

## Barrett's Esophagus

The oesophagus is the medical name for the gullet. It is part of the digestive system. The oesophagus is a long tube that carries food from the throat to the stomach. The top part of oesophagus lies behind the windpipe (trachea). The bottom part runs down through the chest between the spine and the heart.

In Barrett's oesophagus the cells that line the lower oesophagus are abnormal. The main cause is long-standing reflux of acid from the stomach into the oesophagus.

People with Barrett's oesophagus have an increased risk of developing cancer of the oesophagus. The risk is small, but you may be advised to have regular endoscopies to detect pre-cancerous changes. Surgery to remove the oesophagus may be advised if pre-cancerous changes develop. Newer treatments such as laser treatment of the abnormal cells are being studied.

### *Understanding the oesophagus and stomach*

When we eat, food passes down the oesophagus (gullet) into the stomach. Cells in the lining of the stomach make acid and other chemicals which help to digest food. Stomach cells also make mucus which protects them from damage from the acid. The cells on the inside lining of the oesophagus are different and have little protection from acid.

There is a circular band of muscle (a 'sphincter') at the junction between the oesophagus and stomach. This relaxes to allow food down, but normally tightens up and stops food and acid leaking back up (refluxing) into the oesophagus. In effect, the sphincter acts like a valve.

The changed cells at the lower end of the oesophagus may not be cancerous. However, these cells have an increased risk (compared to

normal oesophagus cells) of turning cancerous in time. The risk is small. About 1 or 2 people in 100 with Barrett's oesophagus develop cancer of the oesophagus at some stage in their life.

It is thought that up to 1 in 10 people who have recurring acid reflux eventually develop Barrett's oesophagus. The risk is mainly in people who have had severe acid reflux for many years. However, some people who have had fairly mild symptoms of reflux 'on and off' for years develop Barrett's oesophagus.

### *More about acid reflux*

Heartburn is the main symptom. It is a burning feeling that rises from the upper abdomen or lower chest up towards the neck. (It is confusing as it has nothing to do with the heart!). Other common symptoms include: pain in the upper abdomen and chest, feeling sick, an acid taste in the mouth, bloating, belching, and a burning pain when you swallow hot drinks. Like heartburn, these symptoms tend to come and go, and tend to be worse after a meal.

The sphincter at the bottom of the oesophagus normally prevents acid reflux. Problems occur if the sphincter does not work very well. This is common, but in most cases it is not known why it does not work so well. Having a hiatus hernia makes you more prone to reflux. A hiatus hernia is when part of your stomach protrudes through the diaphragm into the lower chest. (See separate leaflet called 'Hiatus Hernia'.)

Most people have heartburn at some time, perhaps after a large meal. However, about 1 in 3 adults have some heartburn every few days, and nearly 1 in 10 adults have heartburn at least once a day. In many cases it is mild and soon passes. However, it is quite common for symptoms to be frequent or severe enough to affect quality of life. It is people who have severe and long-standing reflux who are more likely to develop Barrett's Oesophagus.

A medicine which prevents your stomach from making acid is a common treatment and usually works well. Some people take short courses of treatment when symptoms flare up. Some people need long-term daily treatment to keep symptoms away. An operation to 'tighten' the sphincter muscle is an option in severe cases which do not respond to medication, or where full dose medication is needed every day to control symptoms.

### *Diagnosis*

#### *Endoscopy (Gastroscopy)*

This test can usually diagnose Barrett's oesophagus. You may have an endoscopy if you have severe or persistent symptoms of acid reflux. For this test, a thin, flexible telescope is passed down the oesophagus into the stomach. This allows a doctor to look inside. The change in colour of the lining of the lower oesophagus from its normal pale white to a red colour strongly suggests that Barrett's oesophagus has developed.

#### *A biopsy*

If Barrett's oesophagus is suspected during endoscopy, then several small samples (biopsies) are taken of the lining of the oesophagus during the endoscopy. These are sent to the lab to be looked at under the microscope. The characteristic columnar cells which are seen confirm the diagnosis.

The cells are also examined to see if there are any further changes called 'dysplasia'. A dysplasia cell is an abnormal cell. It is not cancerous, but is more likely to develop into cancer than other cells. It is often called a 'pre-cancerous' cell.

There are various degrees of dysplasia from low-grade dysplasia to high-grade (severe) dysplasia. Cells that are classed as high-grade dysplasia have a high risk of turning cancerous at some point in the future.

## *Treatment*

For acid reflux you are likely to be advised to take acid-suppressing medication for the rest of your life.

When you have been diagnosed with Barrett's oesophagus, you may be advised to have an endoscopy and biopsy at regular intervals to monitor the condition. This is called 'surveillance'. The biopsy samples aim to detect whether dysplasia has developed, in particular if high-grade dysplasia has developed. However, there is debate as to the value of surveillance, and if it is done, how often it should be done. Briefly, some doctors argue that most people with Barrett's oesophagus do not develop cancer. Many people would need to have regular endoscopies to detect the very few who develop high-grade dysplasia.

The exact time period between each endoscopy and biopsy sample can vary from case to case. It may be every 2-3 years if there are no dysplasia cells detected. Once dysplasia cells are found, the check may be advised every 3-6 months or so. If high-grade dysplasia develops, you may be offered an operation to remove the oesophagus. However, this is a major operation, with risks. Your specialist should advise on the pros and cons of such a large operation.

In addition, complications are likely to occur in a small number of people who have endoscopy. Even if you develop high-grade dysplasia and have an operation to remove the oesophagus, there is about a 1 in 20 chance that you would die from the operation itself (it is a big operation).

## *Newer treatments being investigated*

Ways of removing just the abnormal cells from the lining of the oesophagus are being studied. For example, by using lasers during endoscopy it is possible to 'burn' off the abnormal cells. A recent refinement of this is called photodynamic therapy.

Photodynamic therapy (PDT) is a type of laser treatment. For this you are given a drug that makes your cells very sensitive to light for several hours. After being given the drug you have an endoscopy. During the endoscopy a laser light is shone at the abnormal section of your oesophagus. The cells which are sensitised by the drug react to the laser light which destroys the cells. Nearby normal cells then multiply and replace the destroyed abnormal cells.

At present photo-dynamic therapy is at the experimental stage. Research is needed to assess how well it works in most cases.