



Functional Heartburn

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Functional Disorders of the Esophagus—Functional disorders of the esophagus (the tube which passes food to the stomach) are defined as “a variable combination of chronic or recurrent symptoms attributed to the esophagus, not readily explained by structural or biochemical abnormalities.” A single or combination of symptoms may be present, such as heartburn, regurgitation, dysphagia (sensation of food or liquid sticking in esophagus), chest pain, or globus sensation (feeling a lump or tightness in the throat). The disorders can affect people of all ages.

Characteristics of Functional Heartburn—Functional heartburn is characterized by episodes of burning discomfort in the chest, behind the breastbone. There is no evidence of inflammation in the lining of the esophagus or other disease. The discomfort generally comes in waves, occurs after meals and can be accompanied by belching, regurgitation, or dyspeptic symptoms, such as upper abdominal discomfort, bloating, or early feeling of being full. It occurs primarily during the day. Functional heartburn is thought to be very common, occurring in about 20% of individuals according to several studies, and tends to affect more women than men.

Diagnostic Procedures—If the symptoms of functional heartburn are episodic, short lasting and well controlled with antacids, diagnostic tests are not needed. With more severe symptoms, a physician will first test with upper GI endoscopy (a diagnostic test which allows a physician to inspect the lining of the upper gastrointestinal tract through a thin flexible tube which is swallowed) looking for inflammation in the lining of the esophagus—a condition called esophagitis.

If esophagitis is not detected, gastric acid activity in the esophagus will be investigated, looking for the presence of gastroesophageal reflux disease (GERD). This can be done with 24-hour esophageal pH monitoring to measure acid reflux—the backflow of stomach acid into the esophagus.

If the number of acid reflux episodes or the amount of time gastric acid spends in the esophagus exceeds normal values, the symptoms will be considered as pathologic (caused by underlying reflux) and a diagnosis of GERD will be made.

On the other hand, reflux values falling within the normal range, especially for people who are active and eating regular

meals, suggest the presence of physiologic, or functional reflux. The search for a passing relationship between acid reflux and heartburn may be useful. If this relationship is present, the patient has a better response to traditional anti-reflux treatment.

Causes—Studies suggest that people with functional heartburn may be divided into two groups. The first and smallest group is those that have a solid correlation between heartburn and acid reflux by 24 hour pH monitoring. These people may be hypersensitive to a normal amount of acid or, more likely, pH monitoring may be missing abnormal quantities of acid reflux.

The second group is made up of those whose symptoms are generally unrelated to specific reflux episodes. The underlying

cause of these complaints is unknown but may be secondary to bile salts, concentration of solutions, mechanical distention, heightened esophageal awareness, or other yet unstudied factors.

Many reflux patients believe that environmental stressors increase the likelihood of reflux symptoms. A Gallup survey reported that 64% of respondents believe that stress worsened their reflux symptoms. Laboratory studies tend to confirm these observations.

Studies from my laboratory found that prolonged exposure to a stressful stimulus, such as rapid problem solving, compared to neutral events, such as listening to soothing music, produce significant increases in the report of reflux symptoms, while the actual amount of acid reflux, measured by esophageal pH monitoring, was not different between groups. The patients with the most pain were those experiencing the highest levels of anxiety.

Treatment—From a practical standpoint, a rational therapeutic approach to functional heartburn should begin with lifestyle changes—such as eliminating certain spicy or fatty foods, elevating the head while sleeping, decreasing or stopping smoking, or reducing activities that cause stress—and the use of antacids or alginic acid. If this approach fails, your doctor may prescribe a short course of medication that inhibits

or prevents reflux, such as prokinetics, H2 blockers, or proton pump inhibitors. However, generally the response to these medications in those with functional heartburn is not as good as in those with esophagitis or pathologic reflux as measured by 24 hour pH monitoring.

Relaxation techniques may affect the lower esophageal sphincter, a muscle that closes the passage between the stomach and the esophagus. When the lower esophageal sphincter relaxes at an inappropriate time, it allows acid to reflux into the esophagus.

We have recently found that relaxation therapy with deep breathing reduces functional heartburn symptoms. This technique was associated with both decreased report of symptoms and decreased reflux episodes by 24-hour pH monitoring. It is possible that the diaphragmatic breathing associated with relaxation training increases the pressure of the surrounding diaphragm, thereby increasing overall lower esophageal sphincter pressure which in turn reduces the number of reflux episodes and associated heartburn.

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