

Esophageal Cancer

Diagnosis and Staging

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Introduction

If you or someone close to you has recently been diagnosed with esophageal cancer, this video is intended for you.

I'm Dr Jonathan Salo and I'm a GI Cancer Surgeon.

In this video you'll learn about:

- Definitions of cancer Terms
 - Staging of esophageal cancer
 - Diagnostic Tests
 - Other videos in this series will go into more detail
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Anatomy

The esophagus is a hollow muscular tube which connects the throat to the stomach.

For many patients, the first symptom they have is difficulty swallowing or pain in swallowing.

The difficulty swallowing can be due to a lump, also known as a tumor

Cancer Terms

Let's start with some definitions.

A **tumor** is an abnormal growth. Tumors can be either benign or malignant

A **benign** tumor of the esophagus may grow over time and cause obstruction and make it difficult to swallow, but it won't ever spread anywhere else

A **malignant** tumor of the esophagus can cause obstruction but also has the potential to spread elsewhere in the body.

Cancer is another term for a malignant tumor Unfortunately, the majority of tumors found in the esophagus are cancer

We will use the term cancer and tumor interchangeably in this video

EGD

In most cases, the diagnosis of esophageal cancer is made by endoscopy, also called an EGD for esophagogastroduodenoscopy.

Under sedation, a flexible scope is passed through the mouth into the esophagus, which allows viewing the inside of the esophagus.

If a mass is found in the esophagus, a small portion can be removed, which is called a **biopsy**.

Biopsy

The biopsy is examined by a pathologist, who will determine whether the tumor is benign or whether it is a cancer.

Staging

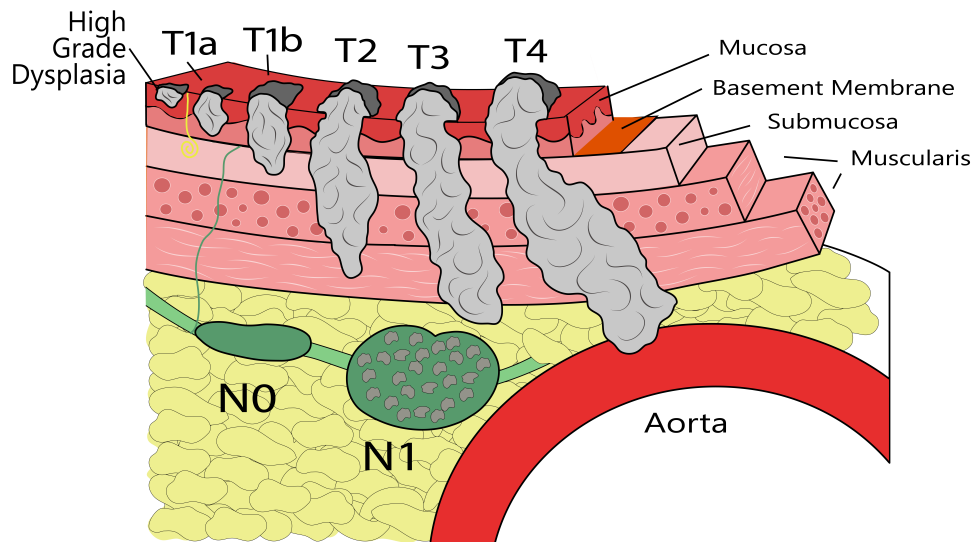
If the biopsy shows cancer, the next step is staging.

Staging is the process of finding out the size of the tumor and whether or not there has been spread to the lymph nodes or other places in the body.

Once the stage has been determined, it will be possible to determine the best therapy.

In order to determine the stage, we will focus on three different areas: The first is the tumor. How large is the tumor? And more importantly, how deeply has it grown into the wall of the esophagus? The second is whether there is spread to the lymph nodes. The third is whether there is metastasis or spread to other parts of the body.

Some drawings will help. The wall of the esophagus has multiple layers, shown here.



Surrounding the esophagus are lymph nodes. The purpose of lymph nodes is to filter the blood and help fight infections, but in some cases cancers in the esophagus can spread to the lymph nodes

In its earliest stages, cancer of the esophagus starts on the inner, or most superficial layer, called with mucosa. With time, however, the cancer can continue to grow and invade deeper into the wall of the esophagus. The deeper the cancer invades into the wall of the esophagus, the more likely it is that cancer cells can spread to the lymph nodes

If cancer cells spread to the lymph nodes, there is a chance that some cells will break off and spread to the liver or lungs.

Metastasis is spread to other parts of the body such as liver, lungs, or bone.

The stage consists of 3 parts:

- T for Tumor
 - N for Nodes
 - M for Metastasis
-

Tumor

- T1 tumor involves the top layers of the esophagus
- T1a tumor involves the mucosa
- T1b tumor involves the submucosa
- T2 tumor invades into the muscular layer
- T3 tumor invades all the way through the muscular layer
- T4 tumor invades into nearby structures such as the aorta or the airway

This may sound confusing, but as a general rule, if someone with esophageal cancer has difficulty swallowing, the tumor is usually a T3.

There are of course exceptions, but this is a general guideline

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#Diagnostic Tests

Next we will talk about some of the diagnostic tests that are used for staging.

When you meet with your doctors, one the first things they will do is to come up with a plan for testing that is tailored to you and your particular tumor.

So we will talk about these tests in general terms, but not all tests are needed for all patients

Scans

A CT scan is usually the first test for staging. This will show whether there is any signs of metastasis or spread to other organs such as the lung, liver, or bone

PET Scan

A PET scan is a specialized scan which combines a CT scan with an injection of a small amount of tracer which lights up areas of cancer.

EUS

In cases where it is important to know about the exact size of the tumor, an endoscopic ultrasound exam can be done.

This procedure is similar to an EGD, but the endoscope has an ultrasound sensor on the end of the scope which produces an image of the tumor

In some cases, particularly for cancers in the stomach, it is important to look for signs of spread in the abdominal cavity. In some situations, cancers can spread in the abdominal cavity but the areas are so small they don't show up on a CT scan.

In these cases, a laparoscopy is helpful.

Laparoscopy

Laparoscopy is a surgical procedure done under a general anesthetic. Several incisions $\frac{1}{4}$ " long are made, and a telescope is inserted into the abdominal cavity. This allows an examination of the abdominal cavity to look for signs of spread.

The procedure is usually done as an outpatient, so you can go home the same day.

The next video discusses treatment options for esophageal cancer.

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