

## Peptic Ulcer Disease

Peptic ulcer disease (PUD) is a very common ailment, affecting one of eight persons in the United States. The causes of PUD have gradually become clear. With this understanding have come new and better ways to treat ulcers and even cure them.

### **Anatomy and Function of the Stomach**

The stomach produces a very strong acid. This acid helps digest and break down food before it enters the small intestine (duodenum). The lining of the stomach is covered by a thick protective mucous layer, which prevents the acid from injuring the wall of the stomach.

### **What causes Peptic Ulcers?**

An ulcer is an open sore in the lining of the stomach or intestine, much like mouth or skin ulcers. Acid and pepsin, a digestive stomach enzyme eventually causes peptic ulcers. These ulcers can occur in the stomach, where they are called gastric ulcers. Or they can occur in the first portion of the intestine. These are called duodenal ulcers. In the end, it is acid that caused the injury to the stomach or bowel lining. However, a revolutionary and startling recent discovery is that most peptic ulcers result from a stomach infection caused by the bacteria, *Helicobacter pylori*.

### **Helicobacter pylori (H. Pylori)**

The funny-sounding name identifies the basic cause of most peptic ulcers, excluding those caused by aspirin or arthritis drugs. This bacterium has a twisted spiral shape and infects the mucous layer lining of the stomach. This infection produces an inflammation in the stomach wall called gastritis. The body even develops a protein antibody in the blood against it. The bacteria are probably acquired from the contaminated food or from a drinking glass. It is only after *H. pylori* bacteria injure the protective mucous layer or the stomach, allowing damage by stomach acid, that an ulcer develops.

### **Aspirin and Arthritis Medications**

Arthritis medications include ibuprofen (Advil), Feldene, Naprosyn, Voltaren, Indocin, Aleve, Lodine, and many others. As with aspirin, they can damage the mucous layer of the stomach, after which the stomach acid causes the final injury.

So *H. pylori* and certain drugs are the two major factors that cause ulcers. In rare cases, a patient will produce very large amounts of acid and develop ulcers. The condition is called Zollinger-Ellison syndrome. Finally, some people get ulcers for unknown reasons.

### **Symptoms**

Ulcers cause gnawing, burning pain in the upper abdomen. These symptoms frequently occur several hours following a meal, after the food leaves the stomach but while acid production is still high. The burning sensations can occur during the night and be so extreme as to wake the patient. Instead of pain, some patients experience intense hunger or bloating. Antacids and milk usually give temporary relief. Other patients have no pain but have black stools, indicating the ulcer is bleeding. Bleeding is a very serious complication of ulcers.

### **Diagnosis**

A diagnosis of peptic ulcers can be suspected from the patient's medical history. However, the diagnosis should always be confirmed either by an upper intestinal endoscopy, which allows direct examination of the

ulcer through a fiber optic instrument (endoscope), or by a barium x-ray of the stomach. Rarely an ulcer can be malignant. With endoscopy, a biopsy specimen can be obtained to determine if this is so.

### **Treatment**

Therapy of PUD has undergone profound changes. There are now available very effective medications to suppress and almost eliminate the outpouring of stomach acid. These acid-suppressing drugs have been dramatically effective in relieving symptoms and allowing ulcers to heal. If aspirin or an arthritis drug has caused an ulcer, then no subsequent treatment is usually needed. Avoiding these latter drugs should prevent ulcer recurrence.

The second major change in PUD treatment has been the discovery of the *H. pylori* infection. When this infection is treated with antibiotics, the infection, and the ulcer, do not come back. Increasingly, physicians are not just suppressing the ulcer with acid-reducing drugs, but they are also curing the underlying ulcer problem by getting rid of the bacterial infection. If this infection is not treated, the ulcers invariably recur.

There are a number of antibiotic programs available to treat *H. pylori* and cure ulcers. Working with the patient, the physician will select the best treatment program available.

### **What Else Can Be Done?**

The factors discussed above have altered the approach to ulcers in a dramatic way. Still, other factors are important too:

*Caffeine and Alcohol*- Both of these stimulate the secretion of stomach acid and should be avoided in the acute phase of an ulcer.

*Cigarettes*- Nicotine will delay the healing of an ulcer. There are many good reasons to stop cigarette smoking. Healing an ulcer is one of them.

*Antacids*- These agents, purchased over the counter, can be used for relief of peptic ulcer symptoms. Except for bismuth (Pepto Bismol), which actually is used as one of the antibiotics, they do not help heal ulcers.

*Stress*- In the past, stress and emotion were felt to be a major cause of ulcers. Now it is known that, by itself, stress rarely causes an ulcer although it probably can aggravate the symptoms.

*Surgery*- Surgery is used to be a major form of ulcer treatment. Now, it is the exceptional patient who needs surgery for an ulcer complication such as perforation, obstruction, or uncontrolled hemorrhaging.