Focus on Clinical Assessment

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GASTROESOPHAGEAL REFLUX DISEASE

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Gastroesophageal reflux disease (GERD) refers to symptoms or tissue damage, resulting from retrograde movement of gastric contents. The prevalence of GERD seems to be increasing across the globe (El-Serag, Sweet, Winchester, & Dent, 2014). As the most common gastrointestinal disorder, GERD is estimated to cost the United States nearly $2 billion in lost productivity weekly (Woolard & Christie, 2018).

While GERD can develop throughout the lifespan, prevalence peaks between 30 and 60 years of age. GERD occurs equally among men and women, although men and older adults are more likely to experience GERD-related complications. The incidence of GERD is also increasing within pediatric populations, including infants (Patti, 2017; Xie et al., 2013). Encountered frequently by gastroenterologists, primary care providers, and nurses alike—appropriate clinical assessment of GERD is of vital importance (Katz, Gerson, & Vela, 2013).

Physiology

The process of GERD occurs throughout the general population approximately once per hour, followed by swift clearance of refluxed material from the distal esophagus without injury. The swallowing process begins primary peristalsis. Esophageal distention or acidification promotes secondary peristalsis. When the esophageal mucosa's capacity to tolerate caustic refluxate is overwhelmed, pathologic GERD symptoms begin to emerge. A patient is reported to have GERD, the presence of chronic symptom distress, with or without mucosal damage (Freshman, 2017).

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TABLE 1. GERD Risk Factors and Commonly Associated Conditions[a]

Risk factors
Obesity
Pregnancy
Hiatal hernia
Alcohol use
Scleroderma
Tobacco use
Commonly associated conditions
Barrett's esophagus
Peptic ulcer disease
Peptic stricture (10% of patients with GERD)
Erosive esophagitis
Nonerosive esophagitis
Esophageal adenocarcinoma
Irritable bowel syndrome
Extraesophageal reflux, aspiration, chronic cough, laryngitis, vocal cord granuloma, otitis media
Halitosis
Hiatal hernia: acid pocket (zone of high acidity in the proximal stomach above the diaphragm

Note. GERD = gastroesophageal reflux disease.

[a]Derived from "Gastroesophageal Reflux Disease," by F. Akhtar, A. Tenorio, and A. Sanchez, 2019, *The 5-Minute Clinical Consult*, Philadelphia, PA: Wolters Kluwer.

The clinical spectrum of GERD is wide and ranges from nonerosive reflux disease to erosive esophagitis. Patterns and mechanisms of GERD vary depending on disease severity (Akhtar, Tenorio, & Sanchez, 2019). The etiology of GERD is multifactorial; yet, transient lower esophageal sphincter relaxations (TLESRs) are a major pathologic contributor. A TLESR is defined as relaxation of the lower esophageal sphincter in response to gastric distention (Woolard & Christie, 2018). TLESRs can be triggered by increased gastric acid production, delayed gastric emptying, distention, diminished esophageal clearance, diet, and medications. Patients with severe GERD frequently have evidence of a hiatal hernia that can cause

- impaired gastric emptying,
- acid trapping in the hernial sac,
- increased retrograde acid flow rates,
- increased frequency of lower esophageal sphincter relaxations, and
- reduced esophagogastric junction sphincter pressure

A small proportion of people with GERD will develop Barrett's esophagus, a risk factor for adenocarcinoma (Woolard & Christie, 2018).

Presentation

Abnormalities, which cannot be directly observed (such as in the case of GERD), are often detected through patient histories (Weber & Kelley, 2018). Thorough history taking is critical to accurately assess GERD and distinguish symptoms (Table 1). Important information to elicit from patients and families during health histories related to GERD includes:

- History of heartburn (most common symptom), which manifests as retrosternal burning/discomfort—often occurring after meals and worsening with stooping, bending, or lying down
- Time of symptom onset (GERD is typically worse at night)
- Presence of extraesophageal symptoms, including sore throat, bronchospasm, chronic coughing, difficult-to-treat asthma, wheezing, and/or lung damage
- Presence of atypical symptoms including epigastric fullness/pressure/pain, nausea, dyspepsia, bloating, bitter belching, sour stomach sensation, chest pain, and/or a lump in the throat
- Consumption of food/drinks associated with GERD such as, particularly large meals, substances with high fat/sugar concentrations, chocolate, caffeine, coffee, onions, carbonated drinks, and/or alcohol as these lower esophageal sphincter pressure
- Intake of citrus products, tomato-based and/or spicy food as these substances are mucosal irritants
- Progression, pattern, and severity of symptoms
- Complaints of regurgitation and/or sour taste in mouth (also known as "water brash")
- New/increased use of predisposing medications such as calcium channel blockers, hormones, β-adrenergic agents (albuterol), barbiturates, and nitrates, which can decrease lower esophageal sphincter tone
- Feeding/mealtime routine (inquire about nipple flow/type in bottle-fed infants)
- Complaints of alarm symptoms (see Table 2) and/or new onset in males older than 50 years

It is important to note that esophageal disorders are the most common cause of noncardiac chest pain (Akhtar et al., 2019). Potentially life-threating cardiac etiologies must be excluded prior to diagnostic pursuit of GERD as a cause of chest pain (Woolard & Christie, 2018). Symptoms more suggestive of esophageal problems include chest pain that continues for hours and/or interrupts sleep, is described as retrosternal, without lateral radiation, and is linked to meals and/or relieved with antacids (Freshman, 2017). Patients with GERD symptoms should be encouraged to keep a detailed food log. There are several electronic applications available for free or a minimal expense. Many of these applications have embedded reminder systems, help organize recorded information, and allow for ease of virtual accessibility (Freshman, 2017).

TABLE 2. GERD Symptoms[a]

Typical symptoms
Most common
Heartburn—described as a substernal burning sensation, possibly radiating to the back and/or neck
Regurgitation or feeling of retrograde movement of stomach contents up the chest and often into the mouth
Dysphagia—description of difficulty swallowing, reported in approximately 30% of patients with GERD
Less common
Water brash (excess saliva mixed with stomach acid, accumulated and regurgitated from the lower esophagus)
Burping
Hiccups
Nausea
Vomiting
Odynophagia (painful swallowing, which occurs in severe esophagitis)
Distal esophageal spasm
Hypertensive peristalsis (jackhammer esophagus)
Hypotensive peristalsis (scleroderma)
Atypical symptoms
Chest pain
Chronic cough
Difficult-to-treat asthma or wheezing
Laryngeal symptoms (sore throat, throat clearing, hoarseness)
Alarm symptoms
Weight loss
Hematemesis and bleeding
Dysphagia
Odynophagia
Vomiting
Early satiety
Choking/apnea (pediatric considerations)

Note. GERD = gastroesophageal reflux disease.

[a]Derived from "Gastroesophageal Reflux Disease," by F. Akhtar, A. Tenorio, and A. Sanchez, 2019, *The 5-Minute Clinical Consult*, Philadelphia, PA: Wolters Kluwer.

Physical Examination

Careful histories are likely to contribute more meaningfully to GERD assessment, as physical examinations are often unremarkable. Nurses should make note of any dental erosions/exposed dentin, presence of halitosis (bad breath), stigmata of chronic systemic disease, epigastric tenderness, and/or palpable epigastric mass. Any abdominal mass would be suggestive of a possible malignant neoplasia. Weight loss is a concern, particularly in patients with co-occurring dysphasia; by contrast obesity can contribute to symptoms. Body mass index should be calculated (Akhtar et al., 2019; Freshman, 2017).

Diagnostic Work-Up

A proton pump inhibitor (PPI) trial is the simplest approach to diagnosing uncomplicated GERD and evaluating symptomatic responses to treatment. A 30-day PPI trial taken once daily 1 hr before breakfast is typically recommended. If a patient has GERD, symptom improvement on a PPI is usually noted by 7–14 days. If no improvement is noted with the PPI trial, additional diagnostic work-up is recommended (Akhtar et al., 2019). Upper endoscopy is recommended for all patients with alarm symptoms and is used to detect GERD complications such a Barrett's esophagus, strictures, and other upper gastrointestinal disorders (Woolard & Christie, 2018).

Clinical Pearls

Treatment of GERD correlates with symptom severity. Recommended therapy can include lifestyle modifications, medication, surgery, or a combination of these. Although lifestyle modifications alone are unlikely to fully control GERD symptoms, modifications such as weight loss, raising the head of the bed to at least a 30° angle, decreasing meal sizes, smoking cessation, reduction of alcohol intake and dietary fat, and avoidance of offending foods and caffeinated/carbonated drinks (Freshman, 2017) are considered first-line treatment for patients with mild, infrequent symptoms (Woolard & Christie, 2018).

Daily use of a PPI is the treatment mainstay in patients with typical GERD symptoms (Katz, Gerson, & Vela, 2013). Surgical treatment may be appropriate for patients who do not desire long-term medication management or for those whose GERD complications persist despite adherence to recommended lifestyle modifications and medication management. Surgery may be required for pediatric patients experiencing, apnea, choking, and/or persistent vomiting (Akhtar et al., 2019). In patients experiencing atypical or refractory symptoms, ambulatory pH testing and/or impedance testing are helpful in determining whether or not symptoms are truly caused by GERD (Woolard & Christie, 2018).

Early diagnosis and treatment of GERD is key. Undetected GERD can lead to Barrett's esophagus with occasional progression to adenocarcinoma (Woolard & Christie, 2018). Since many people control symptoms with over-the-counter medications, GERD is likely underreported (Patti, 2017). Timely GERD detection and intervention results in reduction of symptoms, complications, and cost burdens, with parallel increases in patient, family, and community life qualities (Woolard & Christie, 2018).

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