

sample or biopsy of any area suspected to be Barrett's tissue. In particular, the tissue will appear as a velvety, raised, reddened area surrounded by the normally whitish esophageal tissue. The biopsy will be inspected under a microscope in order to confirm the diagnosis of Barrett's esophagus as well as to determine if there is any dysplasia or cancer.

Once Barrett's esophagus has been diagnosed, it is essential to comply with a regular program of endoscopic surveillance. Repeat endoscopy and biopsy should be performed at 1-2 year intervals depending on the type of Barrett's tissue or the degree of dysplasia. When moderate to severe dysplasia is found, it may be necessary to perform endoscopic biopsies every 3-6 months.

What is the Treatment for Barrett's Esophagus?

The initial treatment for Barrett's esophagus is directed at controlling GERD, and includes dietary and mechanical measures in addition to medication. More advanced treatment may include surgery or endoscopic destruction of Barrett's tissue.

It is essential that the person with Barrett's esophagus follow a program that includes basic dietary, activity and mechanical precautions:

- Avoid all caffeine, chocolate, carbonation, alcoholic beverages, and mint
- Avoid all tobacco products
- Avoid eating at least three hours before lying down or sleeping
- Avoid large fatty meals and eat smaller meals
- Reduce weight to ideal body weight
- Avoid activities which cause straining or increased abdominal pressure



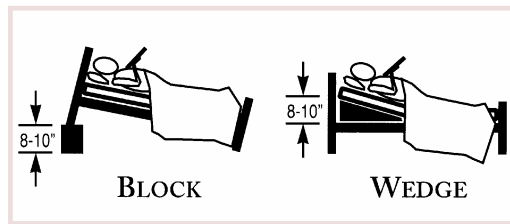
- Avoid tight-fitting clothing
- Elevate the head of the bed or use a wedge to elevate the back 30 degrees

The physician will normally prescribe medications such as H-2 Blockers (Axid, Pepcid, Tagamet, Zantac), Proton Pump Inhibitors (Prilosec, Prevacid), Cytoprotective Agents (Carafate Suspension) or Motility Enhancing Agents (Propulsid, Reglan). If prescribed, the medications must be taken religiously, even if no symptoms are present.

If medications are unsuccessful in controlling the symptoms of GERD, the doctor may recommend a minimally invasive, outpatient surgical procedure such as a Nissen Fundoplication, which tightens the junction between the stomach and esophagus to prevent reflux.

In the event that cancer is found or suspected, early surgery should be performed to remove the Barrett's segment. This is both a curative and life-saving measure. Other currently experimental endoscopic modalities may become available in the near future and include laser destruction by direct application of laser light or photodynamic therapy which employs an agent that is injected into the bloodstream and selectively absorbed by the Barrett's and cancer cells. The cancer cells are then destroyed when exposed to a special frequency of red light.

How to Elevate the Head of a Bed



Summary

Barrett's esophagus is a pre-cancerous condition that develops as the result of chronic GERD. The specialized Barrett's tissue represents the body's internal defense against continued chemical irritation. The presence of Barrett's tissue substantially increases the risk of developing an adenocarcinoma of the esophagus; however, very few patients actually progress to cancer and survival is similar to the general population. Once Barrett's esophagus is recognized, dietary and mechanical lifestyle changes combined with medication and/or surgery offers the potential to reverse the malignant potential of the disorder. A regular program of endoscopic biopsy and surveillance is essential to monitor the Barrett's tissue. Close cooperation between the patient and physician will result in control of GERD and Barrett's, and favors an excellent long term outcome for individuals with Barrett's esophagus.

SPECIAL INSTRUCTIONS:

ENDOSCOPIC MICROSURGERY ASSOC., P.A. MARK D. NOAR, M.D. & ASSOCIATES

Therapeutic Endoscopy, Gastroenterology & Hepatology
7402 York Road, Suite 100 (410) 494-1846
Towson, MD 21204

9110 Philadelphia Road., Suite 108 (410) 574-2566
Baltimore, MD 21237

620 W. McPhail Road., Suite 104 (410) 569-4444
Bel Air, MD 21014

Hunt Valley Medical Center (410) 494-1846
10 Warren Road, Suite 110, Cockeysville, MD 21030

This material does not cover all information and is not intended as a substitute for professional medical care.

Barrett's Esophagus

Endoscopic Microsurgery Associates

BARRETT'S ESOPHAGUS

Barrett's esophagus is a disease named after the investigator who first noticed the presence of islands or extensions of a special type of tissue not normally found in the esophagus. This condition was originally thought to be relatively rare. However, over the past two decades, with the remarkable development and widespread availability and use of endoscopy, physicians have been able to obtain new and vital insights into this disease. This is especially important because Barrett's esophagus is now known to be a serious condition with a greater than normal capacity to develop into cancer of the esophagus.

What is Barrett's Esophagus?

The normal tissue found in the esophagus is made up of squamous-type cells, similar to the cells of the skin. Normally, squamous tissue begins at the top of the esophagus, near the vocal cords, and extends to the area where the stomach begins. A line forms the boundary between the squamous esophageal tissue and the glandular or adenomatous-type stomach tissue. This area is called the esophago-gastric or EG junction.

Barrett's esophagus is a condition whereby glandular tissue similar to that found in the stomach, intestine or colon is noted above the EG junction. Known as Barrett's tissue, it may form either islands, finger-like extensions or diffuse sheets of cells. Barrett's tissue is most commonly noted in the lower portion of the esophagus, but may extend throughout the entire esophagus or even be found isolated in the middle or upper portions of the esophagus.

When viewed under the microscope, Barrett's is usually classified as either a specialized or distinctive type or as a non-distinctive type. It is the distinctive type that is the most important, because of the increased tendency to transform into cancer.

How Does Barrett's Esophagus Develop?

When first studied, Barrett's esophagus was felt to be present at birth or a congenital condition. Nowadays, physicians have come to realize that with rare exception, Barrett's tissue develops as a complication of long standing or chronic gastroesophageal reflux disease.

Gastroesophageal reflux disease or GERD is a condition that occurs when acid produced in the stomach and/or bile from the liver moves in a reverse direction from the intestine and stomach and refluxes up into the esophagus. Once in the esophagus, the acid or bile irritates and damages the squamous lining and inflammation develops. GERD may be entirely asymptomatic or present as a burning or pressure-like sensation felt behind the breast bone.

After many years of reflux, some of the cells in the esophagus may begin to change into the glandular Barrett's tissue.

This transformation is actually a defense mechanism designed to protect the normal esophageal tissues from further damage. In fact, people with Barrett's esophagus have been found to be less likely to have symptoms in response to the reflux of acid into the esophagus.

Unfortunately, the body's attempt to protect itself instead creates a condition that is considered pre-malignant, and once the Barrett's tissue appears in the esophagus, the transformation is permanent, unless surgically or endoscopically removed.

How Often Does Barrett's Occur?

The number of cases of Barrett's esophagus has been increasing since 1970 owing to improved detection through the use of endoscopy. The exact frequency of this condition is difficult to determine accurately. Barrett's has been discovered in between 8-20% of patients undergoing endoscopic evaluation for GERD. It

is estimated that for every person found to have Barrett's, 20 additional cases go undetected.

For unknown reasons, the disease is found predominantly in Caucasian males. Men are three times more likely to have Barrett's than women. The number of people with Barrett's increases steadily with advancing age until the seventh decade of life. The average age when diagnosed with Barrett's is 63 years, but the disease has been found in children under age 10. It is thought that Barrett's may exist for up to 20 years before finally being diagnosed.

Barrett's esophagus is found more frequently in persons with GERD. In individuals with GERD, Barrett's is found more often in those with excessive acid production or frequent reflux of bile.

Why is Barrett's Esophagus Important?

Barrett's esophagus is very important because it has been definitively linked with an increased occurrence of an unusual type of cancer known as adenocarcinoma, which arises from adenomatous or glandular tissue.

Previously, most cancers in the esophagus were a squamous tissue type, which is related to smoking or alcohol use. However, with the decrease in cigarette and alcohol consumption, this type of cancer is declining.

The type of cancer associated with Barrett's esophagus, known as adenocarcinoma, has increased five to ten fold since 1970 for unclear reasons. Individuals with Barrett's esophagus are 30-125 times more likely to develop this type of esophageal cancer compared to the general population.

Although this statistic may be regarded initially as frightening, the fact is that the vast majority of people with this disorder never develop cancer. In addition, the overall survival of persons with Barrett's tissue is no different than that of the general population.

How Does Cancer Develop from Barrett's tissue?

Cancer does not directly develop from the Barrett's tissue in the esophagus. After many years, in a very small number of patients, the Barrett's tissue first develops into a group of dysplastic cells. Dysplastic cells have bizarre and disordered genetic material which is produced in the nucleus of the cell.

If left entirely untreated, the dysplastic cells continue to become more irregular and progress through three stages known as low, moderate and high grade dysplasia. The cancer develops after the cells have reached a high grade level of dysplasia. The entire process of conversion from low level dysplasia to cancer is estimated to take between 27-63 months.

Fortunately, only 5% of patients with Barrett's esophagus will progress through the different stages of dysplasia and develop an actual cancer of the esophagus. It has also been shown that aggressive medical treatment will reverse or prevent the progression to dysplasia or cancer.

How is Barrett's Esophagus Diagnosed?

Barrett's esophagus and GERD have similar symptoms and presentations. The typical symptoms of either disease are heartburn, indigestion or a sensation of pain/burning/pressure behind the breast bone. More serious symptoms include difficulty swallowing food or liquids, food sticking, regurgitation of food, acid or bile, and constant mid chest pain. The longer the symptoms have been present, the greater the likelihood of having Barrett's.

The only certain way to diagnose the existence of Barrett's esophagus is to undergo an upper gastrointestinal endoscopy. During the endoscopy the doctor will take a small tissue

