Medication Ineffectiveness due to Zenker Diverticulum in a Compliant Patient
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Otolaryngology -- Head and Neck Surgery 2011 145: 872 originally published online 26 August 2011
DOI: 10.1177/0194599811420547

The online version of this article can be found at:
http://oto.sagepub.com/content/145/5/872
A 59-year-old man presented with a 5-year history of progressively worsening daily regurgitation and dysphagia. A barium swallow study demonstrated a large Zenker diverticulum (Figure 1). Because of its size and symptoms, an endoscopic Zenker diverticulotomy was performed.

A Weerda articulating laryngoscope was used to expose the diverticulum sac. A 0° rigid Hopkins endoscope (Karl Storz, Charlton, Massachusetts) provided high-definition images (Figure 2A-C). As the sac was decompressed of its contents, a recently ingested Achepex (Rabeprazole, Eisai Inc, Woodcliff Lake, New Jersey) pill was discovered undigested within the diverticulum. It was removed, and no mucosal abnormalities of the sac were seen. An Ethicon Endopath ETS 35-mm Linear Cutter (Ref ATW35, Ethicon Endo-Surgery, Inc, Cincinnati, Ohio) was used to divide the sac and cricopharyngeus muscle endoscopically. Postoperatively, the patient had no complications, maintained complete resolution of symptoms, and was able to successfully swallow pills without difficulty. The Institutional Review Board of the Cleveland Clinic (Cleveland, Ohio) approved this study.

Discussion
A Zenker diverticulum is a sac or out-pouching of the pharyngeal wall above the cricopharyngeus muscle. In 1878, Zenker proposed that this occurs because of increased hypopharyngeal pressure generated during deglutition in the region of Killian dehiscence. Patients may experience dysphagia, chronic cough, regurgitation of undigested food, halitosis, and hoarseness. With increasing pouch size, symptoms progress in severity, possibly causing weight loss, aspiration-related pneumonia, and malnutrition.

Pill entrapment in the diverticulum, as demonstrated in these images, is a well-recognized concern, especially in patients with serious comorbidities or diseases that require essential drug therapy. Patients may complain of pill regurgitation or an inability to swallow pills. This may lead to medication ineffectiveness and the possible deterioration of potentially treatable medical conditions. For these reasons, patients with symptomatic Zenker diverticulum may significantly benefit from surgical treatment.

Author Contributions
Rahul Seth, substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data; drafting the article or revising it critically for important intellectual content; final approval of the version to be published. Joseph Scharpf, corresponding author; substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data; drafting the article or revising it critically for important intellectual content; final approval of the version to be published.

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Disclosures

Competing interests: None.
Sponsorships: None.
Funding source: None.

References


Figure 2. (A) Exposure of the Zenker diverticulum demonstrated an undigested pill the patient had swallowed the day prior to surgery. An orogastric tube is positioned in the esophagus. (B) Normal mucosa is visualized throughout the diverticulum once the pill is removed, and then (C) an endoscopic diverticulotomy was successfully performed, producing an adequate cricopharyngeal myotomy.