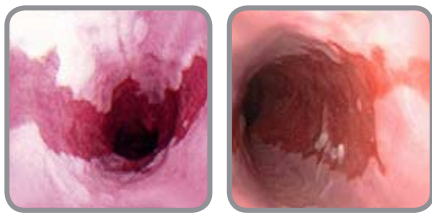


Barrett's Esophagus

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Barrett's Esophagus The esophagus is the tube that connects the mouth with the stomach. Barrett's esophagus occurs when the normal cells that line the lower part of the esophagus (called squamous cells) are replaced by a different cell type (called intestinal cells). This process usually occurs as a result of repetitive damage to the inside of the esophagus.

The most common cause of Barrett's esophagus is longstanding acid reflux disease, called gastroesophageal reflux disease (GERD). In people with GERD, the esophagus is repeatedly exposed to excessive amounts of stomach acid. Interestingly, the intestinal cells of Barrett's esophagus are more resistant to acid than squamous cells, suggesting that these cells may develop to protect the esophagus from acid exposure. The problem is that the intestinal cells have a risk of transforming into cancer cells.



Endoscopic views of Barrett's Esophagus

Barrett's Esophagus Risk Factors

There are a number of factors that increase the risk of developing Barrett's esophagus:

Age — commonly diagnosed in middle-aged and older adults; the average age at diagnosis is 55 years.

Gender — Men are more commonly diagnosed with Barrett's esophagus than women.

Ethnic background — Barrett's esophagus is equally common in white and Hispanic populations and is uncommon in black and Asian populations.

Lifestyle — Smokers are more commonly diagnosed with Barrett's esophagus than nonsmokers.

Barrett's Esophagus Symptoms

Barrett's esophagus itself produces no symptoms. Instead, most people seek help because of symptoms of GERD, including heartburn, regurgitation of stomach contents, and, less commonly, difficulty swallowing.

Barrett's Esophagus Diagnosis

A healthcare provider may suspect Barrett's esophagus based upon a person's symptoms and the risk factors described above. An endoscopy is needed to confirm the abnormal esophageal lining.

Upper endoscopy

Upper endoscopy is a test that allows a physician to see the inside of the esophagus and stomach.

Endoscopy detects most (80 percent) but not all cases of Barrett's esophagus. Individual variations in the anatomy of the esophagus and the area where it meets the stomach can make the diagnosis of Barrett's esophagus difficult in some people.

Barrett's Esophagus Treatment

The goal of treatment in patients with Barrett's esophagus is to control reflux symptoms. Aggressive reflux treatment is not thought to be more effective in preventing cancer than treating only when there are reflux symptoms.

Behavior and diet changes

The first priority in treating Barrett's esophagus is to stop the damage to the esophageal lining, which usually means eliminating acid reflux. Most patients are advised to avoid certain foods and behaviors that increase the risk of reflux. Foods that can worsen reflux include:

- Chocolate
- Coffee and tea
- Peppermint
- Alcohol
- Fatty foods

Acidic juices such as orange or tomato juice may also worsen symptoms. Carbonated beverages can be a problem for some people.

Behaviors that can worsen reflux include eating meals just before going to bed, lying down after eating meals, and eating very large meals. Placing bricks or blocks under the head of the bed (to raise it by about six inches) help to keep acid in the stomach while sleeping. It is not helpful to use additional pillows under the head.

Medications

A clinician may prescribe medications that reduce the amount of acid produced by the stomach. A class of medications called proton pump inhibitors are commonly recommended.

Surgery

People who have severe reflux may benefit from surgical procedures to reduce reflux. Surgery is not the best treatment in all situations, so you should discuss this option with your doctor. More information about surgical treatments for reflux is available in a separate topic review.

Barrett's Esophagus Complications

One potential complication of Barrett's esophagus is that, over time, the abnormal esophageal lining can develop early precancerous changes. The early changes may progress to advanced precancerous changes, and finally to frank esophageal cancer. If undetected, this cancer can spread and invade surrounding tissues.

However, progression to cancer is uncommon; studies that follow patients with Barrett's esophagus reveal that only 0.5 percent of patients develop esophageal cancer per year. Furthermore, patients with Barrett's esophagus appear to live just as long as people who are free of this condition. Patients often die of other causes before Barrett's esophagus progresses to cancer.

Barrett's Esophagus Monitoring

Monitoring for precancerous changes is recommended for most patients with Barrett's esophagus. At this time, monitoring includes periodic endoscopy with tissue biopsy.

Benefits

Reasons to perform endoscopic monitoring include:

- Monitoring can detect precancerous changes (dysplasia) in the esophageal lining. These changes may indicate that the person has an increased risk of cancer. Early detection may be especially important for younger patients.
- Monitoring may detect cancer at an earlier stage, when it can be more effectively treated.

Limitations

However, not all patients will benefit from endoscopic monitoring.

- Progression of Barrett's esophagus to cancer is uncommon.
- Endoscopy carries certain risks and often causes anxiety.
- Endoscopy may miss areas with premalignant changes or cancer.
- Even if endoscopy detects cancer, the available treatment options may have unacceptably high risks.

Precancerous Changes and Barrett's Esophagus

Confirmation and staging

If precancerous changes are discovered, they should be confirmed by a second pathologist, an expert in examining tissue samples. It is sometimes difficult to correctly identify precancerous changes, especially when there is inflammation (usually caused by the ongoing reflux of acid). Many clinicians increase the dose of acid-suppressing medications in this situation.

The precancerous changes must then be graded as "low grade dysplasia" or "high grade dysplasia," depending upon their severity.

Treatment options

People with low grade dysplasia are usually told to increase their dose of acid suppressing medication and undergo a repeat endoscopy within six months.

A person with high grade dysplasia has more limited options. The management of this condition is controversial. The optimal treatment depends upon the person's age and health and the patient and physician's preference. The options include removal of the esophagus (esophagectomy) and removing (eg, endoscopic mucosal resection) or destroying (eg, photodynamic or other ablation therapies) the abnormal tissue.

Esophagectomy

Esophagectomy is the only treatment for high-grade dysplasia that removes all of the precancerous tissue, although this treatment also has the highest rates of procedure-related death and long-term complications. Reasons to remove the esophagus (esophagectomy) include:

- Cancer is already present in approximately one-third of patients with high grade dysplasia.
- Not removing the esophagus would mean that the person would need frequent monitoring with endoscopy and numerous biopsies.
- Once Barrett's esophagus has progressed to high grade dysplasia, further progression to cancer is common and may occur rapidly.
- Esophageal cancer that begins to invade other tissue may be incurable.

However, esophagectomy may not be necessary in all patients. In addition, the surgery has some serious risks. Anyone who chooses to have esophagectomy should have it performed by an experienced physician in a hospital where the procedure is performed frequently.

Reasons to avoid esophagectomy include the following:

- Advanced premalignant changes do not always progress to esophageal cancer. Studies suggest that progression to cancer occurs in 18 to 43 percent of patients.
- Advanced premalignant changes may actually regress in some patients.
- Vigilant endoscopic monitoring can be used to detect early cancer.
- Esophagectomy has a 5 to 10 percent chance of leading to death.
- Esophagectomy can have other serious complications that worsen quality of life.

Endoscopic mucosal resection

Endoscopic mucosal resection (EMR) involves the removal of a large but thin area of esophageal tissue through an endoscope. EMR provides large tissue specimens that can be examined by the pathologist to determine the character and extent of the lesion and determine if an adequate amount of tissue was removed. Therefore, it can help to confirm the person's diagnosis and completely treat the abnormality (if the abnormal tissue is removed completely). However, this technique is only performed in highly specialized centers.

EMR is a reasonable alternative to esophagectomy in certain patients with high-grade dysplasia or early stage esophageal cancer.

Photodynamic therapy

Photodynamic therapy is a treatment that uses chemical agents, known as photosensitizers, to kill certain types of cells (such as Barrett's cells) when the cells are exposed to a specific type of light. Patients are given the photosensitizer medication into a vein and then undergo endoscopy. During the endoscopy, a laser light is used to activate the photosensitizer and destroy the Barrett's tissue.

However, there is limited information on the long-term outcome of this approach. Furthermore, photodynamic therapy is expensive, available in only a small number of academic medical centers. In up to 40 percent of patients, the procedure causes a complication, such as narrowing of the esophagus, which may require repeated treatments to open the esophagus.

Other ablation techniques

It may be possible to restore the normal esophageal lining (squamous cells) in patients with Barrett's esophagus by destroying (ablating) the Barrett's lining. Many techniques for destroying the Barrett's lining have been studied, including lasers, cautery, and combination therapy with chemicals and lasers. As of yet, it is not clear which patients would benefit from these approaches, particularly since they may be associated with side-effects (such as narrowing of the esophagus or creation of a hole in the esophagus during treatment).

The uncertainty about when to use these approaches is even greater given that the majority of people with Barrett's will not develop precancerous changes. Furthermore, even in patients whose Barrett's tissue is destroyed with treatment, some Barrett's tissue may remain in the esophagus, which still has the potential to progress to dysplasia and cancer. For these reasons, these techniques are considered experimental.

Observation

Some experts recommend that aggressive treatment (esophagectomy) for high-grade dysplasia be delayed until there is evidence of progression to cancer. After the person is diagnosed with high-grade dysplasia, he or she would be monitored closely with endoscopy every three to six months. The benefits and limits of monitoring are discussed above.