



**Giant Zenkers Diverticulum Report of a Case and Review of Literature**

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**Abstract :**

Zenker's diverticulum is an uncommon cause of dysphagia arising from neuromuscular incoordination of pharyngeal and upper esophageal musculature. Diverticulum is a pulsion type false diverticulum. In this article, we report a case of giant Zenker's diverticulum we encountered in our department for whom stapled diverticulectomy and cricopharyngeal myotomy was done. Also, we have reviewed relevant literature and discussed the same.

**Keyword :** zenker's diverticulum, upper esophageal sphincter, dysphagia, diverticulectomy, cricopharyngeal myotomy

**Case Report** A 55 year old gentleman presented to our department with complaints of dysphagia and weight loss for one year. The dysphagia was progressive with sensation of food sticking in his throat and regurgitating few hours after meals. Also, he complained of halitosis throughout the day.

His past history was noncontributory. On examination, he was malnourished and found to have mild anemia with a bulge in the left side of the neck. He underwent barium swallow which revealed a giant Zenker's diverticulum of size 12 cm with a cricopharyngeal bar. Upon upper gastrointestinal endoscopy, an opening was visualized just behind the cricopharyngeal inlet which is the mouth of the diverticulum. Passage of scope into the diverticulum revealed stasis of food particles. After improving his nutritional status, he was assessed for surgery under general anesthesia with an American Society of Anaesthesiology score of 1. In the operating room, he was placed in supine position with neck turned to right. Incision was placed along the anterior border of sternocleidomastoid centered over the cricoid cartilage. Incision was deepened and the diverticulum was dissected out. An intraoperative flexible endoscopy was done to ascertain the mouth of the diverticulum.

With the scope itself acting as a bougie, stapled diverticulectomy was done using TLC 55 stapler (Ethicon, MA). A cricopharyngeal myotomy was done for a distance of 4 cm from cricopharyngeal junction.. At the conclusion of the procedure, using the the endoscope for air insufflation, a leak test was performed to confirm intact mucosa. The patient had an uneventful recovery and was started on orals on third postoperative day. He was able to swallow without difficulty. He is presently on follow-up for 24 months and reports excellent symptomatic relief with good weight gain. Discussion: Zenker's diverticulum (ZD), also called pharyngo-esophageal diverticulum, is a pseudodiverticulum arising as an outpouching of pharyngeal mucosa through an area of weakness in cricopharyngeus muscle called Killian's triangle. Ludlow initially reported it as an autopsy finding and later German pathologist Zenker described this in detail in 1877 (1). ZD is a relatively rare disorder with an annual incidence estimated at 2/100,000 per year and usually affecting patients in seventh and eighth decades of life (2). Pathophysiologically, it results from incoordination between pharyngeal contraction and UES (upper esophageal sphincter) relaxation. The inferior pharyngeal constrictor muscle consists of thyropharyngeus and the cricopharyngeus (CP). The CP has superior and inferior components arising bilaterally from the cricoid cartilage. Killian's triangle is formed posteriorly between these components of the CP and is the site of origin for ZD. The mouth of the Zenker's diverticulum is located proximal to the CP on the posterior pharyngeal wall [3]. The patients' symptoms are attributed to both pharyngeal muscle dysfunction abnormalities and the effect of diverticulum. Dysphagia results from non-relaxing cricopharyngeus muscle and by the diverticulum due to direct compression of the esophagus. A giant ZD, as in our case

can result in halitosis, regurgitation of accumulated food leading on aspiration with lower respiratory infection [4]. Patient may have symptoms for many days' duration with resultant malnourishment. On physical examination, small diverticulum does not usually manifest, however, a large sized diverticulum as ours can present with lump in the neck, usually on the left side of neck and crepitus on palpation which is described as Boyce's sign. Occasionally, patient cough at the time of palpation due to spill of contents into the tracheobronchial tree (5). ZD is confirmed the diagnosis by barium esophagography and upper gastrointestinal endoscopy. On barium study, cricopharyngeal bar is visualized at the neck of the diverticulum indicating the tight CP muscle. Reported complications of ZD include aspiration pneumonia, retention of pills and food leading to bezoar formation and rarely, squamous cell carcinoma. History of surgery for ZD has evolved from the days of diverticulectomy alone, with poor symptom relief and high recurrence rate to cricopharyngeal myotomy, with excellent relief of dysphagia due to better understanding of pathogenesis. Usually, patients with small pouches (less than 2 cm) can be treated with myotomy alone and the diverticulum reduces itself; patients with moderate/large pouches can be managed with combined diverticulectomy and cricopharyngeal myotomy. Patients who have larger pouches (more than 5 cm) are treated with excision with cricopharyngeal myotomy. Diverticulectomy is done by fixation of the base of the diverticulum in a dependent position superiorly to the prevertebral fascia and primarily done to avoid leaks from the closure of suture line if excised. In our patient, we have done a stapled

diverticulectomy as reported in few papers (6). The long term outcome of patients who underwent surgical treatment is excellent (7). There are endoscopic approaches to management of ZD, both using rigid and flexible endoscopes. The advantages of endoscopic techniques are a shorter operating time, early oral feeding ultimately resulting in shorter length of stay in the hospital. Nevertheless, in elderly patients who often have cervical spine disease precluding neck hyperextension which is a prerequisite for rigid endoscopic therapy. This limitation can be overcome by the usage of a flexible endoscope in which myotomy is done either using diathermy or argon plasma coagulation. In selected centers equipped with the endoscopic facilities, ZD is primarily managed with this approach. Conclusion ZD is a rare cause of dysphagia and results from cricopharyngeal spasm. Optimal surgery necessitates excision of the pouch and adequate myotomy. Surgery is the mainstay of treatment as performed in our center; however, endoscopic treatment is evolving and holds promise for the future.

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