ISSN: 0976-3031

Available Online at http://www.recentscientific.com

CODEN: IJRSFP (USA)

International Journal of Recent Scientific Research
Vol. 8, Issue, 11, pp. 21612-21616, November, 2017

International Journal of Recent Scientific Research

DOI: 10.24327/IJRSR

Research Article

WHICH TREATMENT IN THE ZENKER DIVERTICULUM

Giorgio Maria Paolo Graziano[1]., Antonio Di Cataldo[2] and Antonino Graziano[3]

[1]Research fellow University of Catania Italy Dpt Sciences Medical of Surgery and Technologies Advanted

[2,3]University of Catania, Medical School Italy Dpt Sciences Medical of Surgery and Technologies Advanted via S Sofia 86 cap 95125 Catania

DOI: http://dx.doi.org/10.24327/ijrsr.2017.0811.1107

ARTICLE INFO

Article History:
Received 19th August, 2017
Received in revised form 5th September, 2017
Accepted 23rd October, 2017
Published online 28th November, 2017

Key Words:
Zenker diverticulum Treatment

ABSTRACT

Introduction: Zenker's diverticulum (DZ) is a relatively rare clinical condition, with a total estimated prevalence of around 0.11%. In relation to the development mechanism and the characteristics of the enlarged space, it is easy to understand how these diverticular sacs usually, do not contract adherence to the surrounding structures. However, occasional occasional inflammatory processes can sometimes be fixed to varying degrees and by extensions. The purpose of this study is to evaluate in the light of new technologies the most appropriate treatment for such a condition in relation to age and clinical conditions of the patient. **Materials and Methods**: From January 2017 to November 2017, at the AUO outpatient clinic of the University of Catania, there were observed 2 cases involving Zenker diverticulum (DZ) patients were male with an average age of 52 years (range 54-50). Symptomatology in the first period was mute or consisted of vague and intermittent foreign body sensations and swallowing disorders, symptoms often considered by the patient and the doctor such as those due to a trivial pharyngitis **Results**: through a left cervical incision (crico pharyngeal muscle myotomy with or without the diverticulum resection, or (in the other patient) by endoscopically dissecting the septum between the diverticular pocket and the esophageal lumen, in which the fibers of the SES grow. Spongy fibers covering a length of about 2.5- 3 cm of the esophageal wall. **Discussion**: In asymptomatic or minimal symptomatic diverticies no need for treatment. In patients with oesophageal diverticulas, where dysphagia is related to alteration of basic motility, therapy should be directed to cure this disorder. The esophageal diverticulus reaches considerable size, or if it is associated with a sin dentistry, it is possible to evaluate the possibility of surgical removal (resection). **Conclusions**: Open surgery allows to definitively resolve stenosis, with clinical and radiological remission of the disease, technological progress and the introduction of less invasive treatments for the patient, allowing the treatment of the Zenker diverticulum with flexible endoscope that can be proposed in all symptomatic patients with severe comorbidities for good clinical results. Obtained

INTRODUCTION

Zenker's diverticulum (DZ) It is a relatively rare clinical condition, with a global prevalence estimated at around 0.11% (1.2). The most accepted pathophysiological hypothesis is that these are diverticulum-like oesophageal diverticulosis. In fact, on the posterior surface of the pharyngo-esophageal canal, there is an area of lesser strength between the inferior margin of the inferior musculoskeletal muscle and the upper margin of the chronic-pharyngeal muscle, approximately triangular, said Killian triangle whose muscle is particularly thin, sometimes absent, and through which the esophageal mucosa can arise by impulse. This anatomical peculiarity, if it can adequately explain the location of the diverticulum collar, can not explain the etiopathogenesis! because otherwise all individuals should become, at some point, carriers of this affection, whereas diverticulum only forms in certain subjects as a consequence of excessively high pressure in the lumen of the pharyngeal and esophageal duct, which is determined in the absence of downstream obstacles, thus linked to a pharyngeal-esophageal motor incoordination, that is, to a true pharyngeal-oesophageal acalasia, in which the pressure rise to excessive levels occurs when the opening of the esophageal mouth does not occur in time before the progression of the food bolus, pushed down by the action of the pharyngeal muscle. In this way it is well understood that the area of the Killian triangle, which is

Corresponding author:* **Giorgio Maria Paolo Graziano
Research fellow University of Catania Italy Dpt Sciences Medical of Surgery and Technologies Advanted

physiologically less resistant to the rest of the esophagus for anatomical reasons, may be forced by the mucous membrane pushed from the inside, which can thus extrude. Once formed, the diverticulum will tend to increase progressively, both because of the influence of increased endoluminal pressure, and the weight of food that is accumulated in the diverticulum that can not exert some influence, especially in upright position both for the very low resistance of the peridiverticulum mobile cellular atmosphere. The diverticulum sack communicates with the esophageal lumen through a collar of varying size, sometimes as wide as the entire posterior aspect of the esophagus and the diverticulum develops in the space behind the esophagus (3,4,5). This enlarges, suspends 'Esophagus from behind, flattens it and reduces its pervergence. As it develops, the diverticum moves sideways, mostly to the left, sometimes underlying the lower thyroid artery and recurrent nerve. Particularly large diverters can reach, with their lower pole, the back mediastinus and even contract aortic artery. In relation to the development mechanism and the characteristics of the enlarged space, it is easy to understand how these diverticular, Usually, they do not contract adherence to the surrounding structures. However, intermittent occasional inflammatory processes sometimes may vary the diverticulum wall and variable variability, making surgical dissection difficult and technically difficult. In small diverticulum (<3 cm), the Flexible Endoscopic Septum Division (FESD) is a therapeutic option that can have some advantages: no need for anesthesia (but necessary in the surgical approach) (6.7) can be repeated in the event of failure of a previous treatment (whether surgical or en-doscopic); Conversely, a re-intervention after diverticulectomy / surgical myotomy may be technically very complex for the risk of saliva fistula and recurrent nerve damage, respectively, 1.8% and 3.2% respectively in the major cases. can also be ideally suited to any type of patient, regardless of the size of the diverticulum and the clinical condition of the subject, being also performed in elderly and / or non-candidable patients. The aim of the present study is to evaluate in the light of new technology the most appropriate treatment in this pathology the relationship to the age and clinical condition of the patients.

MATERIALS AND METHODS

From January 2017 to Nov 2017 at the AUO outpatient clinic of the University of Catania there were observed 2 cases with Zenker diverticulum (DZ) patients were male with an average age of 52 years (range 54- 50). Symptomatology in the first period was mute or consisted of vague and intermittent foreign body sensations and swallowing disorders, symptoms often considered by the patient and the family doctor such as those due to a banal pharyngitis. However, these disturbances did not diminish over time, but tended to get worse gradually, as the diverticulum increased with the appearance of intermittent dysphagia, depending on the corpusity of ingested foods, often elective for solid foods, especially if taken to big boobies, accompanied by regurgitation, coughing, halitosis, foreign body sensation, and weight loss, odinphage. The radiological examinations of the esophagus or the upper gastrointestinal tract carried out to diagnose were: Fluorescence of the esophagus (radiography with barium) is generally the diagnostic technique of choice: a sequence of radiographic images is performed after ingestion from part of the patient of the so-called "bariatric meal", a contrast medium containing barium sulphate, which appears clear to the development of the radiographic plate (since the radioisotope is opaque to X-rays). Fig 1-2 The technique can be achieved by "double contrast" (bariatric meal + air produced by the simultaneous ingestion of sodium bicarbonate, which reacts with gastric acid and goes back through the esophagus) to allow a better relaxation of the bowel and highlight any macroscopic irregularities in the mucosa. Radiography with barium is useful for the diagnosis of intramural oesophageal similar diverticulum, while the "bariatric meal" provides more diagnostic information in symptomatic patients with mid-thoracic or epiphytic diverticulitis. The technique is excellent for defining the structural aspect of esophageal diverticulitis and provides clues related to motility disorders caused by the presence of these formations

Fig 1 diverticulum zenker in front

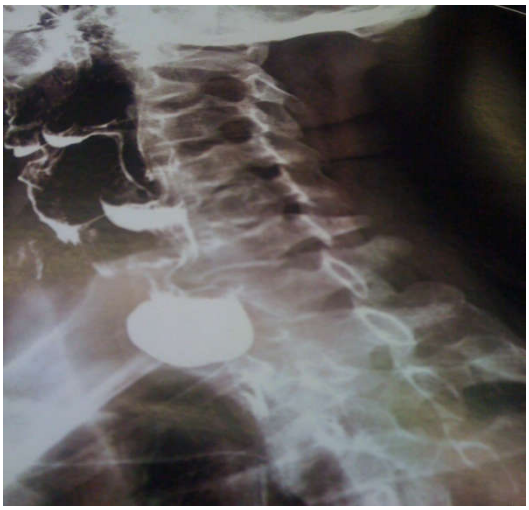

Fig 2 diverticulum on the side

Gastro-oesophageal manometry was used to measure the time and strength of contractions and relaxations of the muscular valves at the level of the upper (SES) and lower (ESA) esophageal sphincter. Specifically, the test allows to highlight association with alterations in motility or presence of a muscular hypertone, which results in increased resistance to movement: at the level of the superior esophageal sphincter, for Zenker's diverticulum; at the level of the lower esophageal sphincter, for epiphrenic diverticulitis. In the presence of

dysphagia and odinphagia (painful sensation during swallowing), an esophagusGastroDuodenoscopy (EGDS) is indicated, an endoscopic examination of the upper digestive tract, which excludes conditions structural pathologies associated with diverticulosis of the esophagus, such as stenosis or tumors fig. 3

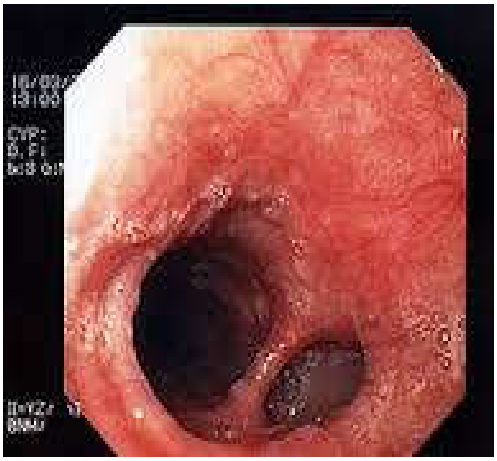

Fig 3 Endoscopic diverticulum aspect

Finally, computerized tomography allowed to identify large esophageal diverticulum, which can manifest itself as structures full of air and / or liquid in communication with the esophagus.

RESULTS

The mechanisms responsible for this symptom are related to the motor dysfunction of the esophageal sphincter. The diverticulum is fatally destined to increase in volume and cause inhalation and pulmonary infections, so it is advisable to schedule surgical treatment in choice. The basic principle of cure is the abolition of the function of the upper esophageal sphincter (SES), since it is the cause of its appearance. This can be achieved by cervical engraving and dissection of the sphincter fibers, extramucous myotomy (performed in one case) by a left cervical incision (crico pharyngeal muscle myotomy with or without diverticulum resection, or (in the other patient), dissecting to endoscopic via the diverticular pocket between the diverticulum pocket and the esophageal lumen, in which the fibers of the SES come in. Spongy fibers covering a length of about 2.5-3 cm in the esophageal wall The transoral approach with a rigid or flexible endoscope involves the use of an endoscopic suturing machine with the myotomy of the diverticulum septum, consisting in the incision of the mucous membrane and the muscle fibers that make up the diverticulum septum. The purpose of the treatment is to recreate a passage through which the food bolus can easily pass without getting caught in the diverticulum pocket Endoscopic surgery (Endoscopic Settotomy) is carried out by means of a cross-section with wall scalpel (septum) dividing the diverticulum bag from the esophagus lumen. This section will make the esophagus and the diverticulum become a single cavity. The treatment results in an immediate improvement in dysphagia, but 24 hours after surgery, the patient starts to eat again and then resigns in 3 to 4 days. endoscopic therapy is valid when the diverticulum is about 3-5 cm in length, in which case the endoscopic section of the septum entails the abolition of SES and the food flows freely from the diverticulum pocket, which remains in the lumen of the 'esophagus below. Fig 4

Fig 4 Endoscopic settotomy

When the diverticulum is less than two cm long, it is best to perform simple endoscopic settotomy because the diverticulum pocket may not be removed when it is very small; while open surgery is indicated when the funeral exceeds 5 cm in length, using mechanical stitches when the size of the diverticulum exceeds 3 cm. The complications of open surgery consist of bleeding, lower laryngeal nerve lesion, resulting in decreased voice (dysphonia) and fistula at suture level. The complications of endoscopic technique are bleeding, perforation with mediastinal abscess and recurrence.

DISCUSSION

In asymptomatic or minimally symptomatic amusements no need for treatment. In patients with esophageal diverticulum, where dysphagia is related to alteration of basic motility, therapy should be directed to curing this disorder. (8,9,10) Only when the esophageal diverticulum reaches a large size, or if it is associated with a disabling symptom, it is possible to evaluate the possibility of surgical removal (resection). (11,12,13,14) The indications for surgical treatment of the esophageal diverticulum are represented by three characters: symptomatic, bulky, disabling. Relative to the clinical variety Therapeutic options include: Injection of botulinum toxin at the lower esophageal sphincter level (with a transient effect, from 1 to 3 months) or Heller's esophageal myotomy (surgical resection of surrounding smooth muscle tissue bundles the esophagus.) (15,16,17,18) Or a video-assisted trans-oral diverticulotomy that involves general anesthesia intervention and the introduction of a suitable endoscopic instrumentation (diverticoloscope + linear saturation) which allows the creation of a common cavity between the diverticulum and the esophagus, to correct the effect, carefully evaluating the depth of myotomy, to prevent it being too deep and hesitating in mediastinal perforation, or otherwise being too superficial, so (19,20,21,22) In the last few years, non-invasive (endoscopic) techniques have been refined to guarantee good results and a modest post-operative pain. Routine treatment performed in conscious sedation in very old or defected patients unable to tolerate deep sedation The endoscopic approach is widely recognized for its safety and efficacy but is not still fully standardized and different techniques can be made with different tools, depending on the experience and personal preferences of the operator. There is still a subject discussion in the literature, the validation of a specific score system, for the evaluation of post-treatment symptoms, We have considered DZ dysphagia, regurgitation, cough, and subjected patients treated to a semi-annual follow-up still ongoing. However, evaluating numerous clinical studies in the literature have been optimistic in the result, as this results in an initial success ranging from 56.4% to 100% (average 91.2%). the rate of

recurrence varies from 0% to 31.8% (mean 10.5%). Adverse events are reported in a range ranging from 0% to 36.4% (mean 14.1%). Particularly the most common complication is drilling 6.5% (either intraoperatively diagnosed or indirectly in postoperative for the presence of emphysema subcutaneous, cervical or mediastinal); Other possible complications include pneumonia (4.8%), fever (18.3%), bleeding (25%). Such complications are absent in the cases treated. (23,24,25,26,27)

CONCLUSIONS

Open surgery allows definite resolution of stenosis and dysphagia, with clinical and radiological remission of the disease, technological advances and the introduction of less invasive treatments for the patient, allowing the treatment of the Zenker diverticulum with flexible endoscopy can be proposed in all symptomatic patients and with severe comorbidity for good clinical results. obtained There is a need to identify the ideal endoscopic technique since at present there is no intervention that reduces the likelihood of potentially severe complications and guarantees maximum clinical efficacy with the standardization of diverticulectomy / settotomy and the subsequent prospective comparison with the open surgery, necessary to define the directions of treatments at different clinical stages of the disease.

References

1. Fulp SR,Castell DO. Manometric aspects of Zenker's diverticulum. *Hepatogastroenterology* 1992;39(2):123-26.
2. Negus VE. Pharyngeal diverticula: observations on their evolution and treatment. *Br J Surg* 1950;38(150):129-46.
3. Bowdler D.Pharyngeal Pouches. Bowdler D (Ed.). Butterworth-Heinmann, Oxford, UK, 1-21 (1997).
4. .Bonavina L, Bona D, Abraham M *et al*. Long-term results of endosurgical and open surgical approach for Zenker diverticulum. *World J Gastroenterol* 2007;13:2586-89.
5. Case DJ, Baron TH. Flexible endoscopic treatment of Zenker's diverticulum: the Mayo Clinic experience. *Mayo Clin Proc* 2010; 85(8):719-22.
6. Mulder CJ, den Hartog G, Robijn RJ, Thies JE. Flexible endoscopic treatment of Zenker's diverticulum: a new approach. *Endoscopy* 1995; 7(6):438-42.
7. Ishioka S, Sakai P, Maluf-Filho F, Melo JM. Endoscopic incision of Zenker's diverticula. *Endoscopy* 1995;27(6):433-37.
8. Costamagna G *et al*. Flexible endoscopic Zenker's diverticulotomy: cap assisted technique vs. diverticuloscope-assisted technique. *Endoscopy* 2007; 39:146-52.
9. Repici A *et al*. Endoscopic flexible treatment of Zenker's diverticulum: a modification of the needle-knife technique. *Endoscopy* 2010; 42: 532-35.
10. Repici A *et al*. Transoral treatment of Zenker diverticulum: flexible endoscopy versus endoscopic stapling. A retrospective comparison of outcomes. *Dis Esophagus* 2011 May; 24(4):235-9.
11. Manno M, Manta R, Caruso A *et al*. Alternative endoscopic treatment of Zenker's diverticulum: a case series (with video). Gastrointestinal Endoscopy 2014;79(1):168-70.
12. Ba ttaglia G, Antonello A, Realdon S *et al*. Flexible endoscopic treatment for Zenker's diverticulum with the SB Knife: preliminary results from a single centre experience. *Dig Endosc* 2015 May 14 [Epub ahead of print].
13. Sakai P *et al*. Endoscopic treatment of Zenker's diverticulum with an oblique-end hood attached to the endoscope. *Gastrointestinal endoscopy* 2001:54(6):760-763.
14. Ra benstein T *et al*. Argon plasma coagulation for flexible endoscopic Zenker's diverticulotomy. *Endoscopy* 2007:39:141-45.
15. GiorgioMP Graziano, Anthony Graziano and Anthony Di Cataldo.2017, What The Anti-Reflux Surgery Ideal?. *Int J Recent Sci Res.* 8(1), pp. 15106-15110
16. Graziano Giorgio Maria Paolo *et al*.2016, Essentiality 'In The Doctor-Patient Relationship. *Int J Recent Sci Res.* 7(12), pp. 14527-14537
17. Huberty V, El Bacha S, Blero D *et al*. Endoscopic treatment for Zenker's diverticulum: long-term results (with video). Gastrointestinal Endoscopy 2013;77(5):701-7.
18. Al-Kadi AS *et al*. Endoscopic treatment of Zenker diverticulum: results of a 7 year experience. *J Am Coll Surg* 2010; 211(2):239-43.
19. Halland M, Grooteman KV, Baron TH. Flexible endosopic management of Zenker's diverticulum: characteristics and outcomes of 52 cases at a tertiary referral center Dis Esophagus 2015 Feb 24.
20. Giorgio Maria Paolo Graziano *et al*.2017, Role of Genetic Mutations In The Diagnosis of Gallbladder Neoplasms. *Int J Recent Sci Res.* 8(10), pp. 20908-20913.
21. Giorgio Maria Paolo Graziano *et al*.2017, The Use of Bar In Colorectal Surgery In The Elderly. *Int J Recent Sci Res.* 8(9), pp. 19950-19954.
22. Graziano Giorgio Maria Paul *et al*.2017, Single Accessed Gallbladder Surgery. *Int J Recent Sci Res.* 8(8), pp.19359-19362. DOI: http://dx.doi.org/10.24327/ijrsr.2017.0808.0679
23. Giorgio Maria Paolo Graziano *et al*.2017, Papillary Bladder Tumor. *Int J Recent Sci Res.* 8(7), pp. 18485-18490.
24. Giorgio Maria Paolo Graziano *et al Complications In Laparoscopic Cholecystectomy* International Journal of Current Advanced Research Volume 6; Issue 5; May 2017 p3855-3859 http://dx.doi.org/10.24327/ijcar.2017.6505, 2017.3859.0382
25. Graziano Giorgio Maria Paolo Which Treatment In Cystic Tumors of The Pancreas: Conservative or Resection *International Journal of Current Advanced Research* Vol 5, Issue 8, pp 1190-1198, August 2016
26. *24*.Giorgio Maria Paul Graziano1,*et al* Vascular Thoracic Fibrous Adipose Tissue (New Disease) *J Pharm Biomed Sci* | Vol. 06 No. 07 | 419-424
27. T ang SJ. Flexible endoscopic Zenker's diverticulotomy: approach that involves thinking outside the box (with videos). *Surg Endosc* 2014 Apr;28(4):1355-9.

28. Seaman DL, de la Mora Levy J, Gostout CJ *et al*. A new device to simplify flexible endoscopic treatment of Zenker's diverticulum. *Gastrointest Endosc* 2008 Jan;67(1):112-5.

29. Rieder E, Martinec DV, Dunst CM, Swanström LL. Flexible endoscopic Zenkers diverticulotomy with a novel bipolar forceps: a pilot study and comparison with needle knife dissection. *Surg Endosc* 2011 Oct;25(10):3273-8

How to cite this article:

Giorgio Maria Paolo Graziano *et al*.2017, Which Treatment In The Zenker Diverticulum. *Int J Recent Sci Res.* 8(11), pp. 21612-21616. DOI: http://dx.doi.org/10.24327/ijrsr.2017.0811.1107

****