Esophageal Cancer

Surgery

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Introduction

I'm Dr Jonathan Salo, a GI Cancer Surgeon in Charlotte, North Carolina.

In this video, you will learn about

- Different kinds of surgery for esophageal cancer
- Risks of surgery
- How you can reduce the risk of surgery

In another video, we'll talk about how to choose a hospital and surgeon for your esophagectomy.

Surgery for esophageal cancer is generally performed for three different situations:

- Superficial Tumors (T1) that can't be completely removed by endoscopy
- Localized Tumors (T2N0)
- Locally Advanced Tumors (T3 or N+) after the completion of chemotherapy and radiation

If you haven't seen it already, this may be a good time to view the Esophageal Cancer Treatment Options video.

Goals of Esophagectomy

.pull-left[- Remove tumor from esophagus - Remove surrounding lymph nodes - Create a new esophagus]

.pull-right[ ]

Resection

.pull-left[After the tumor and the nodes are removed, it's necessary to perform a *reconstruction* to allow normal eating.]

.pull-right[ ]

Reconstruction

.pull-left[In most cases, the stomach is used for reconstruction. The stomach is reshaped into a tube and brought into the chest cavity.]

.pull-right[ ]

Types of Esophagectomy

Many different types of esophagectomy and several different techniques.

Total Esophagectomy

.pull-left[Total esophagectomy removes all of the esophagus and makes a new connection in the neck. This new connection is called an anastomosis.]

.pull-right[ ]

Ivor Lewis esophagectomy

.pull-left[Ivor Lewis esophagectomy removes 75% of the esophagus and makes a new connection in the chest.]

.pull-right[ ]

Total Esophagectomy

There are two types of total esophagectomy:

.pull-left[**McKeown** esophagectomy makes incisions in the abdomen, the right chest, and the neck]

.pull-right[ ]

.pull-left[**Transhiatal** esophagectomy uses an incision in the abdomen and the neck to performa total esophagectomy. Instead of an incision in the right chest, a tunnel is created behind the heart, which allows removal of the esophagus]

.pull-right[ ]

Ivor Lewis Esophagectomy

.pull-left[The Ivor Lewis esophagectomy makes incisions in the abdomen and the right chest. This is also known as a *Transthoracic* esophagectomy.]

.pull-right[]

McKeown esophagectomy uses incisions in the abdomen, right chest, and neck. This allows access to the tumor and the nearby lymph nodes. This enables a greater harvest of lymph nodes.

Because the whole esophagus is removed, this operation is suitable for tumors anywhere along the esophagus.

Because this approach removed the esophagus in the neck, there is a hoarseness after surgery due to bruising of the nerves to the voicebox.

Transhiatal Detail

Transhiatal esophagectomy uses incisions in the abdomen and neck. A tunnel is created behind the heart to remove the esophagus and tumor.

Because the whole esophagus is removed, this operation is suitable for tumors anywhere along the esophagus.

Because this operation does not require collapsing the right lung during surgery, it is ideal for patients with poor lung function.

However removal of lymph nodes is not as complete with this technique.

An Ivor Lewis esophagectomy uses incisions in the abdomen and right chest. This operation is commonly used for tumors in the middle or lower part of the esophagus.

Like the McKeown esophagectomy, this allows a more complete lymph node harvest. Unlike the McKeown esophagectomy, however, there is no risk of injury to the nerves in the neck.

Esophagectomy Techniques

For each of the different approaches, there are different surgical approaches:

- Open technique uses conventional laparotomy and thoracotomy incisions.

Open - McKeown

McKeown esophagectomy makes incisions in the abdomen, right chest, and neck

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Open - Transhiatal

McKeown esophagectomy makes incisions in the abdomen, right chest, and neck

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Open - Ivor Lewis

Ivor Lewis esophagectomy makes incisions in the abdomen and right chest

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Minimally Invasive (general)

Minimally-invasive approaches have been developed for each of the types of esophagectomy

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Minimally-invasive Ivor Lewis

Mininally-invasive esophagectomy uses small incisions in the abdomen and chest and avoids a neck incision.

We have found at our hospital to be best choice for most patients.

Minimally-invasive Ivor Lewis

Small incisions mean less discomfort and faster recovery. This approach also avoids the risk of hoarseness which can be associated an incision in the neck.

Minimally-invasive McKeown

We use a minimally-invasive McKeown esophagectomy for patients with tumors in the proximal, or upper esohpagus.

Minimally-invasive McKeown

This allows us the best opportunity to remove the tumor and nearby lymph nodes, while still allowing the benefits of minimally-invasive techniques to speed recovery.

In the decision for the best type of esophagectomy for a particular patient, there is no substitute for an experienced surgeon. The goals of these videos it to help you understand some of the terminology when you have a discussion with your surgeon.

Risks of Surgery

An esophagectomy is a substantial operation, and it is associated with multiple risks. These can be categorized as follows:

- Irregular heart rhythm (atrial fibrillation)
- Pneumonia
- Anastomotic leak
- Death

Arrhythmia

The esophagus normally lives right next to the heart, and as a result, it is common for the heart to be irritated during the course of esophagectomy. *Atrial Fibrillation* is a condition in which the heart rhythm can become irregular and the heart beats faster than normal. This frequently requires use of medicines to help slow the heart rate.

Pneumonia

Pneumonia is another common complication after esophagectomy, due in part to fact that esophagus is close to the right lung. Pneumonia requires treatment with antibiotics and frequently requires a longer hospitalization.

Anastomotic Leak

In most cases, the new connection between the esophagus and stomach, called the anastomosis, heals well.

Anastomotic Leak

If connection does not heal properly, this can cause a leakage of fluid from inside the esophagus. This is called an anastomotic leak. In some cases, the leak will heal on its own, but other cases may require additional procedures or even surgery.

Death

An esophagectomy is a substantial operation. It is unusual, but in some cases complications after surgery can result in death. The risk of death depends upon the overall health of the patient, the tumor, and other factors.

What are my chances?

The following are figures reported from a group of 24 high-volume hospitals for complications after esophagectomy:

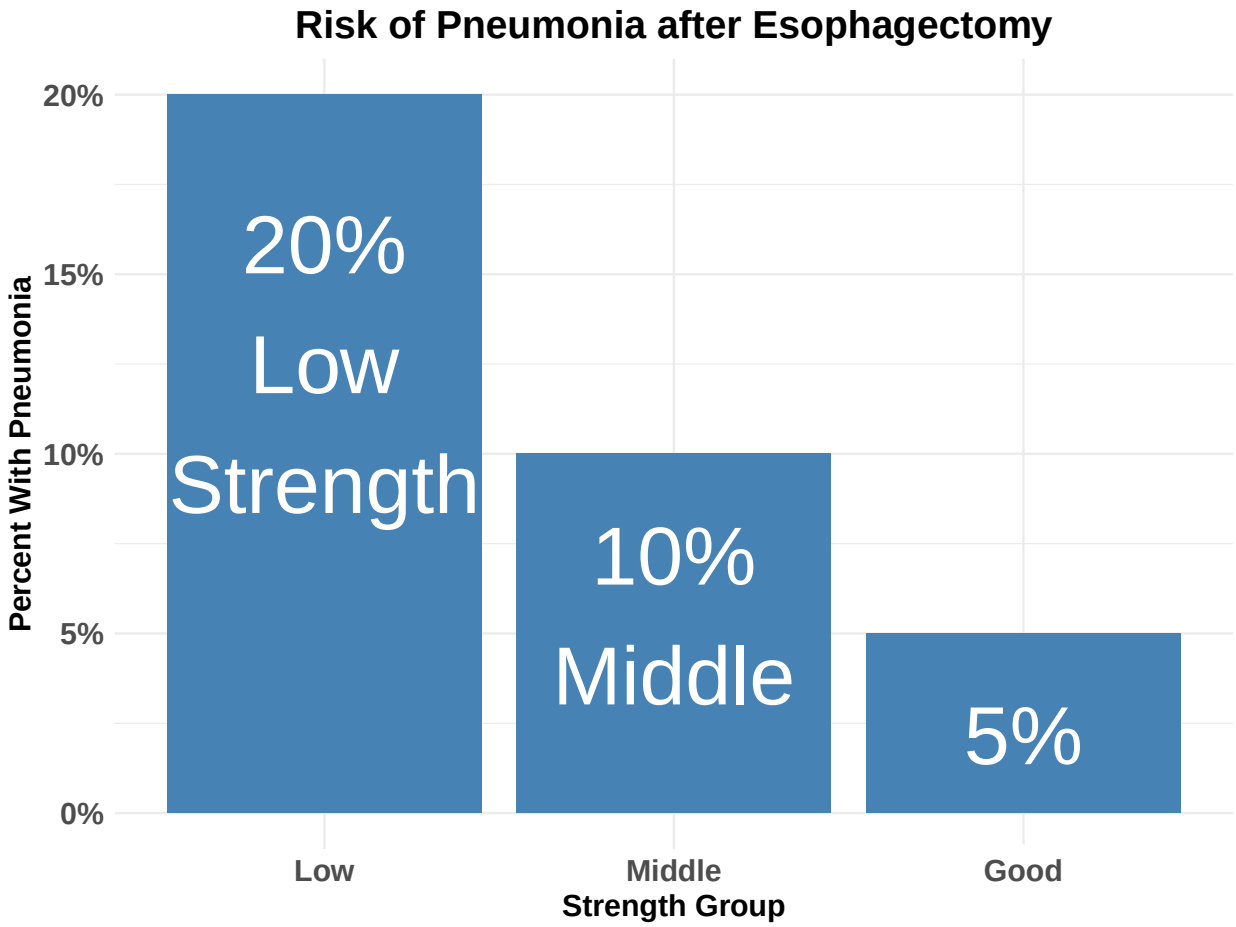
- Atrial fibrillation 15%
- Pneumonia 15%
- Anastomotic leak 11%
- Death within 90 days 4.5%

Risks of Complications

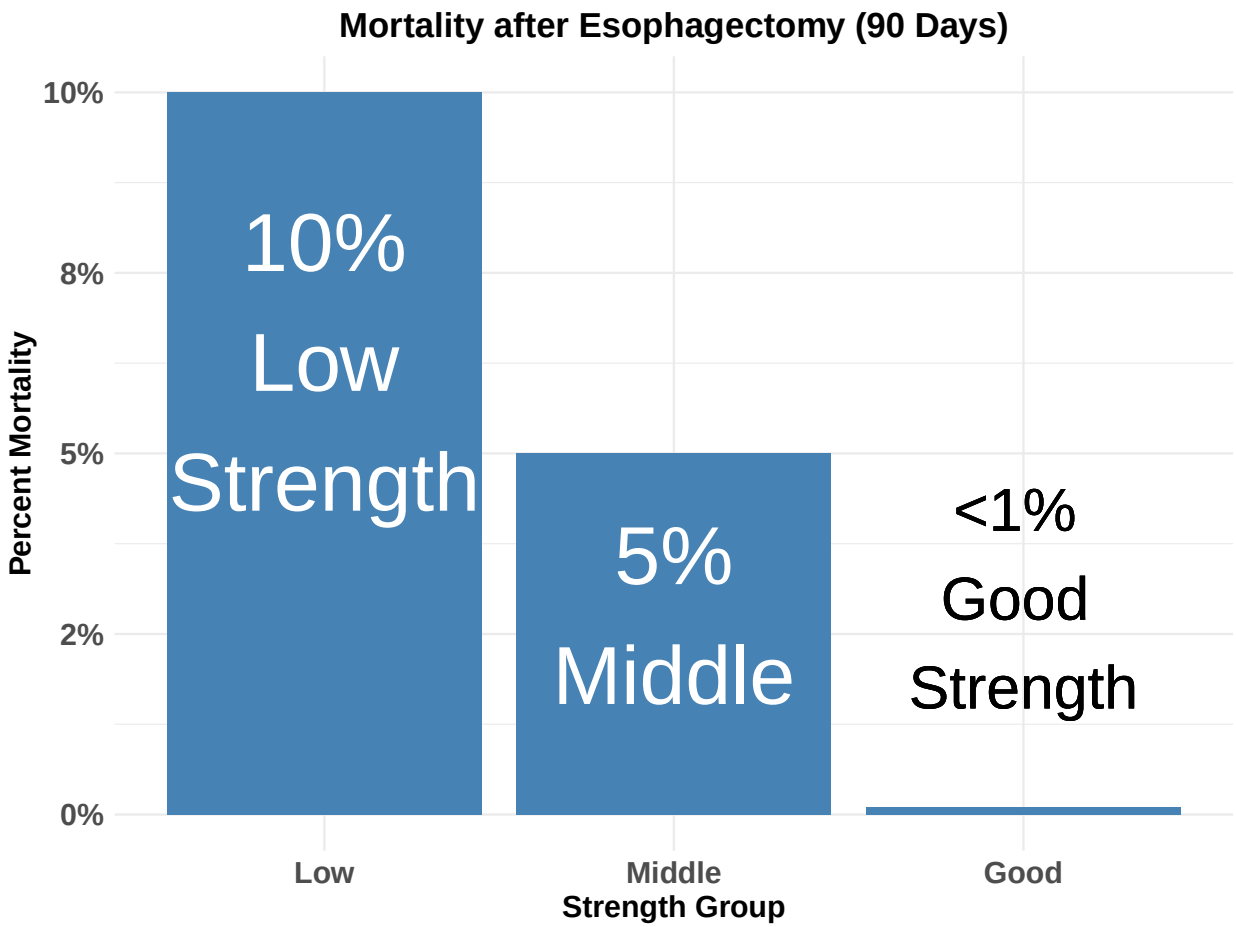
The risk of complications depends on three things:

- Patient's overall health
- Hospital Volume
- Surgeon Experience

Patient Health and Esophagectomy Outcomes



An esophagectomy is a substantial operation, and the outcomes depend in part on the health



Understanding Outcomes

Let's talk Baseball for a minute. Micky Mantle is regarded as one of baseball's greats, and this baseball card from 1952 is one of the most valuable in history.

If you look at the back of his card, you'll find lost of statistics, including his batting average. The numbers are there for anyone to see, including his batting average. If you're a baseball fan, one of the ways you evaluate players is based upon their statistics.

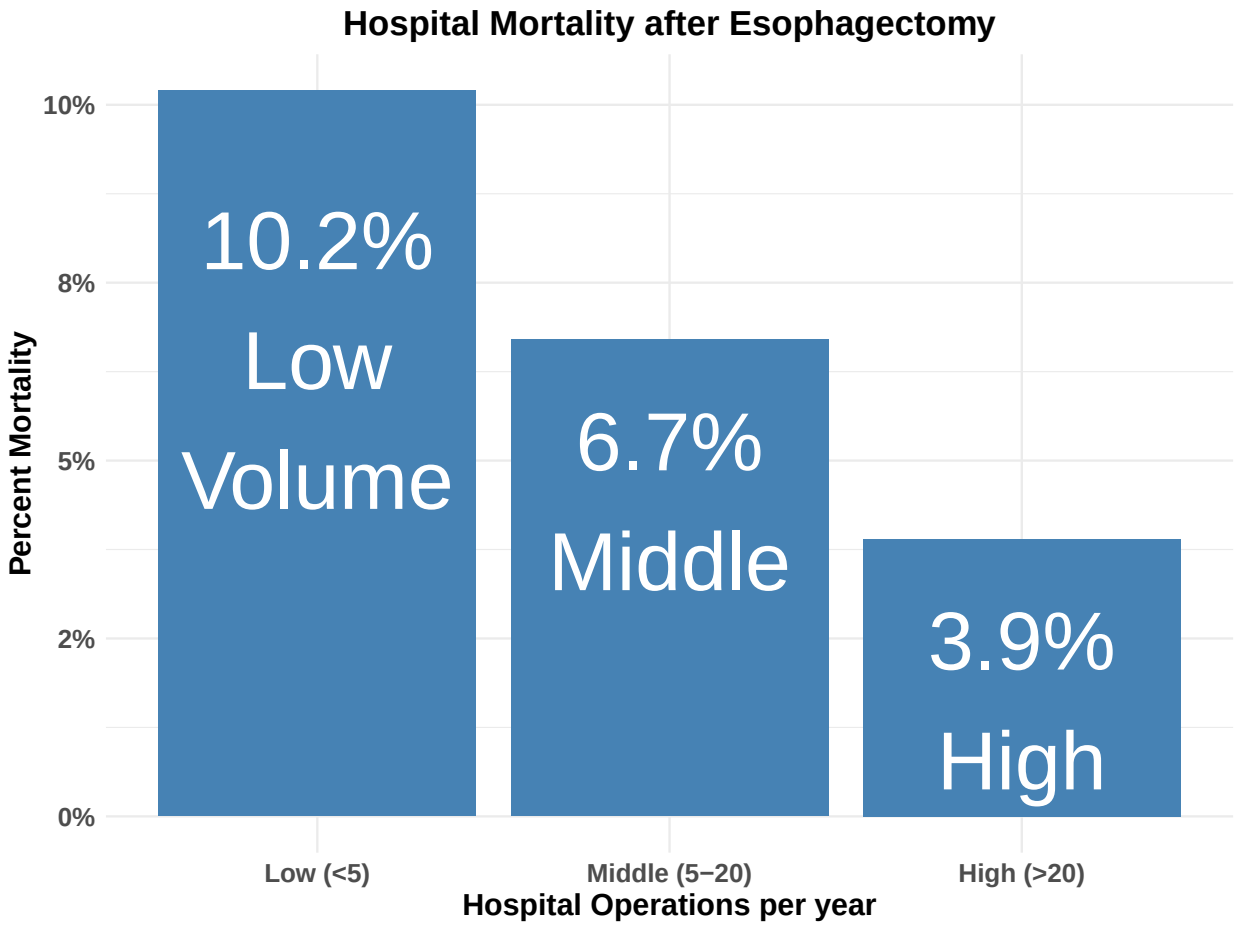
Unfortunately, there aren't baseball cards for hospitals and surgeons, and finding the statistics for a hospital or surgeon can be a challenge, but it's still important if you want the best chance for a good outcome after surgery.

Hospital Volume

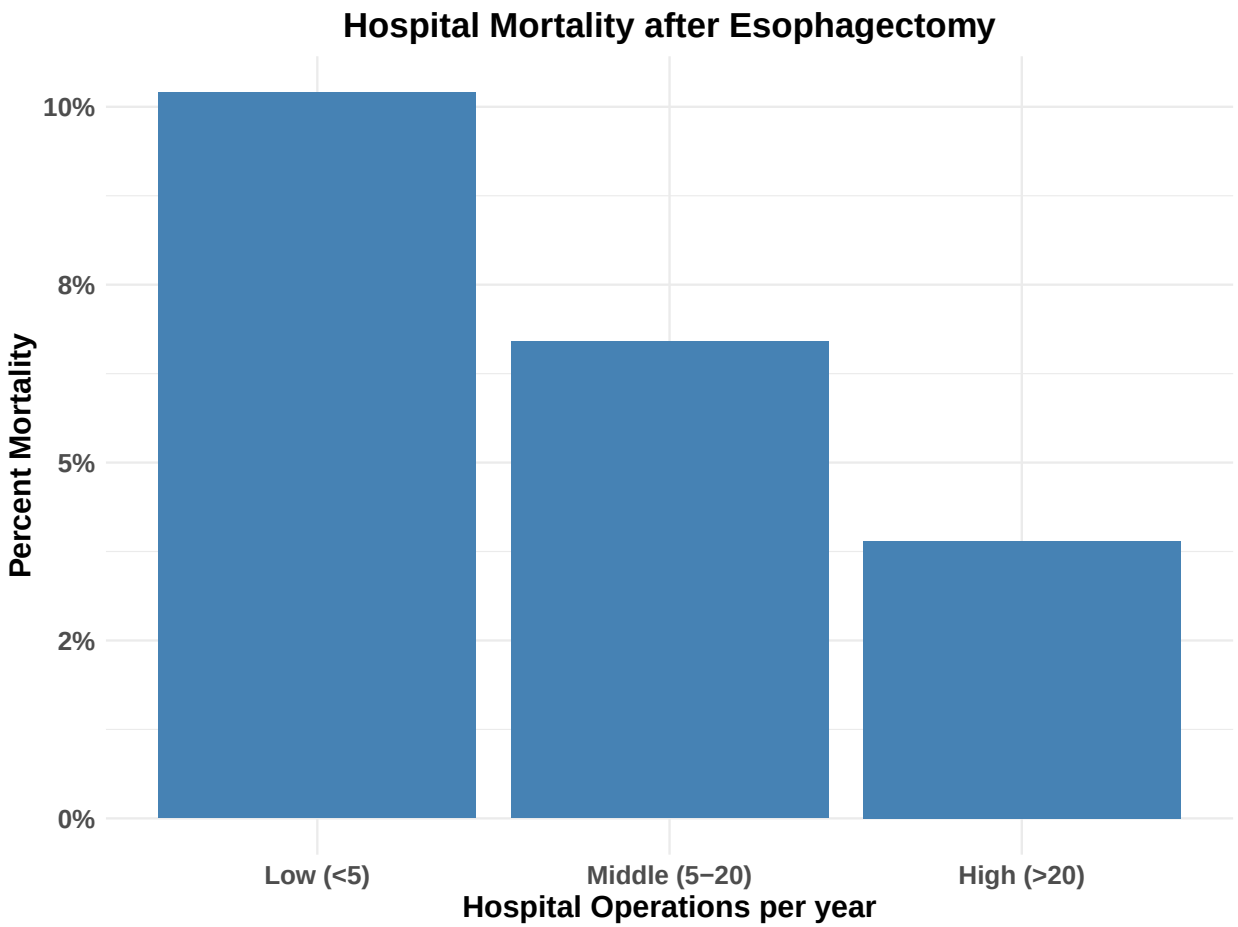
Practice makes perfect in many things in life, and esophageal surgery is no exception.

Hospitals where an esophagectomy is performed more frequently in general have better outcomes than hospitals where the operation is only occasionally done.

This chart shows the relationship between hospital volume and the risk of death after esophagectomy.



The risk of death after esophagectomy is about twice as high in hospitals which perform less than 5 esophagectomy operations per year.



Finding a Hospital

The easiest way to find out whether a particular hospital is high volume or low volume is to ask your surgeon.

Another method is to do some research on the internet. The Leapfrog Group is a non-profit organization that collects and published safety in healthcare. Their website ranks hospitals for safety and can help you find a high-volume hospital. A link to their website is available here: HospitalSafetyGrade.org

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Leapfrog Group Website

You can search on a hospital. Once there, click "View this hospital's leapfrog Hospital Survey Results"

Of course there are low-volume hospital that have good outcomes, but starting with a high-volume hospital is a place to start.

The Leapfrog Group

Choosing a Surgeon

The surgeon is another key factor in the outcome of an operation. The Leapfrog recommends a minimum of seven operations per year for surgeons undertaking esophagectomy.

The surgeon's track record of outcomes is also an extremely helpful way to predict outcomes. Finding out this information may require some uncomfortable questions, but this is important information. It is critical to know both what the track record of the hospital is, but also the track record of a particular surgeon.

Your Surgeon's Outcomes

Knowing your surgeon's outcomes is important, but knowing your surgeon's outcomes is probably more important. Your surgeon should be able to tell you what their statistics are for outcomes like anastomotic leak, pneumonia, and death after surgery.

If you surgeon doesn't know their personal statistics, you may want to look for a second opinion. After all, if you met a professional baseball player, you would expect that they would be familiar with their batting average.

Questions for Your Surgeon

1) How many esophagectomy operations are performed each year in your hospital?
2) How many esophagectomy operations do you perform personally each year?
3) What are your overall rates of complications?

- Pneumonia
- Anastomotic Leak
- Death in the first 90 days after surgery
