

Diverticular Disease of the Gastrointestinal Tract



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KEYWORDS

- Diverticular disease • Gastrointestinal tract • Esophagus • Stomach
- Small Intestine • Colon • Diverticular Bleeding • Diverticulosis

KEY POINTS

- Almost all gastrointestinal tract diverticula require no intervention if they are asymptomatic.
- There is no clear diagnostic modality of choice for diagnosis and surveillance of diverticulum.
- Medical treatment should be attempted before surgical intervention because significant morbidity is associated with resection.

ANATOMY AND CLASSIFICATION

Diverticula develop throughout the gastrointestinal tract because of a myriad of factors. The most common factors include abnormal pressure gradients, dysfunctional peristalsis, and defects of the bowel wall. In general, the gastrointestinal tract consists of the submucosal, mucosal, and muscular layers. A diverticulum is a pouch structure projecting outward from the canal and may contain one or more of these layers. In general, there are 2 broad categories of diverticula: true and false. A false diverticulum is a protrusion of the submucosa and mucosa through a defect in the muscular wall of the gastrointestinal tract. A true diverticulum is a protrusion of all layers of the gastrointestinal tract wall. This classification does not seem to impact decisions on treatment. Treatment is more directed by size, location, and symptoms of the diverticula.

ESOPHAGUS

Upper Esophagus

Zenker diverticulum is a false diverticulum that develops in the upper posterior esophagus. For unclear reasons, a Zenker diverticulum is more common in men and typically presents after the age of 60. It affects only 2 per 100,000 patients per year. Most upper esophageal diverticula are asymptomatic. Over time, patients may begin to experience symptoms of dysphagia, aspiration, and regurgitation of undigested food.

The author has nothing to disclose.

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A Zenker diverticulum develops in an area known as Killian triangle. The area is located between the inferior pharyngeal constrictors and the cricopharyngeal muscles. There appears to be an age-related descent of the larynx, which results in the inferior constrictor pharyngeal musculature taking an oblique course. This oblique course results in a weak spot and the subsequent potential for development of a false diverticulum. The exact cause is unclear, but proposed mechanisms suggest a combination of a dysfunction in coordinated swallowing-muscle movement and an increased intraluminal pressure in the esophagus. There may also be a component of long-term upper esophageal sphincter irritation from gastroesophageal reflux disease with Zenker diverticulum development.¹

Diagnosis can be made endoscopically or radiologically. The preferred method is with barium swallow imaging, although small diverticulum may be difficult to identify (Fig. 1). Although endoscopic direct visualization is possible, caution should be exercised because of the risk of perforation with the blind insertion into the upper esophagus that occurs during endoscopy. Small asymptomatic diverticulum should be monitored, and regardless of symptoms, any Zenker diverticulum greater than 2 cm in size should be surgically evaluated and considered for repair. Methods for closure include endoscopic management or traditional surgical resection. Most advocate for endoscopic management because it is less invasive and has a lower complication rate and mortality.² There is a higher risk of recurrence with endoscopic repair versus surgical resection. More than 90% of patients will demonstrate symptom improvement; recurrence rates can be as high as 35%.³

Middle Esophagus

Traction diverticula are diverticula that form in the middle of the esophagus. These rare, true diverticula were named because of their proposed mechanism of formation. Their size tends to stay small, usually less than 2 cm. One possible mechanism is a precedent pulmonary infection (tuberculosis or histoplasmosis) that results in mediastinal lymph node formation. As the lymph nodes regress in size, fibrosis and scarring cause a traction point in the middle esophagus. This traction point serves as the initiation and is coupled with age-related changes from the dysfunction of coordinated swallowing-muscle movement and intraluminal pressure in the esophagus, which results in the formation of a diverticulum. It is unclear exactly how traction diverticulum

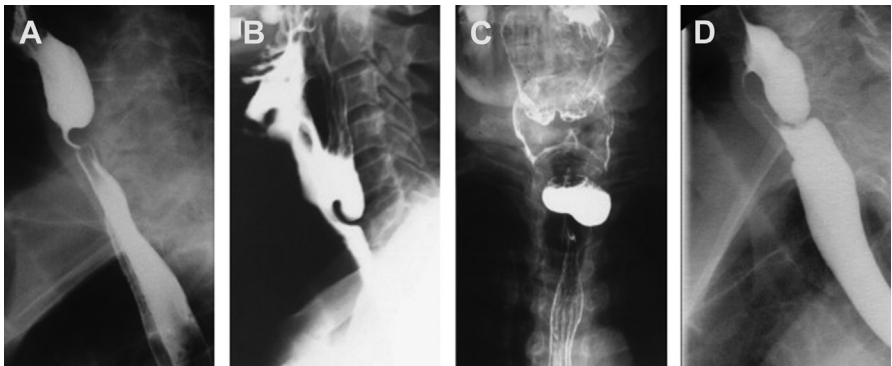


Fig. 1. Esophagram depicting (A) lateral view of a cricopharyngeal bar, (B) a lateral view of a small Zenker diverticulum, (C) its associated anterior-posterior view, and (D) a lateral view of a large Zenker diverticulum. (From Prisman E, Genden EM. Zenker diverticulum. *Otolaryngol Clin North Am* 2013;46(6):1101–11; with permission.)

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