Definition

In general, an ulcer is any eroded area of skin or a mucous membrane, marked by tissue disintegration. In common usage, however, ulcer is usually used to refer to disorders in the upper digestive tract. The terms ulcer, gastric ulcer, and peptic ulcer are often used loosely and interchangeably. Peptic ulcers can develop in the lower part of the esophagus, the stomach, the first part of the small intestine (the duodenum), and the second part of the small intestine (the jejunum).

Description

It is estimated that 2% of the adult population in the United States has active peptic ulcers, and that about 10% will develop ulcers at some point in their lives. There are about 500,000 new cases of peptic ulcer in the United States every year, with as many as 4 million recurrences. The male/female ratio for ulcers of the digestive tract is 3:1.

The most common forms of peptic ulcer are duodenal and gastric. About 80% of all ulcers in the digestive tract are duodenal ulcers. This type of ulcer may strike people in any age group but is most common in males between the ages of 20 and 45. The incidence of duodenal ulcers has dropped over the past 30 years. Gastric ulcers account for about 16% of peptic ulcers. They are most common in males between the ages of 55 and 70. The single most common cause of gastric ulcers is the use of nonsteroidal anti-inflammatory drugs, or NSAIDs. The widespread use of NSAIDs is thought to explain why the incidence of gastric ulcers in the United States is rising.

Causes of peptic ulcers

There are three major causes of peptic ulcers: infection, certain types of medication, and disorders that cause oversecretion of stomach juices.

HELICOBACTER PYLORI INFECTION.Helicobacter pylori is a rod-shaped gram-negative bacterium that lives in the mucous tissues that line the digestive tract. Infection with H. pylori is the most common cause of duodenal ulcers. About 95% of patients with duodenal ulcers are infected with H. pylori, as opposed to only 70% of patients with gastric ulcers.

USE OF NONSTEROIDAL ANTI-INFLAMMATORY DRUGS (NSAIDS). Nonsteroidal anti-inflammatory drugs, or NSAIDs, are painkillers that many people use for headaches, sore muscles, arthritis, menstrual cramps, and similar complaints. Many NSAIDs are available without prescriptions. Common NSAIDs include aspirin, ibuprofen (Advil, Motrin), flurbiprofen (Ansaid, Ocufen), ketoprofen (Orudis), and indomethacin (Indacin). Chronic NSAID users have 40 times the risk of developing a gastric ulcer as nonusers. Users are also three times more likely than nonusers to develop bleeding or fatal complications of ulcers. Aspirin is the NSAID that is most likely to cause ulcers.

MISCELLANEOUS SYNDROMES AND DISORDERS. Fewer than 5% of peptic ulcers are due to these disorders. They include Zollinger-Ellison syndrome, a disorder in which small tumors, called gastrinomas, secrete a hormone (gastrin) that stimulates the production of digestive juices. Because of this excess secretion, these disorders are sometimes called hypersecretory syndromes.

OTHER RISK FACTORS. Smoking is an important risk factor that increases a patient's chance of developing an ulcer, decreases the body's response to therapy, and increases the chances of dying from ulcer complications. Blood type appears to be a predisposing factor for ulcer location; people with type A blood are more likely to have gastric ulcers, while those with type O are more likely to develop duodenal ulcers. The role of emotional stress in ulcer development is currently debated. Present research indicates that an individual's attitudes toward stress, rather than the amount of stress by itself, is a better predictor of vulnerability to peptic ulcers. Preferences for high-fat or spicy foods do not appear to be significant risk factors.

Symptoms

GASTRIC ULCERS. The symptoms of gastric ulcers include feelings of indigestion and heartburn, weight loss, and repeated episodes of gastrointestinal bleeding. Ulcer pain is often described as gnawing, dull, aching, or resembling hunger pangs. The patient may be nauseated and suffer loss of appetite. About 30% of patients with gastric ulcers are awakened by pain at night. Many patients have periods of chronic ulcer pain alternating with symptom-free periods that last for several weeks or months. This characteristic is called periodicity.

DUODENAL ULCERS. The symptoms of duodenal ulcers include heartburn, stomach pain relieved by eating or antacids, weight gain, and a burning sensation at the back of the throat. The patient is most likely to feel discomfort two to four hours after meals, or after having citrus juice, coffee, or aspirin. About 50% of patients with duodenal ulcers awake during the night with pain, usually between midnight and 3 A.M. A regular pattern of ulcer pain associated with certain periods of day or night or a time interval after meals is called rhythmicity.

Not all digestive ulcers produce symptoms; as many as 20% of ulcer patients have so-called painless or silent ulcers. Silent ulcers occur most frequently in the elderly and in chronic NSAID users.

Complications

Between 10–20% of peptic ulcer patients develop complications at some time during the course of their illness. All of these are potentially serious conditions. Complications are not always preceded by diagnosis of or treatment for ulcers; as many as 60% of patients with complications have not had prior symptoms.

HEMORRHAGE. Bleeding is the most common complication of ulcers. It may result in anemia, vomiting blood (hematemesis), or the passage of bright red blood through the rectum (melena). About half of all cases of bleeding from the upper digestive tract are caused by ulcers. The mortality rate from ulcer hemorrhage is 6–10%.

PERFORATION. About 5% of ulcer patients develop perforations, which are holes in the duodenal or gastric wall through which the stomach contents can leak out into the abdominal cavity. The incidence of perforation is rising because of the increased use of NSAIDs, particularly among the elderly. The signs of an ulcer perforation are severe pain, fever, and tenderness when the doctor touches the abdomen. Most cases of perforation require emergency surgery. The mortality rate is about 5%.

PENETRATION. Ulcer penetration is a complication in which the ulcer erodes through the intestinal wall without digestive fluid leaking into the abdomen. Instead, the ulcer penetrates into an adjoining organ, such as the pancreas or liver. The signs of penetration are more severe pain without rhythmicity or periodicity, and the spread of the pain to the lower back.

OBSTRUCTION. Obstruction of the stomach outlet occurs in about 2% of ulcer patients. It is caused by swelling or scar tissue formation that narrows the opening between the stomach and the duodenum (the pylorus). Over 90% of patients with obstruction have recurrent vomiting of partly digested or undigested food; 20% are seriously dehydrated. These patients also usually feel full after eating only a little food, and may lose weight.

Prevention

Strategies for the prevention of ulcers or their recurrence include the following:
eradication of H. pylori in patients already diagnosed with ulcers
giving misoprostol to patients who must take NSAIDs
avoiding unnecessary use of aspirin and NSAIDs
giving up smoking
cutting down on alcohol, tea, coffee, and sodas containing caffeine