

Question 1 – Week of November 9

Which of the following is true concerning the pathophysiology of GERD-related extraesophageal symptoms?

- A. The lower esophageal sphincter is susceptible to reflux of gastric contents only in the pathophysiologic state.
- B. The esophageal-bronchial reflex produces extraesophageal symptoms when acid receptors from the spinal accessory nerve sense acidification of the esophagus.
- C. Microaspiration during reflux episodes is one theory that explains how extrasophageal symptoms are produced.
- D. The lower esophageal sphincter is the only defense mechanism against GERD-induced extraesophageal symptoms.

Answer: C

Microaspiration during reflux episodes has been proposed as one of the two mechanisms for the etiology of extraesophageal manifestations of GERD. The other mechanism relates to the esophageal-bronchial reflex, which is mediated by the vagus nerve not the spinal accessory nerve. Since the esophagus, larynx and bronchopulmonary system share common innervation via the vagus nerve, it is thought that acid sensed in the distal esophagus translates into extraesophageal symptoms.

The lower esophageal sphincter is susceptible to regurgitation in both the pathologic and physiologic states. The physiologic regurgitant episodes are transient and cause no harm. In health, a number of factors are protective in defending against gastric reflux gaining access to extraesophageal sites. There are 4 “tiers of defense”: the LES, the esophageal body, the UES and the airway-protective mechanisms (I.e. coughing). Any breach in one of these barriers can produce extraesophageal manifestations of GERD.

Reference:

1. Irwin RS, Richter JE. Gastroesophageal reflux and chronic cough. Am J Gastroenrol 2000;95 (suppl 8)S9-S14.