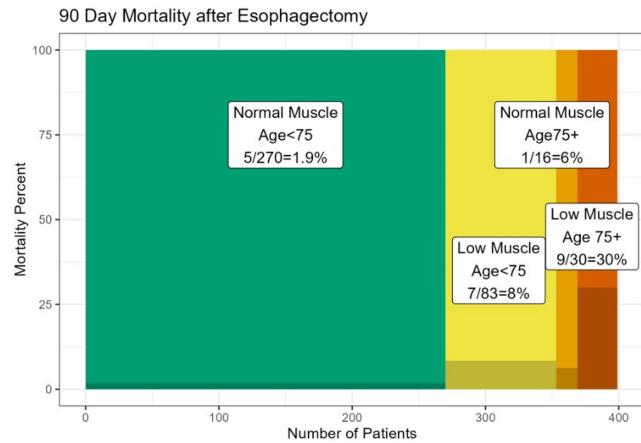


Figure 13: 90-day mortality esophagectomy = $f(\text{age} + \text{body composition})$

## Can Body Composition Predict Benefit of Surgery?

316 esophageal cancer treated initially with chemo + radiation

- Surgery in 254
- No surgery in 62

Cohort stratified by age and body composition

- Low Risk (Lower risk 75%)
- High Risk (Higher risk 25%)

## Survival Benefit of Surgery - Normal Muscle

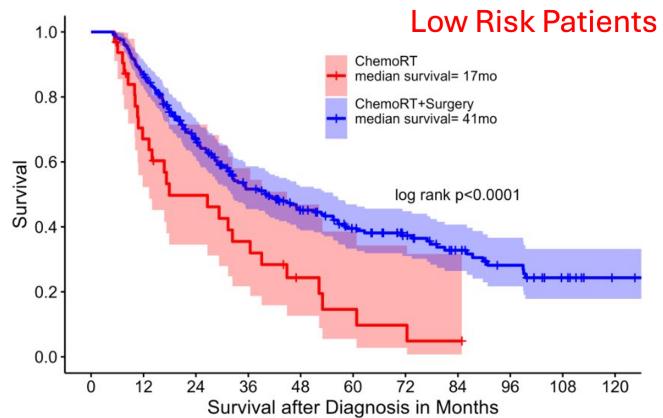


Figure 14: Surgical Risk = $f(\text{age} + \text{bodycomposition})$

## Survival Benefit of Surgery - Low Muscle

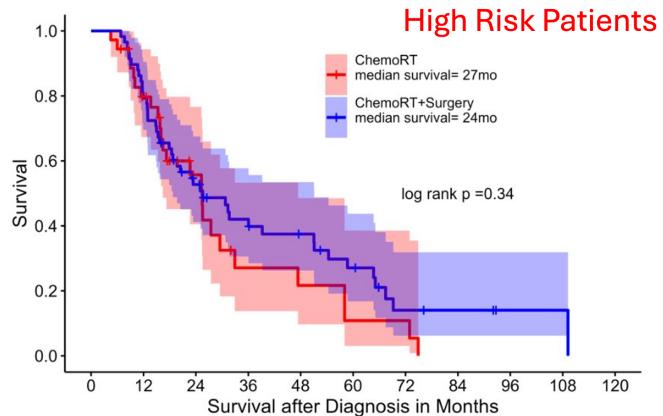


Figure 15: Surgical Risk = $f(\text{age} + \text{bodycomposition})$

## Locally Advanced

Treatment depends upon histology:

Squamous Cell Carcinoma

Adenocarcinoma

## Metastatic

FOLFOX is first-line systemic therapy for metastatic GI cancers

- Dose-limiting toxicity is frequently peripheral neuropathy

## References

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