Superficial Cancer of the Esophagus and GE Junction

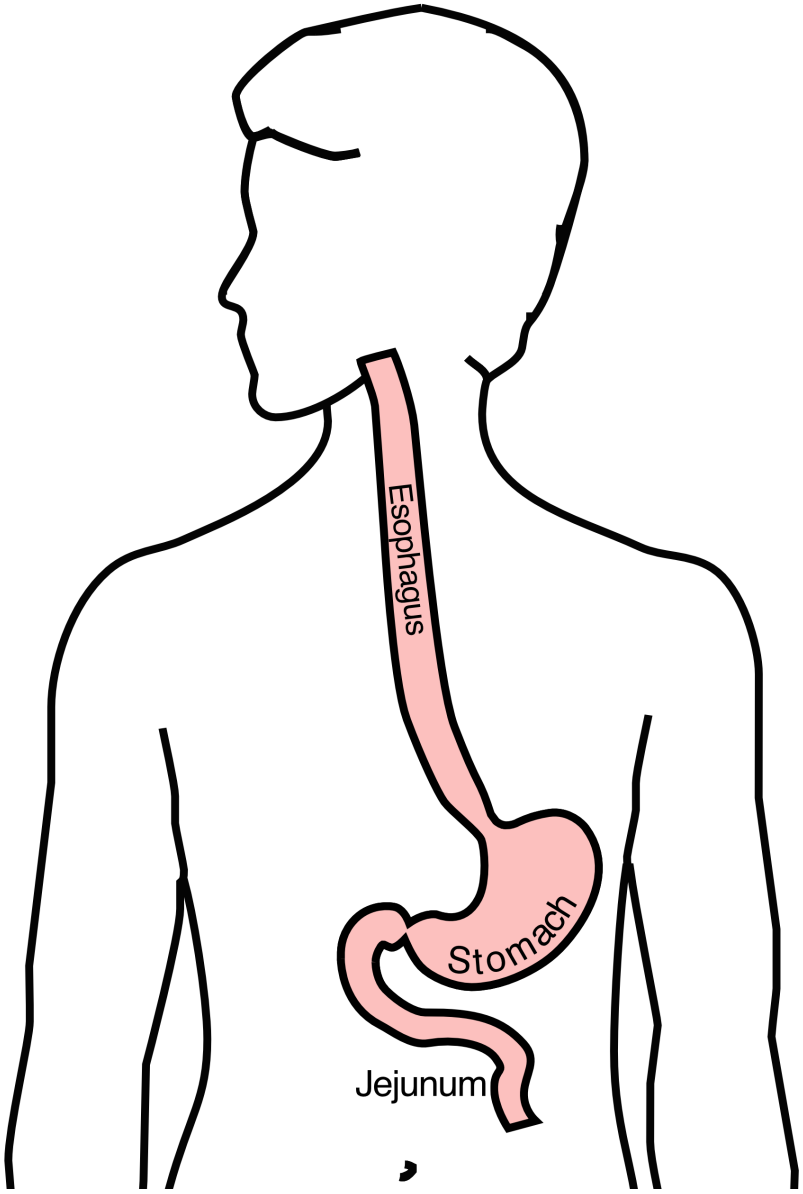
Anatomy

Food moves from the throat

→ esophagus

→ stomach

→ small bowel (jejunum)



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Types of Esophageal Cancer

There are two common types of esophageal cancer

- Adenocarcinoma
- Squamous Cell Carcinoma

In many ways, these to different types of esophageal cancer behave the same.

We will see later in this video, however, that the treatment **can** be different depending upon whether the cancer is adenocarcinoma or squamous cell carcinoma.

Cancer Staging

Staging refers to the tests to determine

- How large is the tumor?
- Has there been spread to lymph nodes?
- Has it spread to other parts of the body?

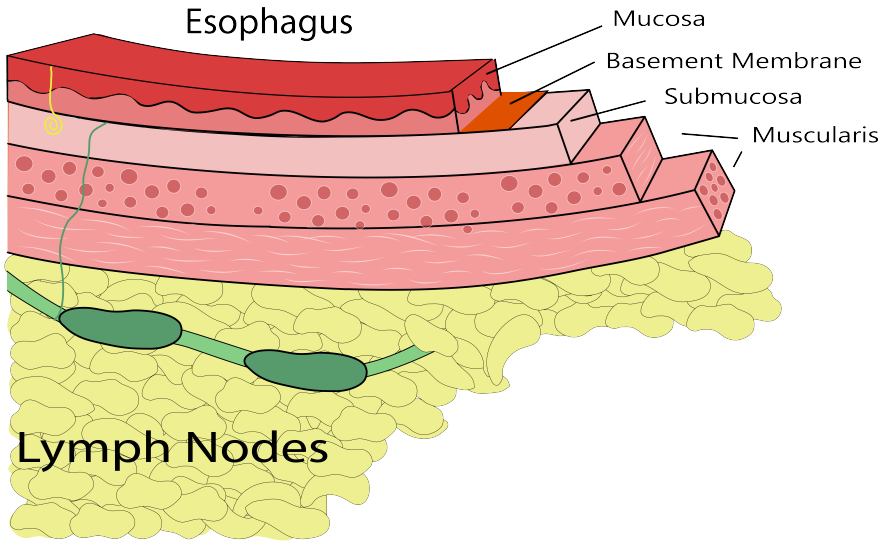
Treatment options depend upon the cancer stage

Esophageal Cancer Staging

- **T** = Tumor - How deep has cancer grown into the wall of the esophagus?
- **N** = Nodes - Has cancer spread to the lymph nodes?
- **M** = Metastasis - Has the cancer spread to other parts of the body? lungs or liver?

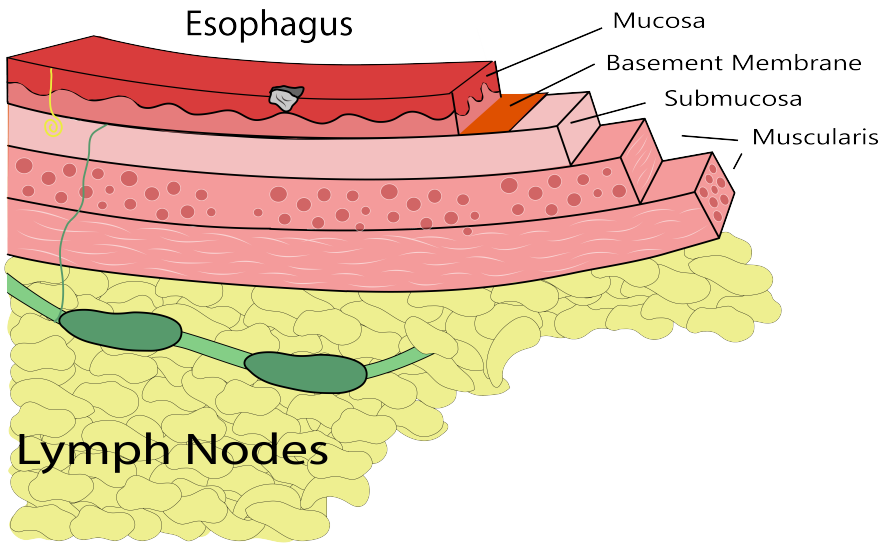
Layers of the Wall of the Esophagus

- Mucosa - Inner layer
- Muscle Wall (muscularis)
- Lymph nodes located in fat outside the muscle



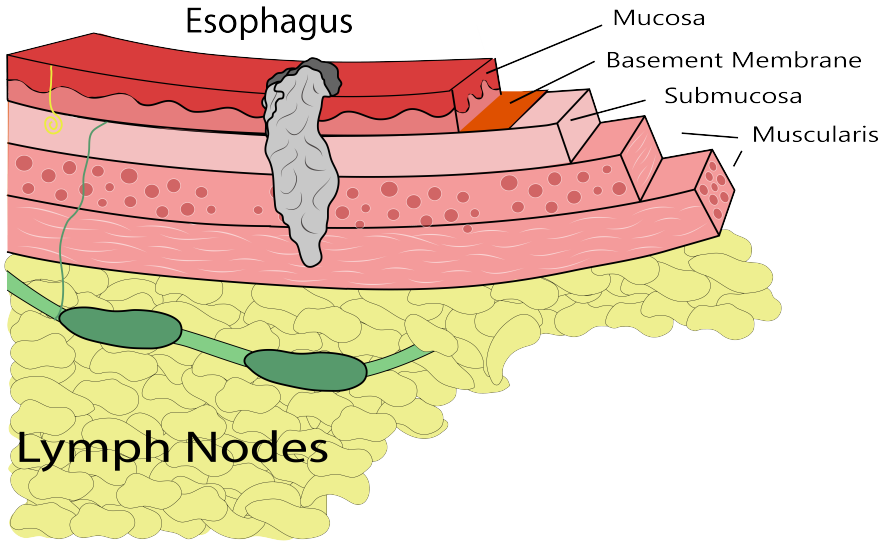
Early Stage Cancers

Cancers start on the very inside of the layer called the mucosa



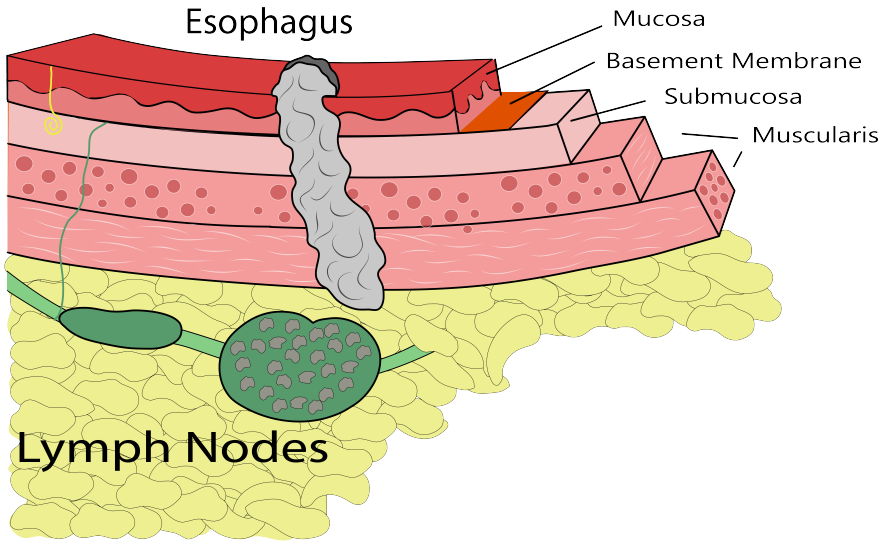
Locally-advanced Cancers

Over time, cancers can grow into the muscular wall



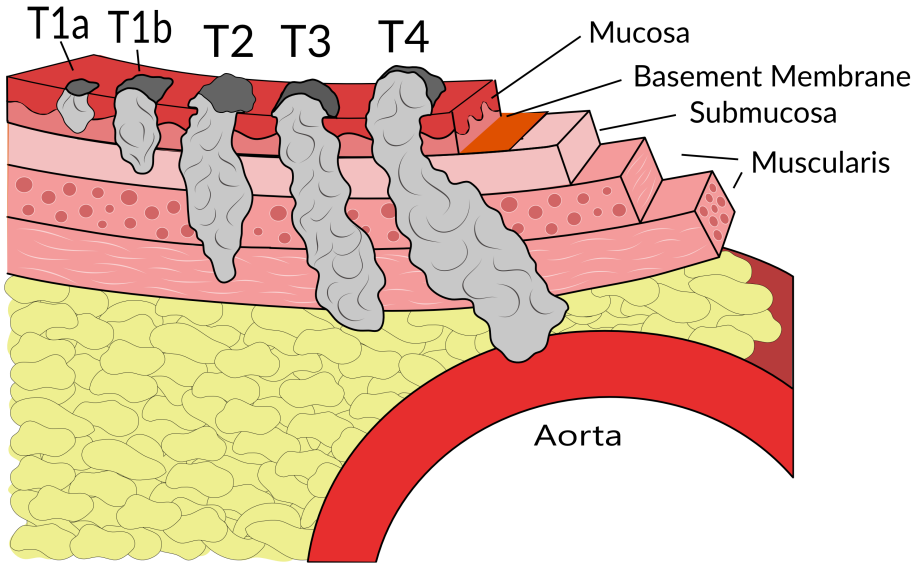
Lymph Nodes

In some cases, cancer cells can break off from the main tumor and spread to lymph nodes



T Stage

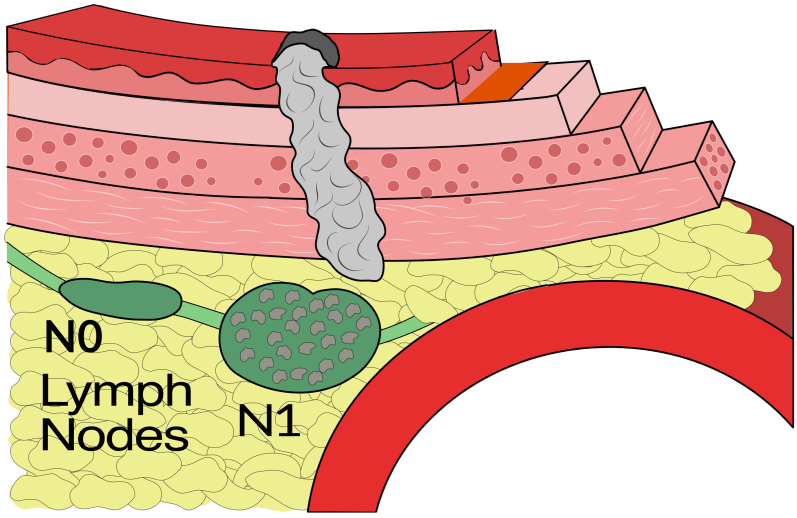
Cancers are categorized based upon the thickness of the tumor, known as the T stage



N Stage

Cancers are categorized by whether there is spread to the lymph nodes.

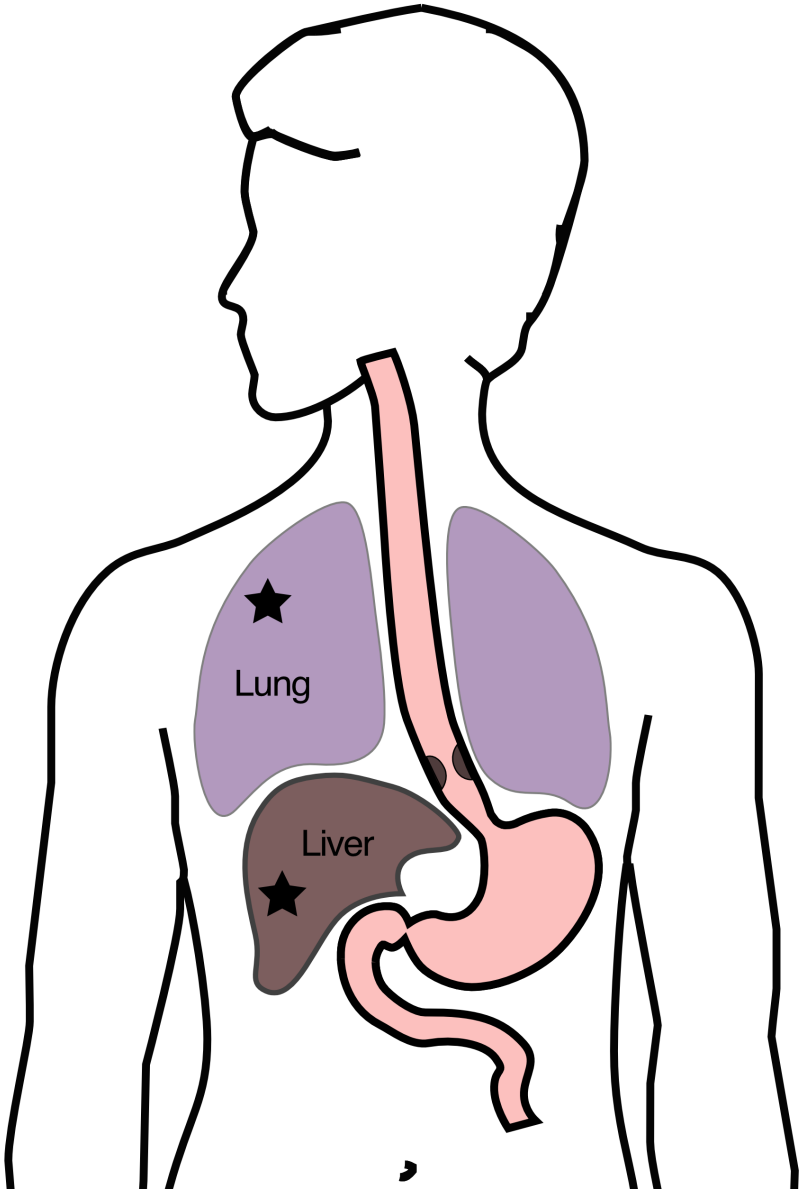
- **N0** cancers have not spread to the lymph nodes
- **N1** cancers have spread to the lymph nodes.



M Stage

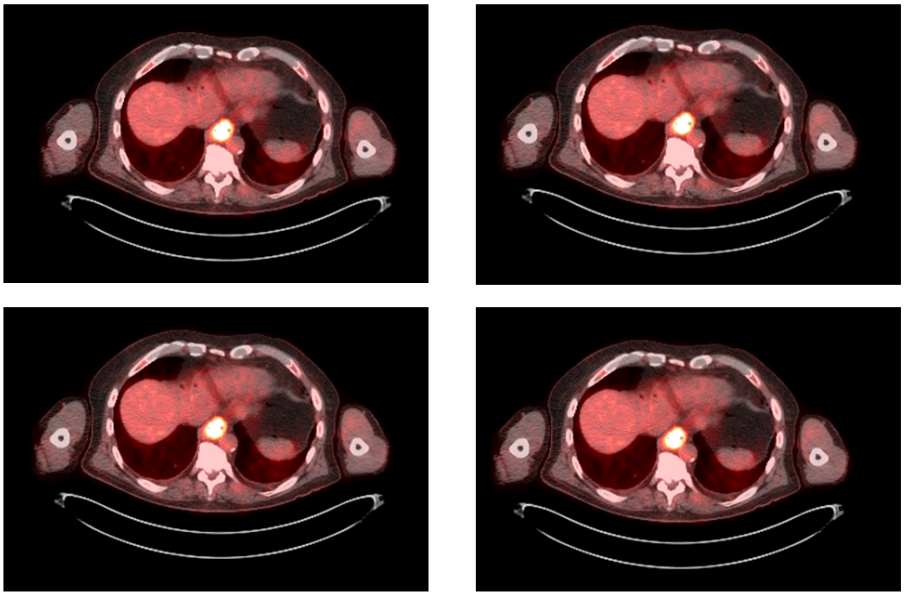
Some cancers can also spread from the esophagus to the lungs or liver

- **M0** cancers have not spread to other parts of the body
- **N1** cancers have spread to other parts of the body such as lungs or liver



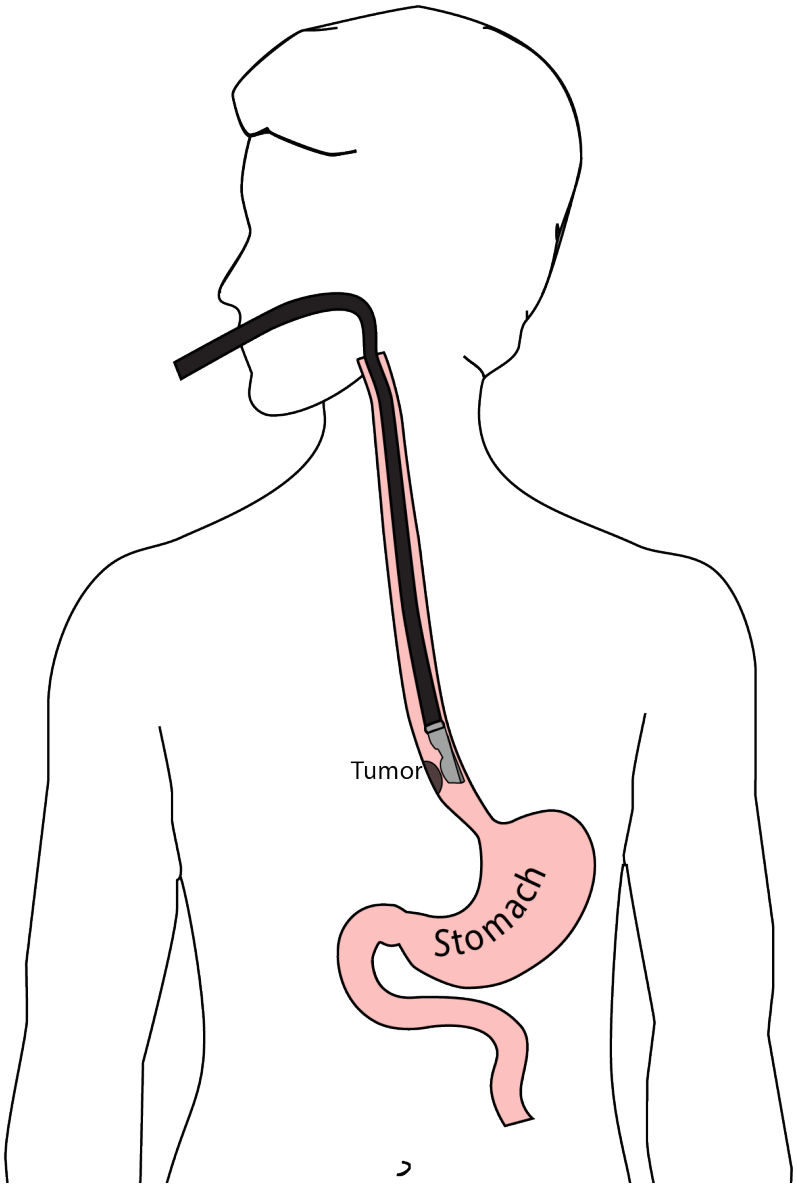
PET scan

A PET scan is similar to a CT scan, and uses a small amount of tracer to light up areas of cancer.



Endoscopic Ultrasound

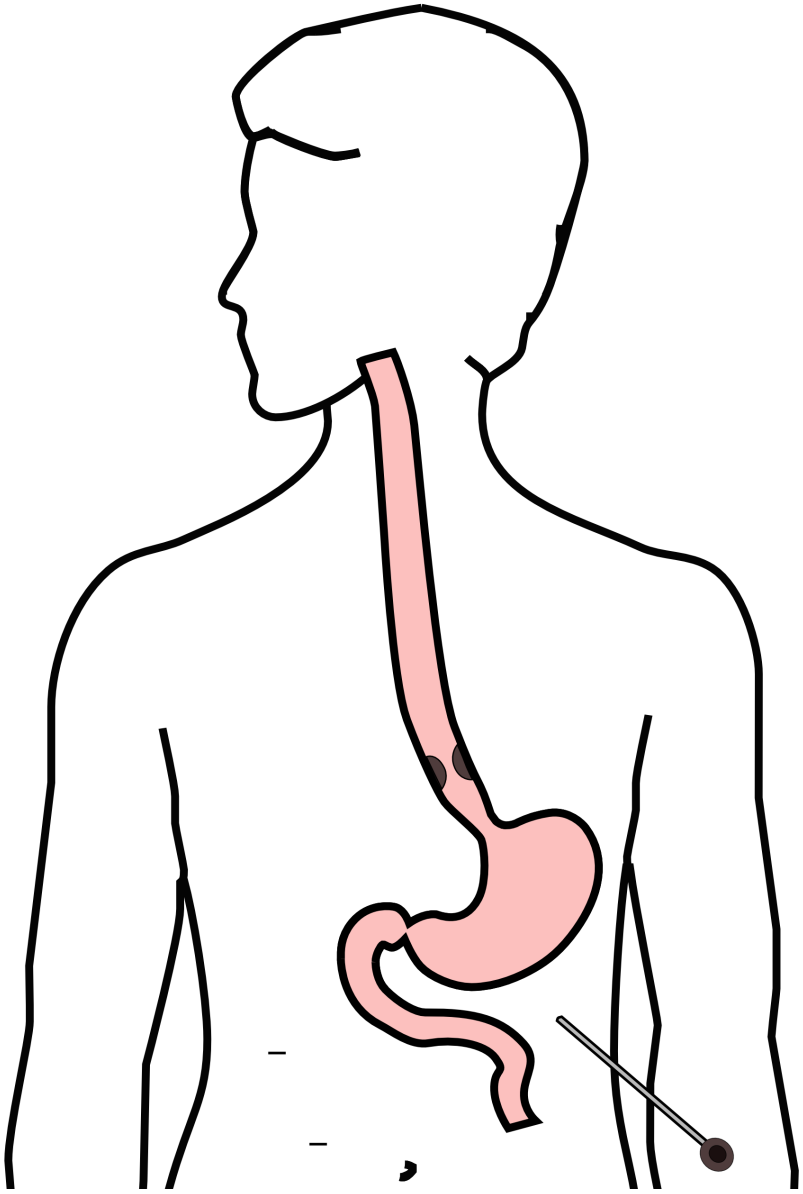
Endoscopic ultrasound (EUS) is a procedure similar to upper endoscopy (EGD) which has an ultrasound probe at the bottom of the scope. This allows measuring the thickness of the cancer. Endoscopic ultrasound can help determine the T stage of the cancer.



Laparoscopy

Some esophageal cancers can spread inside the abdominal cavity. These areas of spread can be very small, as small as a grain of rice.

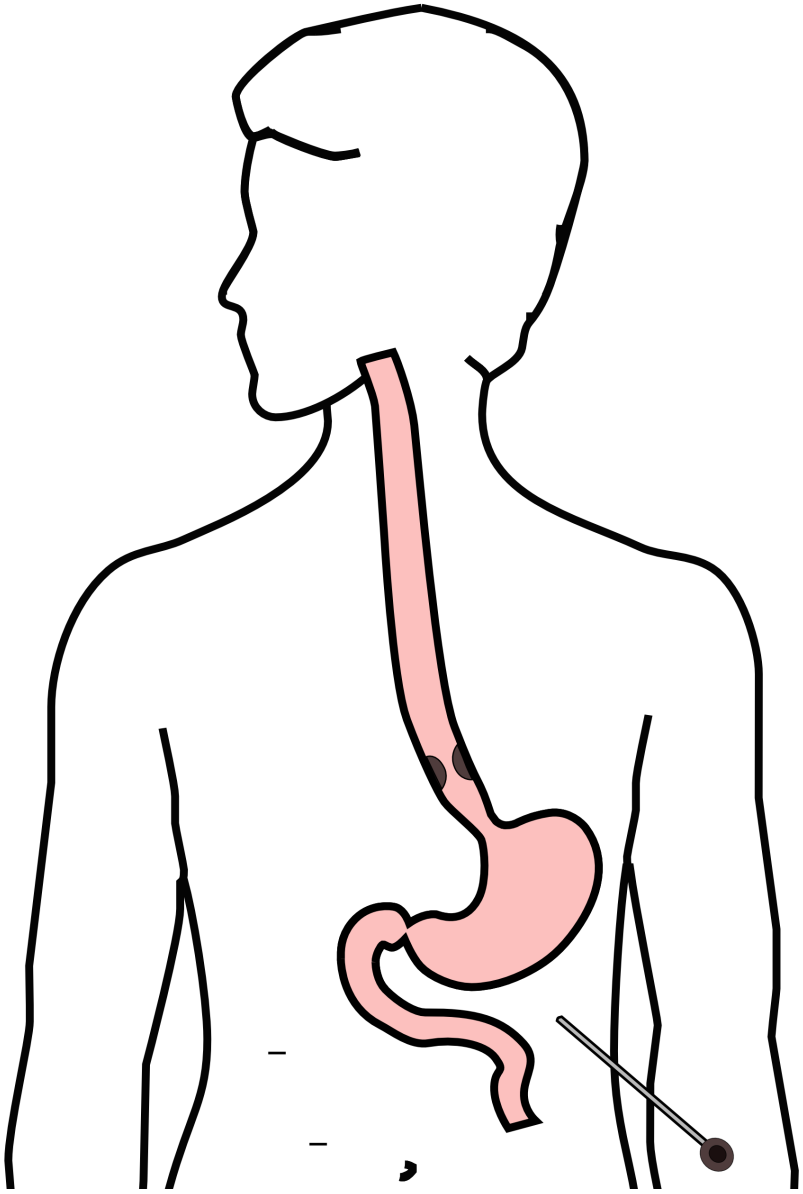
In order to detect spread within the abdominal cavity, a proceduce called a laparoscopy can be performed in some some patients.



Laparoscopy

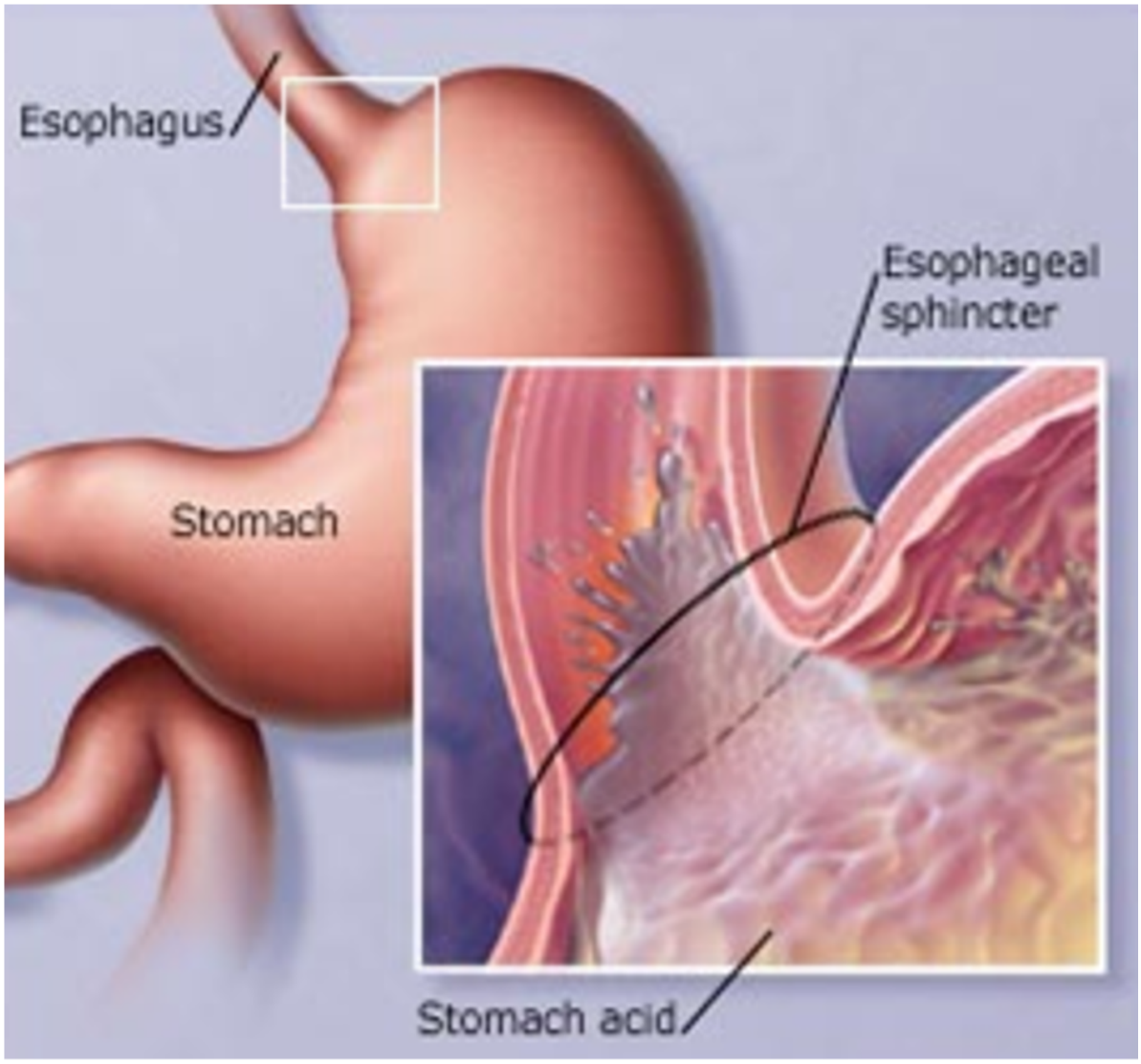
A laparoscopy is performed under a general anesthetic.

- Several incisions 1/4” long
- A telescope is inserted to look inside the abdominal cavity.
- Biopsies can be performed.



Gastroesophageal Reflux

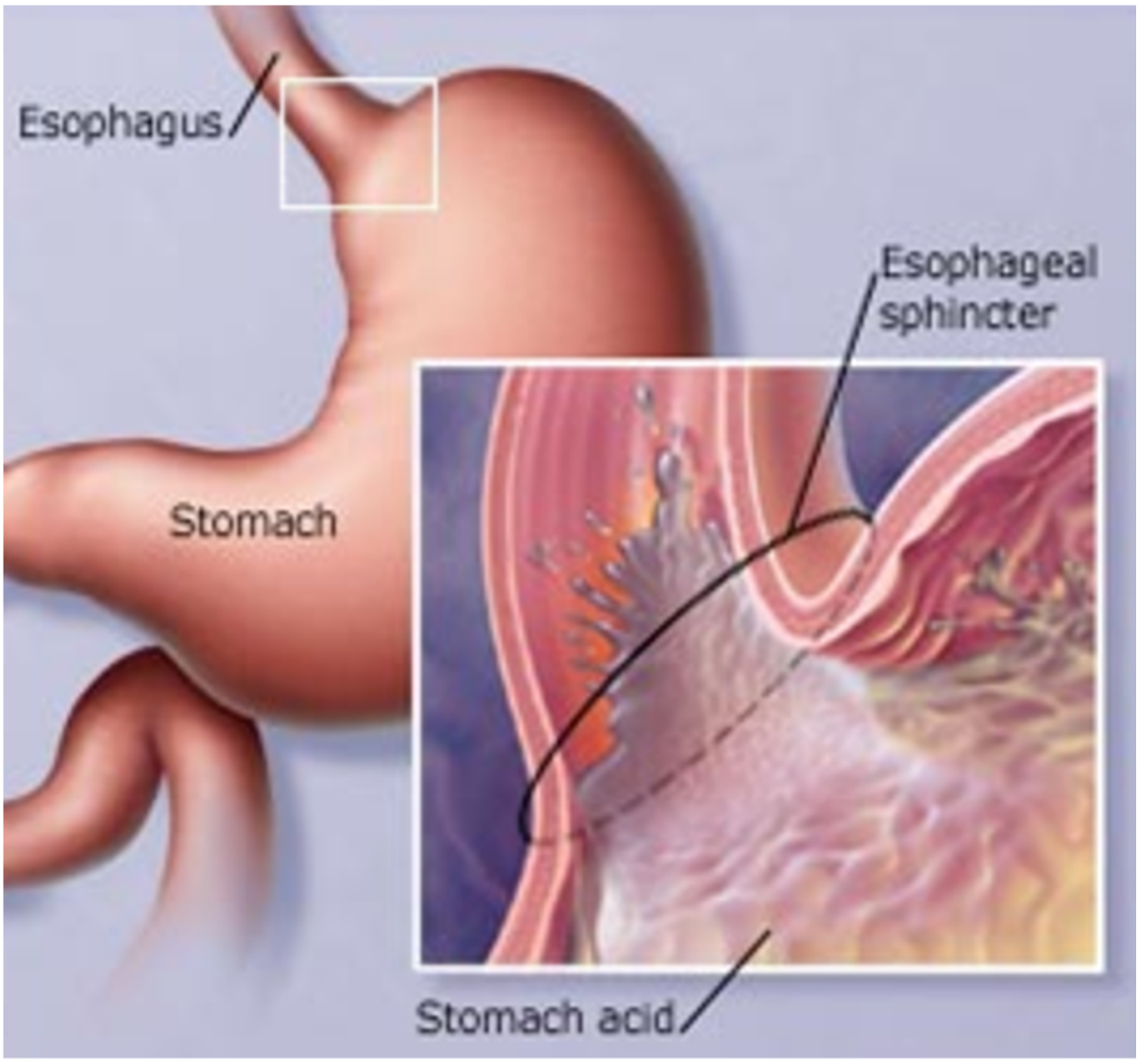
A one-way valve normally keeps acid within the stomach and prevents it from entering the esophagus



Gastroesophageal Reflux

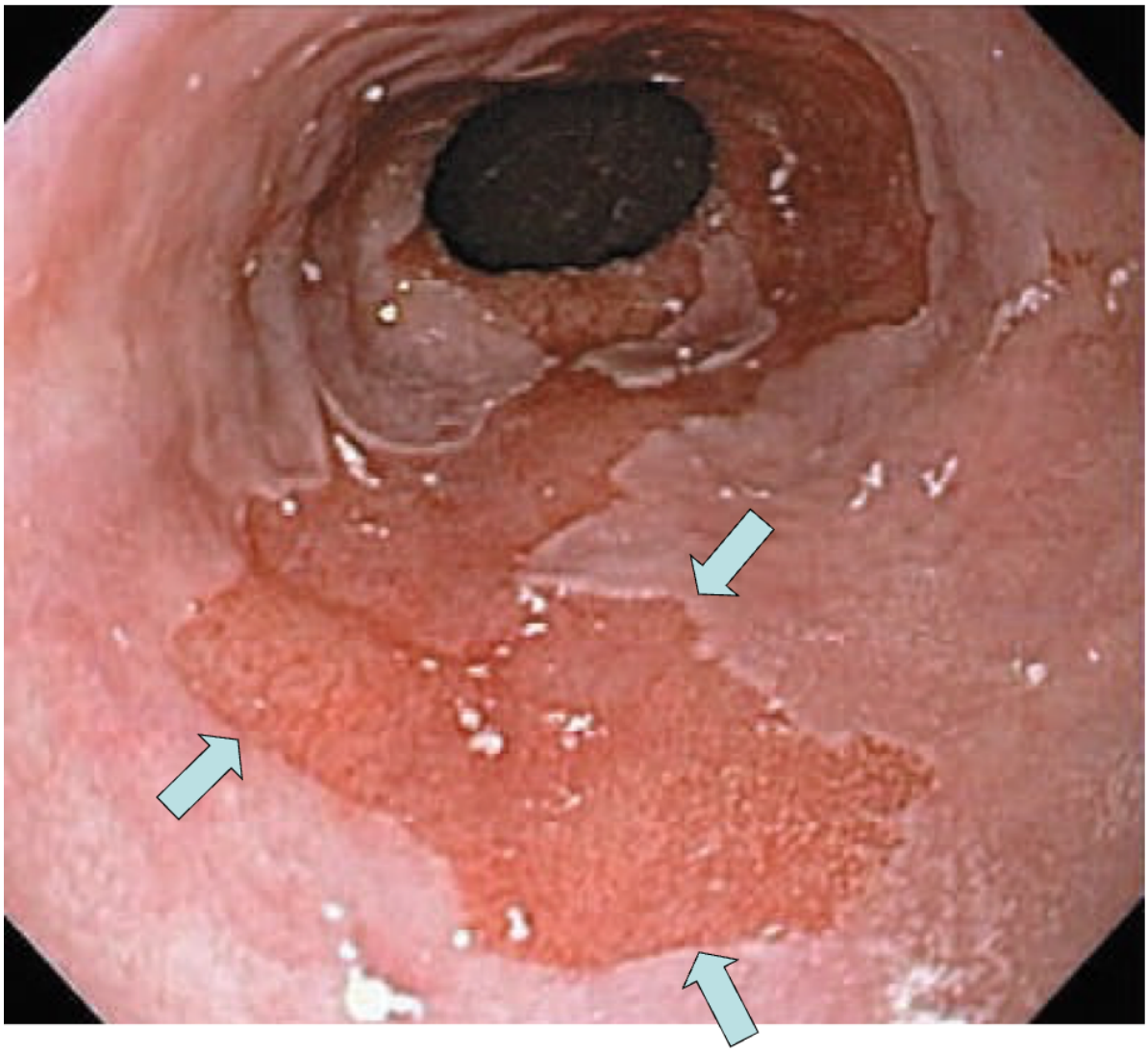
A one-way valve normally keeps acid within the stomach and prevents it from entering the esophagus

If the valve does not work properly, acid can enter the esophagus and cause heartburn and damage to the lining of the esophagus.



Barrett's Espohagus

Over time, the lining of the esophagus undergoes change in response to the acid.



Dysplasia

Over a period of years, pre-cancerous changes can develop within Barrett's esopahgus.

These changes can be seen by the pathologist from biopsies taken from the esophagus

Over time, low-grade dysplasia can progress to high-grade dysplasia

Dysplasia $\rightarrow$ Cancer

Low grade dysplasia: Risk of cancer 0.5% per year

High-grad dysplasia: Risk of cancer 5% per year

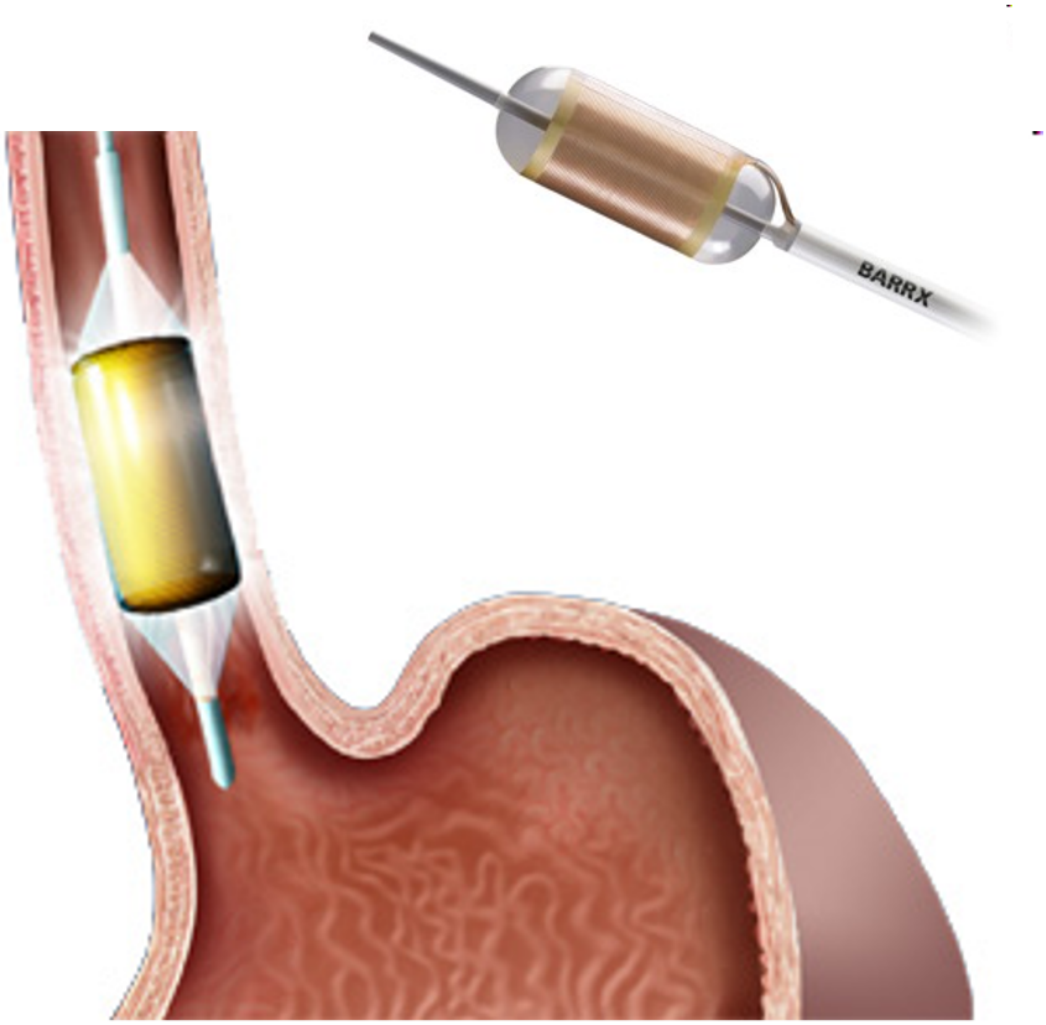
$\Rightarrow$ Surveillance with upper endoscopy is critical

Radiofrequency ablation for Dysplasia

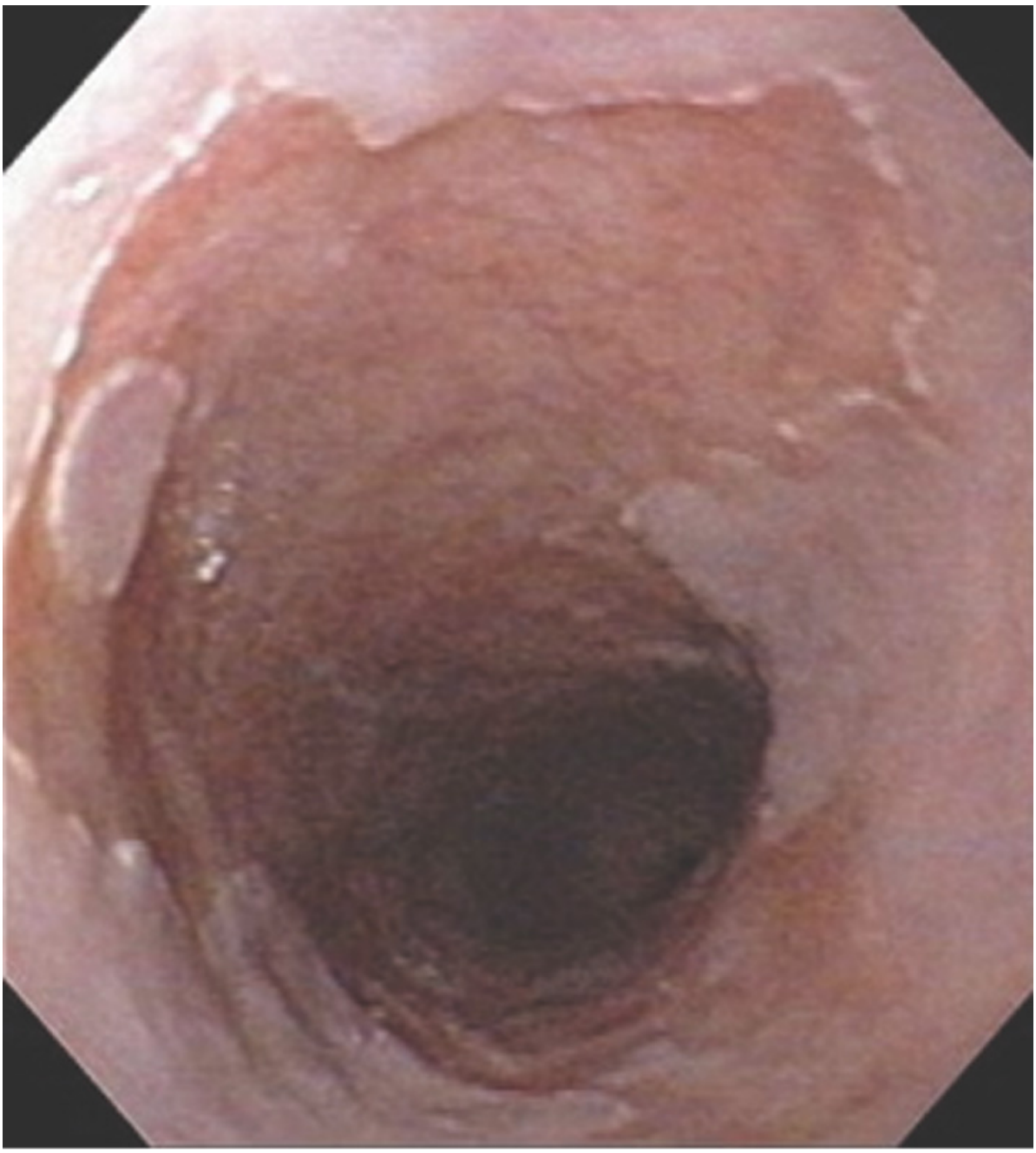
Dysplasia of the esphagus can be treated with destroying the mucosa, the inner layer of esophgus

Ablation of the mucosa with microwave energy

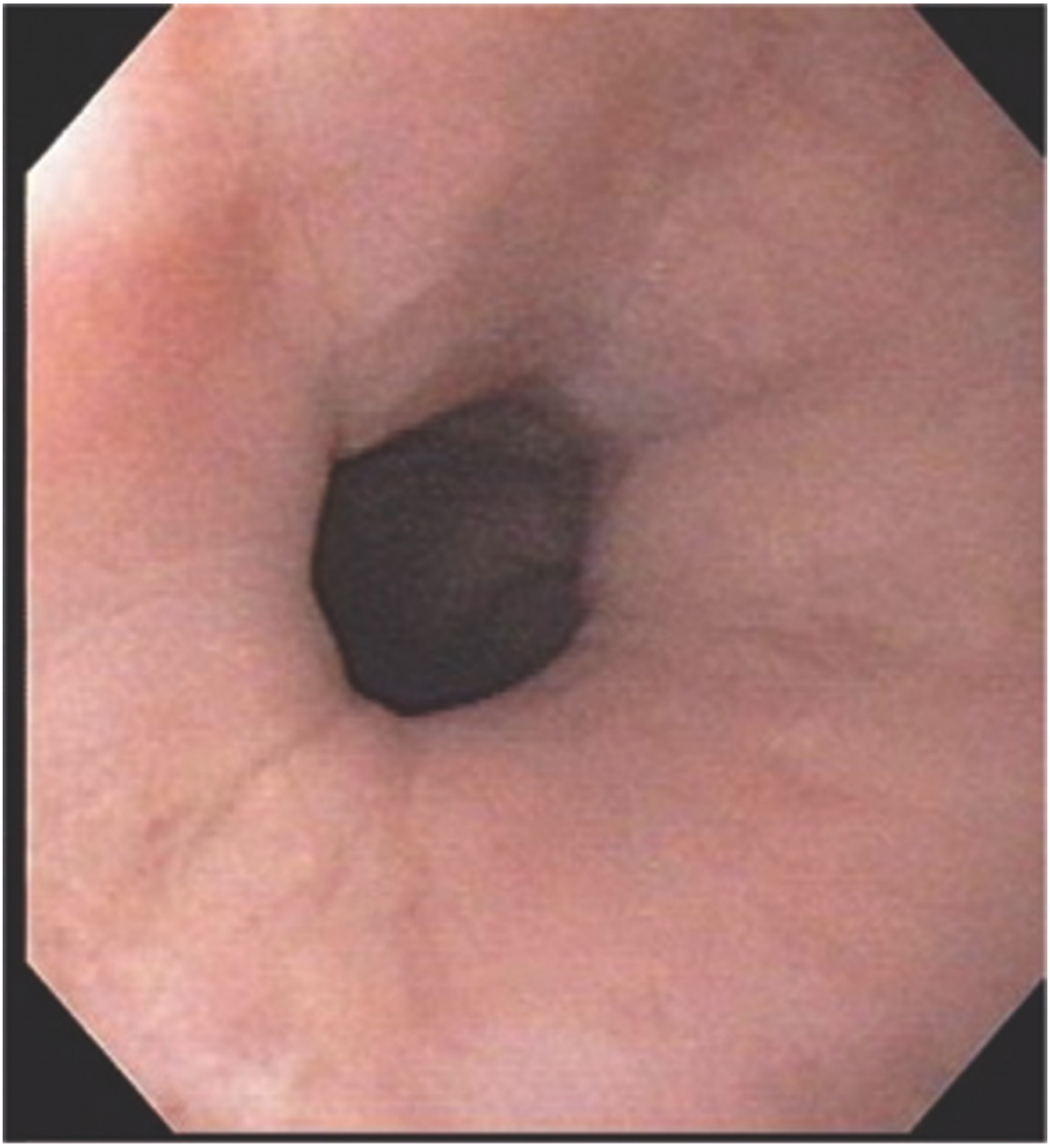
Circular balloon with an antenna used to ablate the mucosa


BARRX

Radiofrequency ablation for Dysplasia



Before Ablation



After Ablation

Treatment Plans

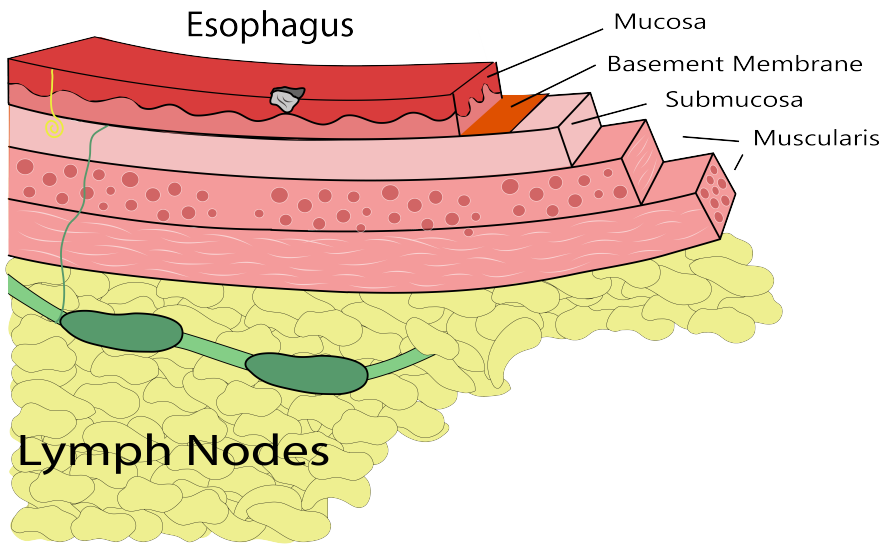
- Superficial (T1) ⇒ Endoscopic Therapy
- Localized (T1b/T2) ⇒ Surgery

- Locally-advanced (T3/N1) ⇒ Chemo ± Radiation →Surgery
- Metastatic (M1) ⇒ Chemotherapy

Superficial Cancers

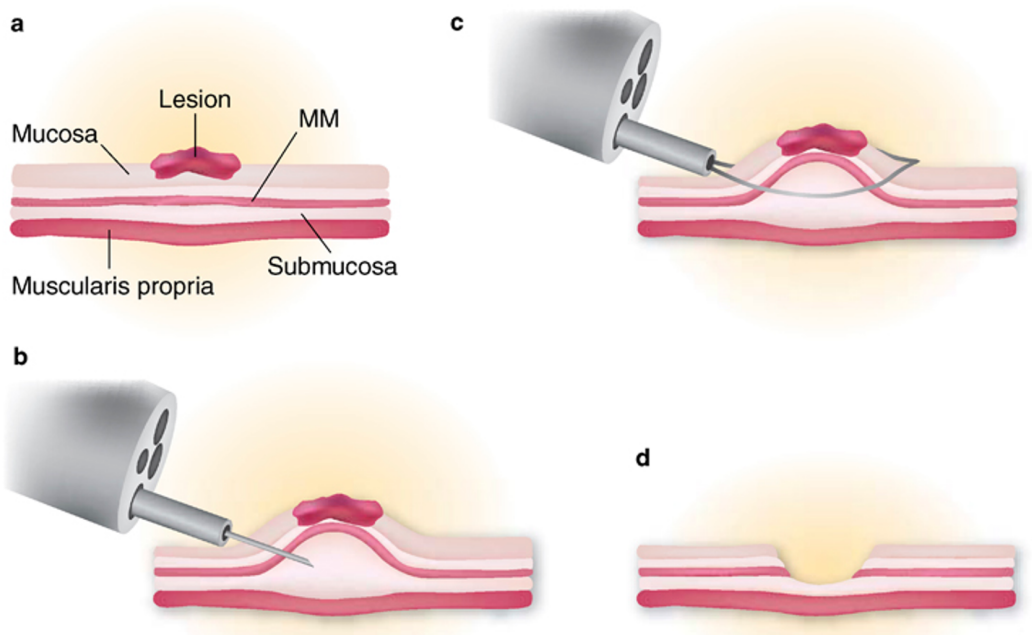
Superficial Cancers = T1a N0

Treatment is often with endoscopy without the need for surgery.



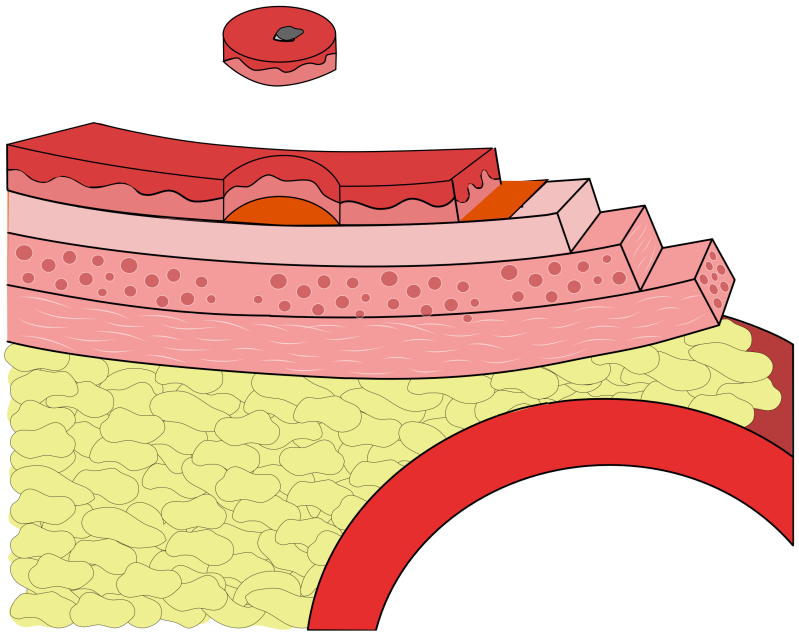
Endoscopic Mucosal Resection (EMR)

Endoscopic procedure to remove a superficial tumor from the inner layer of the esophagus



Endoscopic Mucosal Resection - Favorable

- Clear margins at the edge *AND*
- Clear deep margin *AND*
- Tumor appears slow-growing under microscope



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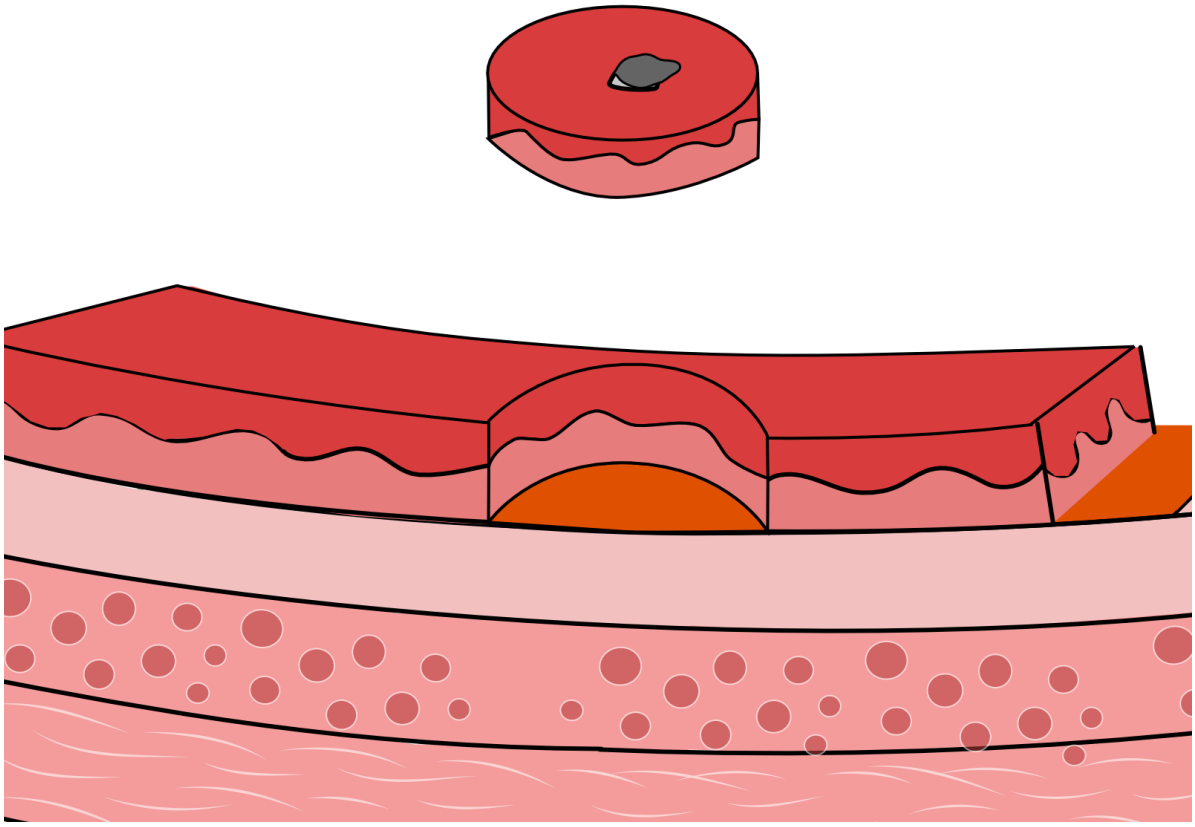
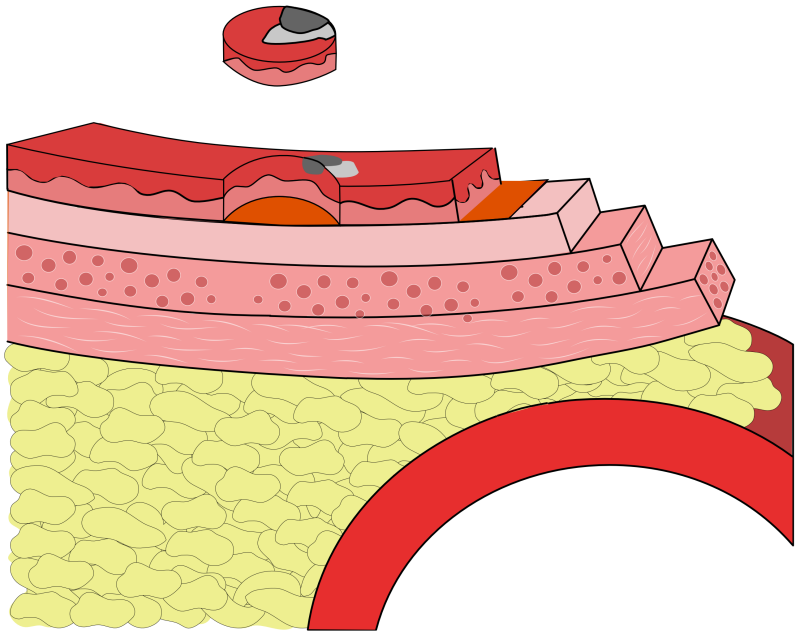


EMR may be sufficient treatment (without surgery)

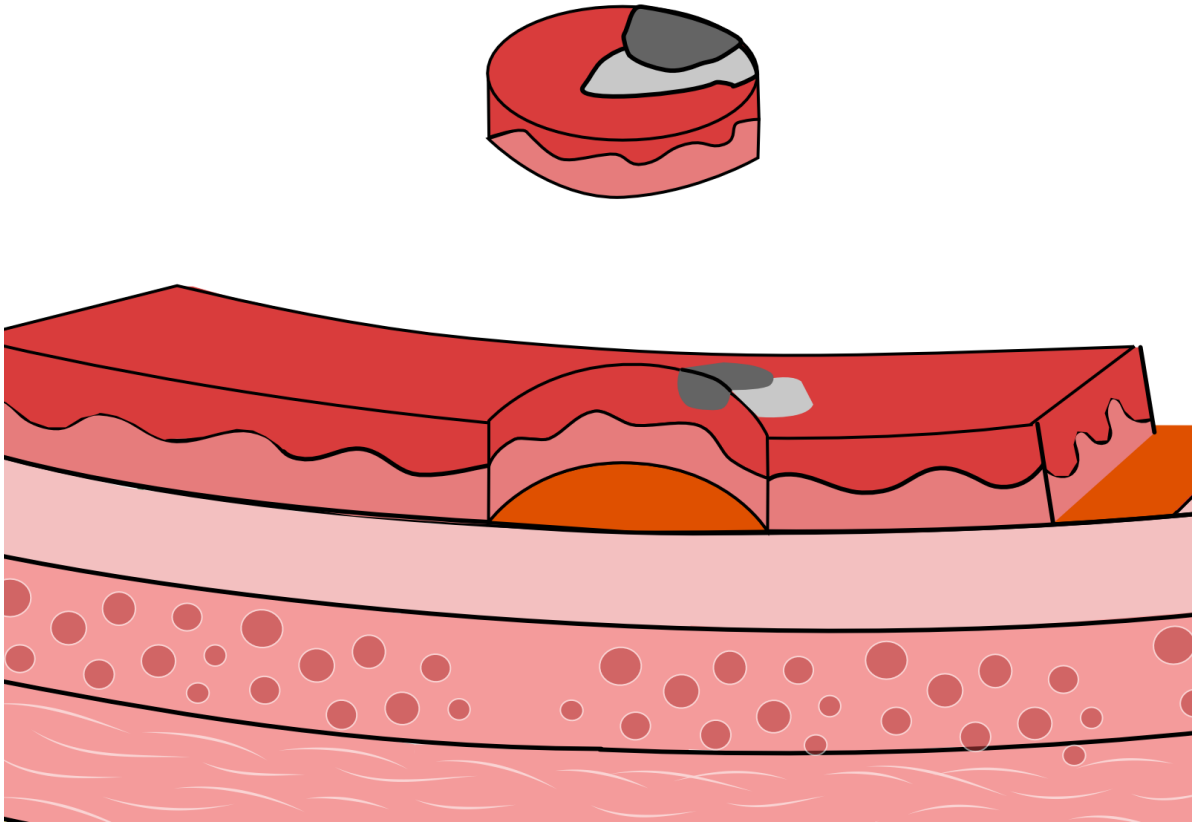
Endoscopic Mucosal Resection - Unfavorable

- Tumor at edge margin *OR*
- Tumor at deep margin *OR*
- Tumor appears rapidly-growing under microscope



Endoscopic Mucosal Resection - Unfavorable

- Tumor at edge margin *OR*
- Tumor at deep margin *OR*
- Tumor appears rapidly-growing under microscope



Esophagectomy (surgery) is standard recommendation

Surgery

Surgery Slideshow