Undigested food on awakening with persistent halitosis

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DESCRIPTION
A 52-year-old man reported having the sensation of food stuck in the throat on swallowing. This initially began more than 5 years ago and had progressively worsened. In the past month, he experienced dysphagia almost daily particularly while consuming tough meats. He reported bouts of coughing when he attempted to lie flat in bed, associated with the sensation of choking. He then discovered undigested food on his pillow on awakening in the morning. Some food had been consumed up to 1 week ago, which had a foul, rotten odour. He denied nasal regurgitation, nausea, vomiting, chest pain or weight changes.

Figure 1 (A–C) Demonstrates a large oesophageal diverticulum in the proximal oesophagus, which completely filled with contrast material. After the adjacent segment of oesophagus had emptied, this diverticulum continued to contain contrast material. (D) Shows the diverticulum as it was lifted off the oesophagus. (D) Labels are (1) left lateral neck, (2) left sternocleidomastoid muscle and (3) Zenker diverticulum.
Physical examination revealed an obese man (BMI 41) with normal vital signs. Examination of the oropharynx revealed halitosis and minimal dental caries. The neck was non-tender to palpation, without masses or crepitus. A detailed system examination was unremarkable. A barium swallow study revealed a large oesophageal diverticulum in the proximal oesophagus, which completely filled with contrast material (figure 1). A diagnosis of Zenker diverticulum was carried out, and subsequently cricopharyngeal myotomy and Zenker diverticulectomy were performed (figure 1). The diverticulum measured 7 cm in length in vivo with a 4 cm wide mouth. This was excised without complication (figure 2). Pathological analysis revealed marked acute and chronic inflammation. He tolerated a regular diet and was discharged the following day.

**Contributors**

SS and AS have contributed equally to the preparation of this manuscript.

**Competing interests**

None.

**Patient consent**

Obtained.

**Provenance and peer review**

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**REFERENCES**


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**Learning points**

- Zenker diverticulum is rare in the USA, with a reported prevalence of approximately 0.11%.
- A pseudodiverticulum is formed by the outpouching of mucosa without muscle through an area of weakness within the cricopharyngeus muscle. This area of inherent weakness is called the Killian triangle, which is a potential space between the inferior pharyngeal muscle and the cricopharyngeus muscle.
- The finding of a Zenker diverticulum of this size is unusual in this relatively young patient. It can occur after the seventh decade of life, and can increase in size over time. However, classical symptoms of dysphagia, regurgitation of undigested food, a neck mass or neck crepitus should prompt further evaluation for a Zenker diverticulum.
- Should the history and physical examination be strongly suggestive of a Zenker diverticulum, barium swallow studies should be considered the initial diagnostic modality of choice. The use of endoscopy for diagnosis carries an inherent risk of perforation.

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