CHAPTER 27

BENIGN ESOPHAGEAL STRICTURES

Osman Cemil AKDEMİR [1]
Ömer SOYSAL [2]

INTRODUCTION

An esophageal stricture refers to the abnormal narrowing of the esophageal lumen. It often presents as dysphagia commonly described by patients as difficulty in swallowing. It is a serious sequela to many different disease processes and underlying etiologies. Benign means that it is not caused by cancer of the esophagus, and subjects to inflammation, esophagitis, and scar tissue, which causes the esophagus to narrow. Its recognition and management should be prompt. Appropriate management depends on identifying the correct etiology for stricture. The majority of esophageal strictures result from benign peptic strictures from long-standing gastroesophageal reflux disease, which accounts for 70 to 80% of adult cases [1]. In young children and adolescent populations, corrosive substance ingestion is the leading cause of stricture formation in the esophagus [2].

These strictures have a negative impact on the quality of life of patients, mainly because of dysphagia and may lead to severe complications, such as malnutrition, weight loss and aspiration. Endoscopic dilation with bougies or balloons is initial standard treatment for such lesions. However, 30–40% of these strictures will recur during long-term follow-up, requiring repeated dilations or even surgery. Moreover, up to 10% of patients will not experience any meaningful improvement, being refractory to endoscopic dilation [3].

SYMPTOMS

The most common symptom of esophageal strictures is difficulty swallowing of solid foods called dysphagia. Functional staging of dysphagia is as following; Stage 1- Normal, Stage 2- Need water for swallowing solid food, Stage 3- May swallow semi-solid food, Stage 4- May swallow saliva, Stage 5- May not swallow saliva. Types of dysphagia may be a guide for the swallowing disorder. Dysphagia only for solid food means esophageal stenosis works as a mechanical obstruction. The other types of dysphgia are acute, oropharengeal, esophageal, difficulty in swallowing fluids, progressive and intermitant. Symptoms accompanying dysphagia are as following; Retrosternal burning sensation or chest pain, weight loss, hematemesis, anemia, regurgitation and aspiration. Dense and solid foods can lodge in the esophagus when it narrows. This may cause choking or difficulty breathing. Problems in swallowing can prevent the patient from getting enough food and liquid. This may lead to dehydration and malnutrition. There's also a risk of getting pulmonary aspiration which occurs when vomit. Food or fluids enter the lungs. This could result in aspiration pneumonia, caused by bacteria growing around the food, vomit or fluids in the lung.

Normal esophagus is 20-30 mm in diameter. Dysphagia symptom occurs when the lumen is

[1] Specialist, MD., Bezmialem Vakıf University, Faculty of Medicine, Department of Thoracic Surgery, İstanbul drcemilakdemir@gmail.com
[2] Prof., Bezmialem Vakıf University, Faculty of Medicine, Department of Thoracic Surgery, İstanbul dromersoysal@gmail.com

atal approach may be used with good outcomes in most resections for benign disease. The exact surgical approach should be evaluated and chosen on a case-by-case basis depending on the specific patient, disease etiology and severity. A vagal sparing technique is something that can be considered for benign esophageal diseases. Vagal nerves are usually compromised in malignant disease due to the possibility of transmural spread. This technique has shown to preserve gastric acid secretion, gastric emptying and meal capacity. Dumping syndrome and anastomotic stricture might also be decreased with this approach. This technique can however lead to anastomotic ulcerations [21].

Esophagectomy is rarely needed for benign conditions. Usually reserved for end-stage disease, when the esophagus is either severely non-functional or when quality of life is very poor. In these circumstances esophagectomy is a good option to consider and it is associated with encouraging success rates and improved quality of life. Depending on the specific disease leading to organ failure, peculiar technical issues should be carefully evaluated in order to avoid complications and optimize results (19)

Benign esophageal strictures are not malignant, but a few may show malignant transformation that it should be kept in mind. Main problem is difficulty in swallowing, presenting as dysphagia. So the goal of the treatment is to improve swallowing. Diagnosis is usually made by esophagogram. The etiology of the esophageal stricture generally guides the treatment strategy including dilation, stenting and esophagectomy.

REFERENCES

1. Pasha SF, Acosta RD, Chandrasekhara V, Chathadi KV, et. al. ASGE Standards of Practice Committee. The role of endoscopy in the evaluation and management of dysphagia.Gastrointest Endosc. 2014 Feb; 79(2):191-201.
2. Lamoria S, De A, Agarwal S, Singh Lamba BM, Sharma V. Peptic esophageal stricture in an adolescent with Barrett's esophagus. Int J Adolesc Med Health. 2016 Feb 27;29(5).
3. Jay P. Desai; Fady Moustarah. Esophageal Stricture. Treasure Island (FL). StatPearls Publishing; 2020 Jan-. University Of Tennessee Health Science Center. Central Michigan University. Last Update: June 2, 2020. StatPearls. NCBI Bookshelf. Internet.
4. Michaud L, Coutenler F, Podevin G, Bonnrd A, et.al. Characteristics and management of congenital esophageal stenosis: findings from a multicenter study. Orphanet J Rare Dis. 2013; 3:186-190.
5. Terui K, Saito T, MitsunagaT, Nakata M, Yoshida H. Endoscopic management for congenital esophageal stenosis: A systematic review. World J Gastrointest Endosc. 2015 Mar 16; 7(3):183-91.
6. Lo KB, Albano J, Sandhu N, Candelario N. Plummer-Vinson syndrome: improving outcomes with a multidisciplinary approach. Multidiscip Healthc. eCollection 2019. 2019 Jun 19;12:471-477.
7. Goel A, Bakshi SS, Soni N, Chhavi N. Iron deficiency anemia and Plummer-Vinson syndrome: current insights. J Blood Med. 2017 Oct 19 ;8:175-184. eCollection 2017.
8. Watts LD, Patel K. Schatszki ring-StatPearls-NCBI bookshelf. Schatzki ring.. Last update september 8, 2020.
9. Arıbaş OK. Özofagusun benign striktürleri. Pp: 1227-1232. In: Ökten İ, Güngör A, (editors). Göğüs Cerrahisi, 2003, Ankara: Sim Matbaacılık.
10. Mowry JB, Spyker DA, Cantilena LR, McMillan N, Ford M. 2013 Annual Report of the American Association of Poison Control Centers' National Poison Data System (NPDS): 31st Annual Report. Clin Toxicol (Phila). 2014 Dec; 52(10):1032-28.
11. Lucendo AJ, Molina-Infante J, Arias Á, von Arnim U, et. al. Guidelines on eosinophilic esophagitis: evidence-based statements and recommendations for diagnosis and management in children and adults.United European Gastroenterol J. 2017 Apr;5(3):335-358.
12. Park JH, Kim KY, Song HY, Cho YC, et. al. Radiation-induced esophageal strictures treated with fluoroscopic balloon dilation: clinical outcomes and factors influencing recurrence in 62 patients. Acta Radiol. 2018 Mar; 59(3):313-321.
13. Tustumi F, Bernardo WM, JRM, Szachnowicz S, et. Al. Anti-reflux surgery for controlling respiratory symptoms of gastro-esophageal reflux disease: A systematic review and meta-analysis. Asian J Surg 2020 Jun 10; S1015-9584(20)301 59-7.
14. Fan Y, Song HY, Kim JH, Park JH, et.al. Fluoroscopically guided balloon dilation of benignesophageal strictures: incidence of esophageal rupture and its management in 589 patients. 2011 Dec; 197(6):1481-6.
15. Josino JR, Madruga-Neto AC, Ribeiro IB, Guedes HG, et. al. Endoscopic Dilation with Bougies versus Balloon Dilation in Esophageal Benign Strictures: Systematic Review and Meta-Analysis. Gastroenterol Res Pract. 2018 Jul 15; 2018:5874870.
16. Emre A, Sertkaya M, Akbulut S, Erbil O, et. al. Self-expandable metallic stent application for the management of upper gastrointestinal tract disease. Turk J Surg. 2018 Apr 30;34(2):101-105.
17. A Repici, C Hassan, P Sharma, M Conio, P Siersema Systematic review: the role of self-expanding plastic stents for benign oesophageal strictures . Aliment Pharmacol Ther .2010 Jun; 31(12):1268-75.

18. Carraro EA, Muscarella P. Esophageal replacement for benign disease. Tech Gastrointest Endosc 2015;17:100-6
19. Mormando J, Barbetta A, Molena D. Esophagectomy for benign disease. J Thorac Dis. 2018; 10(3):2026-2033.
20. Akaishi R, Taniyama Y,Sakurai T, Okamoto H, et.al. Acute esophageal necrosis with esophagus perforation treated by thoracoscopic subtotal esophagectomy and reconstructive surgery on a secondary esophageal stricture: a case report. 2019 May 8;5(1):73.
21. Banki F, Mason RJ, DeMeester SR, et al. Vagal-Sparing Esophagectomy: A More Physiologic Alternative. Ann Surg 2002;324-35; discussion 335-6.