

## **BARRETT'S ESOPHAGUS**

Heartburn is a burning sensation felt behind the breastbone and sometimes in the neck and throat. It is caused by stomach acid refluxing or splashing up into the esophagus, which is the muscular tube that connects the throat to the stomach. At the lower end of the esophagus where it enters the stomach, there is a strong muscular ring called the lower esophageal sphincter (LES). The LES should remain tightly closed except to allow food and liquid to pass into the stomach. Heartburn occurs when the LES opens at the wrong time. Almost everyone has this occasionally, and it is nothing to be concerned about. However, heartburn that is severe or that occurs over a long period of time can be harmful. This is known as Gastroesophageal Reflux Disease (GERD). If GERD is untreated, there is constant acid irritation to the lining of the esophagus, and complications can occur. About 1 in 10 patients with GERD are also found to have a condition called Barrett's esophagus. It can be serious and may lead to cancer of the esophagus.

### **What is Barrett's Esophagus?**

The cells lining the esophagus differ from those lining the stomach or intestines, mainly because they have different functions. They also have a distinctly different appearance, so it is easy for a physician to tell them apart when examining the esophagus and stomach. Normally, there is an area at the end of the esophagus that marks the border between the cells of the esophagus and those of the stomach. Barrett's esophagus is the abnormal growth of intestinal-type cells above this border into the esophagus. The Barrett's tissue may spread evenly up into the esophagus, or it may be present as islands or finger-like projections. Usually it is found in the lower portion of the esophagus. However, it may extend throughout the esophagus, or even be found by itself in the middle or upper esophagus.

Since the cells lining the stomach are accustomed to contact with acids, their growth into the esophagus may actually be a defense mechanism. It is designed to protect the normal tissue in the esophagus against further damage by GERD. This may explain why the symptoms of GERD seem to lessen in some patients with Barrett's esophagus. Unfortunately, these tissue changes may be a forerunner of cancer of the lower esophagus, known as adenocarcinoma. Cancer of the upper esophagus (squamous cell cancer) is usually related to alcohol and smoking. This type of cancer appears to be decreasing in the population, while the rate of adenocarcinoma is increasing sharply.

After many years, the Barrett's cells in some patients may develop abnormal changes known as dysplasia. Over a period of perhaps two to five years, the dysplasia may progress from low-grade, to moderate, to high-grade, and finally to cancer. Fortunately, this happens in only about 5% of patients with Barrett's esophagus.

## Cause and Symptoms

For unknown reasons, Barrett's esophagus is found three times more often in males than in females. In some instances, Barrett's esophagus appears to be congenital (present at birth). However, current evidence is strong that, in most instances, it develops as a result of chronic or longstanding GERD.

In most cases, patients with Barrett's would have symptoms similar to those produced by chronic GERD. Some Barrett's patients may also suffer from other complications of GERD, such as peptic ulcers and stricture-narrowing of the esophagus that comes from scarring. GERD patients with excess acid production or frequent reflux of bile are more likely to develop Barrett's esophagus. This is why it is important for patients with frequent or severe heartburn to see their physicians regularly.

## Diagnosis

Diagnosis of Barrett's esophagus requires an endoscopic examination. This is done with the patient under sedation. The physician examines the lining of the esophagus and stomach with a thin, lighted, flexible tube called an endoscope. Biopsies are performed, taking pieces of the abnormal tissue to examine under a microscope for dysplasia. If there is dysplasia, then follow-up exams must be performed.

## Treatment

Currently, there is no recognized treatment to reverse Barrett's esophagus. However, it appears that treating the underlying GERD may slow the progress of the disease and prevent complications. Following are some things the patient can do to help reduce acid reflux and strengthen the LES.

- Avoid eating anything within three hours before bedtime.
- Avoid smoking and tobacco products. Nicotine in the blood weakens the LES.
- Avoid fatty foods, milk, chocolate, mints, caffeine, carbonated drinks, citrus fruits and juices, tomato products, pepper seasoning, and alcohol (especially red wine).
- Eat smaller meals; avoid tight clothing or bending over after eating.
- Review all medications with the physician. Certain drugs can weaken the LES.
- Elevate the head of the bed or mattress 6 to 8 inches. This helps to keep acid in the stomach by gravity. Pillows by themselves are not very helpful.
- Lose weight if overweight. This may relieve upward pressure on the stomach and LES.
- The physician may prescribe medications for acid reduction.

Certain patients with GERD may need surgery to strengthen the LES. This type of surgery is called a fundoplication. It is often done by laparoscopy. Laparoscopy is minimally invasive surgery, performed with a tiny incision at the navel and a few needle points in the upper abdomen. The patient usually returns home in 1-2 days.

A diagnosis of Barrett's esophagus requires regular monitoring by a physician. While it is thought that controlling GERD reduces the risk of developing cancer, this has not yet been definitely proven. Therefore, the physician must perform regular endoscopy exams and biopsies to look for dysplasia. Just how often these exams are repeated depends on how far the disease has advanced. If cancer is found, surgery to remove the lower esophagus (esophagectomy) is usually necessary.

Physicians often recommend this procedure when a high grade of dysplasia is present, so as to prevent the cancer that is likely to occur. There are also newer treatments. They include laser destruction of the abnormal Barrett's tissue in a process called photodynamic therapy. In this treatment, a special drug is injected into the bloodstream and is absorbed only by the dysplastic cells. These cells are then destroyed when exposed to a special frequency of red light.

### Summary

Barrett's esophagus is a condition that may develop as a result of chronic GERD. Barrett's tissue growing in the esophagus is the body's defense against continued stomach acid irritation. Yet, this tissue does not belong in the esophagus, and for some patients it increases the risk of developing adenocarcinoma (cancer) of the esophagus. While there is no treatment to reverse this condition, the likelihood of developing cancer and complications can be reduced with a combination of diet, lifestyle changes, medication, and/or surgery. A regular program of endoscopic examination and biopsy is essential to monitor the Barrett's tissue. There are also promising new techniques under investigation. By working closely with a physician, patients with Barrett's esophagus can expect good control of both GERD and Barrett's, and an excellent long-term outcome.

This information is not intended as medical advice and should not be used for diagnosis. The information in these brochures should not be considered a replacement for consultation with a health-care professional. If you have questions or concerns about the information found in these brochures, please contact your health-care provider. We encourage you to use the information and questions in these brochures with your health-care provider(s) as a way of creating a dialogue and partnership about your condition and your treatment.