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Anatomy & Physiology 206

April 20, 2010

Barrett's Esophagus

What is Barrett's Esophagus?

Norman Barrett was a pathologist. In 1950, he described an abnormality in the lining of the lower esophagus that bears his name (i.e., Barrett's esophagus). We now believe that it is due to severe, longstanding, gastroesophageal reflux disease (GERD). Significantly, most people with GERD have no such abnormality. Nevertheless, the presence of Barrett's esophagus is an important observation since those who have it are at greater than normal risk of developing cancer of the esophagus. Barrett's esophagus is a condition in which the tissue lining the esophagus—the muscular tube that connects the mouth to the stomach—is replaced by tissue that is similar to the lining of the intestine. This process is called intestinal metaplasia.

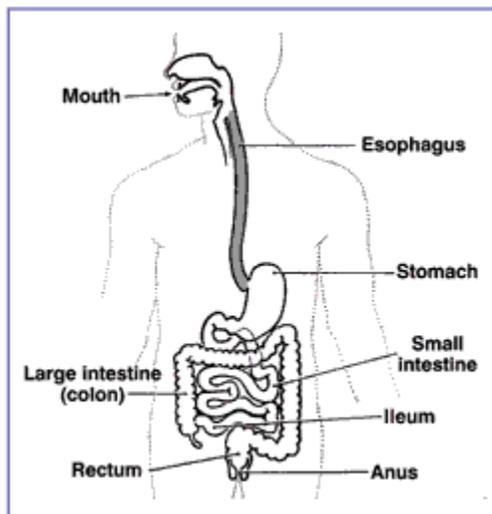
No signs or symptoms are associated with Barrett's esophagus, but it is commonly found in people with gastro esophageal reflux disease (GERD). A small number of people with Barrett's esophagus develop a rare but often deadly type of cancer of the esophagus.

Barrett's esophagus affects about 1 percent of adults in the United States. The average age at diagnosis is 50, but determining when the problem started is usually difficult. Men

develop Barrett's esophagus twice as often as women, and Caucasian men are affected more frequently than men of other races. Barrett's esophagus is uncommon in children.

The Esophagus

The esophagus carries food and liquids from the mouth to the stomach. The stomach slowly pumps the food and liquids into the intestine, which then absorbs needed nutrients. This process is automatic and people are usually not aware of it. People sometimes feel their esophagus when they swallow something too large, try to eat too quickly, or drink very hot or cold liquids.

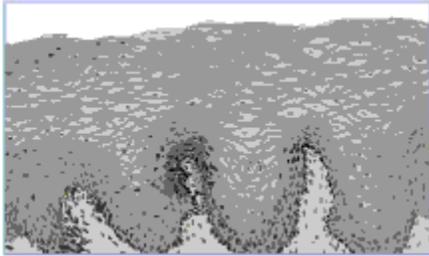


Digestive tract.

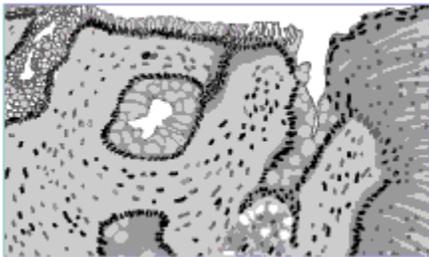
The muscular layers of the esophagus are normally pinched together at both the upper and lower ends by muscles called sphincters. When a person swallows, the sphincters relax to allow food or drink to pass from the mouth into the stomach. The muscles then close rapidly to prevent the food or drink from leaking out of the stomach back into the esophagus and mouth.

How is Barrett's esophagus diagnosed?

Because Barrett's esophagus does not cause any symptoms, many physicians recommend that adults older than 40 who have had GERD for a number of years undergo an endoscopy and biopsies to check for the condition.



Normal esophagus.



Barrett's esophagus.

Barrett's esophagus can only be diagnosed using an upper gastrointestinal (GI) endoscopy to obtain biopsies of the esophagus. In an upper GI endoscopy, after the patient is sedated, the doctor inserts a flexible tube called an endoscope, which has a light and a miniature camera, into the esophagus. If the tissue appears suspicious, the doctor removes several small pieces using a pincher-like device that is passed through the endoscope. A pathologist examines the tissue with a microscope to determine the diagnosis.

Surveillance for Dysplasia and Cancer

Periodic endoscopic examinations with biopsies to look for early warning signs of cancer are generally recommended for people who have Barrett's esophagus. This approach is called surveillance.

Typically, before esophageal cancer develops, precancerous cells appear in the Barrett's tissue. This condition is called dysplasia and can be seen only through biopsies. Multiple biopsies must be taken because dysplasia can be missed in a single biopsy. Detecting and treating dysplasia may prevent cancer from developing.

What is the risk of esophageal cancer with Barrett's esophagus?

People with Barrett's esophagus have a low risk of developing a kind of cancer called esophageal adenocarcinoma. Less than 1 percent of people with Barrett's esophagus develop esophageal adenocarcinoma each year. Barrett's esophagus may be present for several years before cancer develops. Esophageal adenocarcinoma is frequently not detected until its later stages when treatments are not always effective.

How is Barrett's esophagus with dysplasia or cancer treated?

Endoscopic or surgical treatments can be used to treat Barrett's esophagus with severe dysplasia or cancer. Your doctor will present the available options and help determine the best course of treatment for you.

Endoscopic Treatments

Several endoscopic therapies are available to treat severe dysplasia and cancer. During these therapies, the Barrett's lining is destroyed or the portion of the lining that has dysplasia or cancer is cut out. The goal of the treatment is to encourage normal esophageal tissue to replace the destroyed Barrett's lining. Endoscopic therapies are performed at specialty centers by physicians with expertise in these procedures.

- **Photodynamic Therapy (PDT).** PDT uses a light-sensitizing agent called Photofrin and a laser to kill precancerous and cancerous cells. Photofrin is injected into a vein and the patient returns 48 hours later. The laser light is then passed through the endoscope and activates the Photofrin to destroy Barrett's tissue in the esophagus. Complications of PDT include chest pain, nausea, and sun sensitivity for several weeks, and esophageal strictures.
- **Endoscopic Mucosal Resection (EMR).** EMR involves lifting the Barrett's lining and injecting a solution under it or applying suction to it and then cutting it off. The lining is then removed through the endoscope. If EMR is used to treat cancer, an endoscopic ultrasound is done first to make sure the cancer involves only the top layer of esophageal cells. The ultrasound uses sound waves that bounce off the walls of the esophagus to create a picture on a monitor. Complications of EMR can include bleeding or tearing of the esophagus. EMR is sometimes used in combination with PDT.

Surgery

Surgical removal of most of the esophagus is recommended if a person with Barrett's esophagus is found to have severe dysplasia or cancer and can tolerate a surgical procedure. Many people with Barrett's esophagus are older and have other medical problems that make surgery unwise; in these people, the less-invasive endoscopic treatments would be considered. Surgery soon after diagnosis of severe dysplasia or cancer may provide a person with the best chance for a cure. The type of surgery varies, but it usually involves removing most of the esophagus, pulling a portion of the stomach up into the chest, and attaching it to what remains of the esophagus.

Points to Remember

- In Barrett's esophagus, the tissue lining the esophagus is replaced by tissue that is similar to the lining of the intestine.
- Barrett's esophagus is associated with gastroesophageal reflux disease (GERD).
- Improvement in GERD symptoms with acid-reducing drugs may decrease the risk of developing Barrett's esophagus.
- Barrett's esophagus is diagnosed through an upper gastrointestinal endoscopy and biopsies.
- People who have Barrett's esophagus should have periodic surveillance endoscopies and biopsies.
- Endoscopic treatments are used to destroy Barrett's tissue, which will hopefully be replaced with normal esophageal tissue.

- Removal of most of the esophagus is recommended if a person with Barrett's esophagus is found to have severe dysplasia or cancer and can tolerate a surgical procedure.