



A Giant Zenker's Diverticulum Revealed by Dysphagia a Rare Case Report

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Abstract

Zenker's diverticulum, which is an alimentary tract pouch localized in the area of the upper esophageal sphincter, constitutes a rare condition. It's even rarer when its size exceed 7cm. Most patients are elderly and the aetiology remains unknown. The diagnosis is easily established based on radiogram with barit and esophago-gastro-duodenoscopy. Treatment has been for a long time surgical. Recently, endoscopic treatment has becoming increasily popular and is the treatment of choice of many hospital centers for its good results and low morbidity.

We highlight, in this paper, the importance of considering the diagnosis of Zenker's diverticulum in clinical practice, not only due to the severe consequences, but also due to the existence of effective therapeutic methods when diagnosed.

Key words : Zenker's diverticulum, dysphagia, surgery, endoscopic treatment

Conflict of interest : There is no conflict of interest.

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Introduction

Zenker's diverticulum (ZD) is a rare condition [1] first described by Abraham Ludlow in 1769 [2]. However, it was Friedrich Von Zenker, a german pathologist, who recognized that ZD results from increased intra-pharyngeal pressure [3]. It is located proximal to the upper eosophageal sphincter (UES) usually on the posterior hypopharyngeal wall [3]. it rarely occurs before the age of 40 years [4]. The first and most common symptom is a progressive dysphagia, but can have many severe consequences [5]. The mainstay of the treatment of ZD has been surgery for a long time, however endotherapy using

flexible endoscopes has evolved over the last years [6].

We report this case, with a review of the literature, to recall the clinical, endoscopic and radiological charesteristics of ZD with the different therapeutic modalities.

Case Report

A 58 years old man, with a history of chronic smoking, presented a progressive dysphagia for over 10 years that initially started for solid food and later fluids, regurgitation of undigested food, and chronic cough. He had no odynophagia but noticed some weight loss. The patient had no

similar condition in his family members. During clinical examination, the general condition of the patient was preserved. He was slightly pale but the cardiovascular and abdominal examination were normal. Lymph node areas were normal too.

An upper gastrointestinal endoscopy was performed, revealing a large oesophageal diverticula at 15cm of the oral cavity with a normal mucosa (Figure 1).

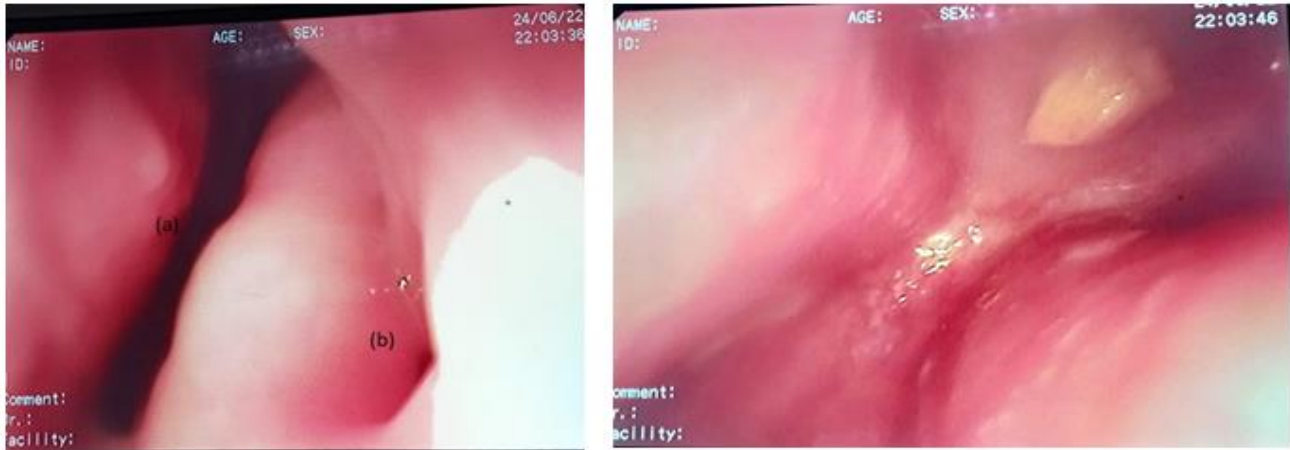


Figure 1 : Endoscopic photos of the patient revealing : Left : (a) Zenker's diverticulum entrance (b) Esophagus entrance. Right : the fundus of the Zenker's diverticulum.

The oesophageal lumen was deviated, making very difficult the progress of the endoscope through it. A barium swallow was requested, revealing a large oesophageal diverticula at the

height of the fifth cervical vertebra, measuring 7x6x7cm (Figure 2) and a small amount of barium passing through the rest of the distal oesophagus.



Figure 2 : Barium swallow revealing the giant Zenker's diverticulum of the patient.

Given the enormous volume and the duration of the diverticulum, and after a discussion with the surgical team, the patient was scheduled for a diverticulectomy.

Discussion

Zenker’s diverticulum is a rare cause of dysphagia, but it is the most common diverticulum in the upper gastrointestinal tract [5]. The incidence rate in the american population is believed to be between 0.01% and 0.11% [6]. However the true incidence is difficult to establish since the number of asymptomatic patient is unknown.

ZD usually occurs between the seventh and eighth decades of life, and rarely before the age of 40

years [6]. It’s more common in male than female [10]. Our patient was a 58 years old man.

The most common structure where ZD is located is Killian’s triangle characterised by the highest susceptibility to create diverticula for its low resistance. Then, the increase of pressure during swallowing, pushes esophageal tissue layers outside the esophagus to the mediastinum retropharyngeal space, forming a pouch with gates limited by muscles [7]. A genetic predisposition has not been proven until now [5].

ZD may occur in different positions (Illustration 1) with most of the time the entrance at the top and the fundus at the bottom, which was the case of our patient. This position is associated with a highest risk of retention of ingesta [8].



Illustration 1 : Different positions of Zenker’s diverticulum in relation to the esophageal lumen

According to Morton-Bartney’s classification (Table 1), diverticula are divided into three categories : small diverticula that measures less

than 2cm, medium diverticula that measures between 2cm and 4cm and large diverticula measuring more than 4cm [10].

Table 1: Morton-Bartney’s Classification [10]

Size of diverticulum	Type of diverticulum
<2cm	Small diverticulum
2-4cm	Medium diverticulum
>4cm	Large diverticulum

ZD are more frequently less than 4cm in length [9]. The size of our patient’s diverticulum was very large measuring 7cm, which is very rare.

The symptoms are specific and the most common one is an increasing dysphagia (80-90 %) due to esophagus constriction by a filled diverticulum [6,11] which was the case of our patient. Regurgitations of undigested food are also one of the most usual symptoms (60%) and can lead to chronic cough, repeated episodes of aspiration and some aspiration pneumonia (30-40%) [6,11]. Our patient described regurgitations and chronic cough too. However, symptoms can become more severe

with the weight loss and malnutrition (20%) [6,11]. A higher incidence of carcinoma has been noticed (0,4-1,5%) then the diagnostic should be suspected when a sudden increase in the severity of dysphagia and/or a development of alarm symptoms such hematemesis, hemoptysis or local pain occurs [6].

Physical examination findings are few and usually seen in severe cases. It includes findings of malnutrition, voices changes, neck mass and crepitus [10,12]. Our patient has a subnormal physical examination.

The diagnosis is based on a radiogram with barite that reveals a diverticulum filled with contrast on the side of the esophagus [13]. Esopgastroduodenoscopy (EGD) may be useful in ZD. However, manometry is not useful in the routine diagnostic approach due to catheter dislocation during examination impeding the proper analysis [5]. Our patient had undergone both of EGD and barium swallow to make a diagnosis.

Treatment of ZD depends on diverticulum size and clinical manifestation. Asymptomatic patients or diverticulum with a size smaller than 1cm do not need a specific treatment [5]. Thus, treatment of ZD is indicated for all symptomatic patients, expected patients with high morbidity [6].

There are several therapeutic approaches concerning ZD. The surgical one, has been for long time the treatment of choice for an established pharyngeal pouch [10]. The open approach consists of a diverticulectomy with or without a cricopharyngeal myotomy, or a diverticulopexy. Unfortunately, pharyngeal pouch surgery has long been associated with a risk of significant complications such as fistula, infection, vocal cord paralysis and aspiration [15]. The flexible endoscopic approach, known for its low morbidity, is accomplished by a gastroenterologist. It is advantageous for high-risk elderly patient who can benefit from a brief procedure without general anesthesia and the need for hyperextension of the neck. It consists of severing the septum between the diverticulum and esophagus that contain the cricopharyngeus. The division of the septum allows food and liquid to flow out of the diverticulum into the esophagus rather to lodge within the diverticulum [16]. Three principal techniques are employed: needle-knife incision, argon plasma coagulation or monopolar coagulation using forceps. Several case series have demonstrated the efficiency and safety of cricopharyngeal myotomy using a flexible endoscopic approach [16,17]. However, larger diverticula (>3cm) may require several procedures because of 1.5-2cm incision performed in multiple sessions. Some rare complications can follow flexible endoscopic therapy, it includes throat pain, aspiration, perforation and bleeding [6]. The endoscopic approach allows a clinical resolution in 84% to 96% of cases in one month

depending on different studies [18, 19, 20]. The surgical approach, in comparison with the endoscopic treatment, is associated with higher morbidity and a longer period of hospitalization (5-6 days vs 1-2 days). The oral feeding is implemented after 5-6 days in comparison with 2 days after an endoscopic procedure [5]. Thus, the endoscopic approach is interesting for its low morbidity and low cost [5].

However, it should be noted that despite of attractiveness of the endoscopic treatment of Zenker diverticulum, we must adapt the type of treatment to the case of the patient and the characteristics of the diverticulum. Thus, surgery treatment remains an option which was the case with our patient.

Conclusion

ZD is an anatomic abnormality with a wide range of symptoms. Its presence should always be considered in clinical practice especially in case of dysphagia. Effective therapeutic methods, as the endoscopic myotomy, are interesting for its safety and efficiency. However, the surgical treatment remains an option, especially for the giant Zenker's diverticulum.

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