Clinical Spectrum of Dysphagia at a Tertiary Care Hospital in India

Pranav Mehta[1] , Akash Rajendra[2] , Manika Chhabra[3*] , Kshitij Mehta[4], Dhiraj Saini[5], Rajat Bhargava[6], Subhash Nepalia[7]

[1] Senior Resident, Department of Medical Gastroenterology, Mahatma Gandhi Medical College & Hospital, Jaipur 302022, India
[2] Associate Professor, Department of Medical Gastroenterology, Mahatma Gandhi Medical College & Hospital, Jaipur 302022, India
[3] Assistant Professor, Department of Radiodiagnosis, Mahatma Gandhi Medical College & Hospital, Jaipur 302022, India
[4] Senior Resident, Department of Orthopaedics, Government Medical College, Patiala, 147001, India
[5]Senior Resident, Department of Medical Gastroenterology, Mahatma Gandhi Medical College & Hospital, Jaipur 302022, India
[6]Associate Professor, Department of Medical Gastroenterology, Mahatma Gandhi Medical College & Hospital, Jaipur 302022, India
[7]Professor&HOD , Department of Medical Gastroenterology, Mahatma Gandhi Medical College & Hospital, Jaipur 302022, India

* Corresponding Author: **Dr Manika Chhabra**

Abstract

Background and Aim: Dysphagia is aclinical condition responsible for substantial morbidity and mortality, especially in elderly population. It has various causes, both benign and malignant. Owing to limited data from Indian population, this study was undertaken to evaluate the clinical profile and various etiologies of dysphagia. **Methods**: A prospective study was conducted on 213 patients presenting with dysphagia in Department of Gastroenterology, Mahatma Gandhi Medical College & Hospital, Jaipur from September 2022-23. Detailed history, general and systemic examination, endoscopy and guided biopsy and radiological investigations were done. Patients with oropharyngeal or neurological cause of dysphagia were excluded. **Results**: The mean age of patients was 57.6 years, with the male: female ratio being 1.76:1. 32.39% (n=69)patients had malignant etiology, with mean age of 63.3 years, and 67.61% (n=144) had benign etiology, with mean age of 49 years. Of the malignant cases, 2 (2.89%) patients had gastric cardia adenocarcinoma, 16 (23.18%) had adenocarcinoma of esophagus and 51(73.91%) had squamous cell carcinoma (SCC) of esophagus, lower 1/3rd of esophagus being the most common site of malignancy. Of the benign etiology, most common cause was esophagitis due to gastro-esophageal reflux seen in 60 patients (28.16%), followed by esophageal ulcer in 12 (5.63%), achalasia in 12 (5.63%), corrosive stricture in 8 (3.75%), peptic stricture in 7 (3.28%), esophageal ring in 6 (2.8%) and, hiatus hernia in 6 patients (2.8%). **Conclusion**: Dysphagia has a variety of causes. Detailed history and examination followed by endoscopy and radiological evaluation are the key to diagnosis.

Introduction

Dysphagia is defined as difficulty in swallowing due to involvement of any part of upper gastrointestinal (UGI) tract, from mouth to lower esophageal sphincter (LES). Based on the anatomical site, it can be of two types: (i) Oropharyngeal dysphagia, where dysfunction of nerves and muscles of mouth, pharynx or

upper esophageal sphincter leads to difficulty in initial phase of swallowing (ii) Esophageal dysphagia where there is obstruction to passage of solids / liquids due to esophageal dysfunction.

Clinical history is important to classify type of dysphagia and differentiate it from its clinical mimickers like odynophagia and globus. Odynophagia is painful swallowing due to infection or inflammation of esophagus. Globus is an uncomfortable sensation of something being stuck at the back of throat and sometimes can be associated with acid reflux disease.[1]

Based on etiology, dysphagia is of two types[1]: (i) Neuromuscular dysphagia: causes oropharyngeal dysphagia due to involvement of muscles of mouth, pharynx and upper esophageal sphincter or cranial nerves (V, IX, X and XII) or their nuclei in brain and, (ii) Structural dysphagia: causes esophageal dysphagia due to structural anomaly of esophagus, like scarring due to acid reflux disease, inflammation, tumours, and external compression from mediastinal masses. Less commonly, structural causes can also cause oropharyngeal dysphagia due to strictures or tumours of pharynx.

Dysphagia is a common clinical complaintwithprevalence of about 17% in adults.[2]It is a common symptom of many gastrointestinal (GI) disorders such as benign and malignant strictures of esophagus, esophagitis, foreign body in esophagus, fibrous rings/webs in esophagus, and extrinsic compression. It can lead to severe dehydration, malnutrition, respiratory infections, aspiration pneumonia with significant increase in patient morbidity and mortality.[3]It causes significant social and psychological burden on patients. Very few studies are available in literature discussing the spectrum of dysphagia in Indian population. Therefore, we aim to study clinical profile of patients with esophageal dysphagia in a tertiary care hospital with the objective of identifying various causes of dysphagia and their risk factors.

Material and methods

This prospective study was conducted in Department of Gastroenterology, Mahatma Gandhi Hospital, Jaipur from September 2022-23 after taking ethical clearance from Institutional Ethical Committee. Informed consent from each participant was taken.

Inclusioncriteria:

1. Adults > 18 years of age.
2. Dysphagia to either solids, liquids or both.

Exclusioncriteria:

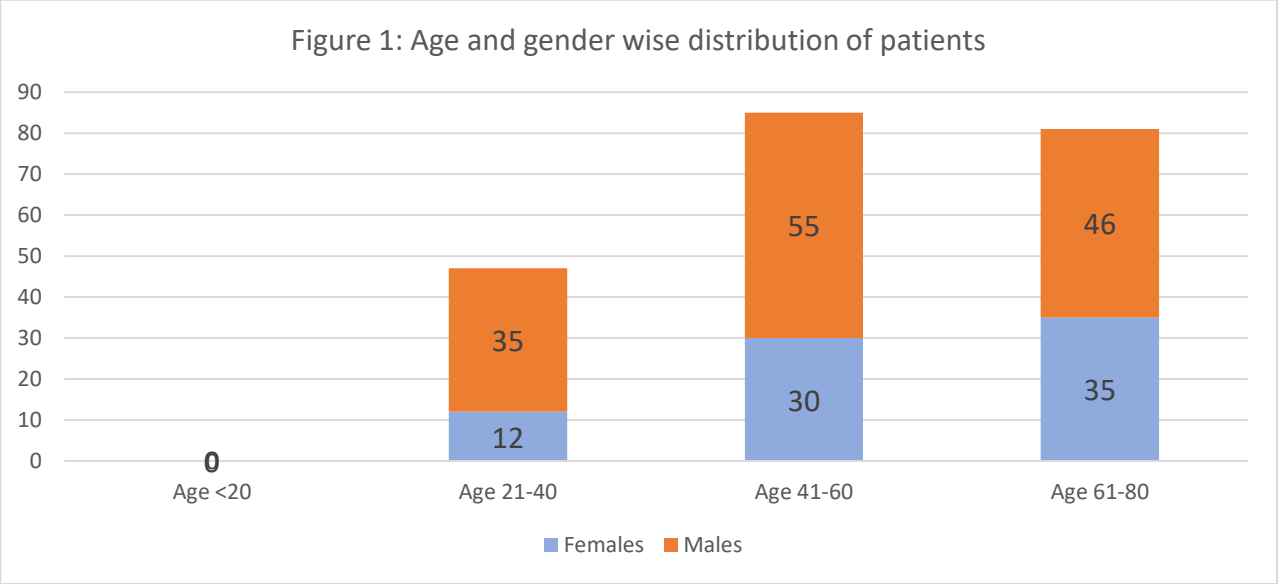
1. Patients < 18 years of age.
2. Oropharyngeal or neurological cause of dysphagia.
3. Hemodynamicallyunstable patients.
4. Patients who did not give consenttoundergo endoscopy.
5. Contraindications to UGI endoscopy.

A total of 213 patients were included in the study. Detailed history regarding onset, duration, severity and progression of dysphagia was taken. All patients were reviewed for underlying co-morbidities and addictions followed by detailedgeneral &systemic examination.
UGI Endoscopy was performed with Olympus 260 scope and evaluation for esophageal mucosal characteristicswas done by two separate operators. Biopsy was takenincase of suspicious lesions. Radiological aid in form of barium swallow, Computed tomography(CT) and Magnetic resonance imaging(MRI) was taken wherever required.

Statistical analysis was performed with the help of SPSS 23.0.

Results

In our study, mean age of patients was found to be 57.6 years. There were 136 (63.8%) male and 77 (36.1%) female patients. 85 patientswere in 41-60 years'age group and 81 patients in 61-80 years'age group. Among male patients, 95 (69.8%) had tobacco addiction, 60 (44.1%) had alcohol addiction, and 50 (36.7%) had both alcohol and tobacco addiction. Among female patients, 31 (40.2%) had tobacco addiction and none had alcohol addiction.



Out of 213 patients, 69 (32.39%) were diagnosed with malignancy. Mean age of these patients was 63.3 years and male: female ratio was 3:1 (52 males and 17 females). Of these,2 (2.8%) patients had gastric cardia adenocarcinoma, 16 (23.1%) had adenocarcinoma of esophagus and 51 had squamous cell carcinoma (SCC) of esophagus and all these patients had tobacco addiction.Gastroesophageal junction (GEJ) involvement was seen in 18 (26%)patients. Most common site of malignancy was in lower 1/3rd of esophagus, followed by middle 1/3rd and then upper1/3rd.

144 patients (67.6%) had benign etiology. Mean age of these patients was 49 years. Most common cause was esophagitis due to gastro-esophageal reflux seen in 60 patients (28.16%), followed by esophageal ulcer in 12 (5.63%), achalasia in 12 (5.63%), corrosive stricture in 8 (3.75%), peptic stricture in 7 (3.28%), esophageal ring in 6 (2.8%) and, hiatus hernia in 6 patients(2.8%). Other benign causes included – Esophagealcandidiasis, Postsclerotherapy stricture, Esophageal web and Eosinophilic esophagitis.
20 patients had normal endoscopy.

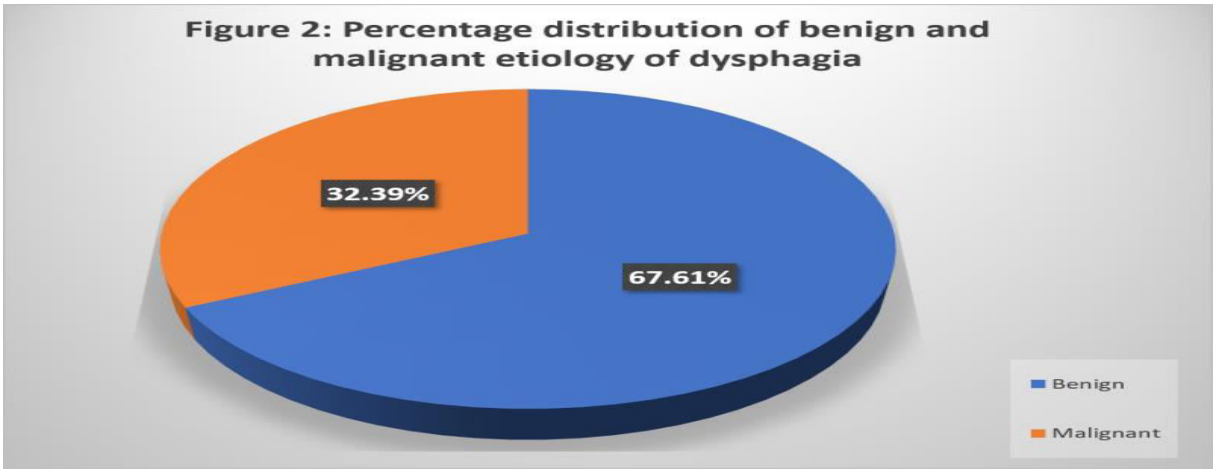


Table 1 Table showing frequency of benigncausesof dysphagia	
Pathology	**No. of Patients**
Esophagitis	60
Esophageal Ulcer	12
Achalasia	12
Corrosive stricture	8
Peptic stricture	7
Esophageal ring	6
Hiatus hernia	6
Esophageal Candidiasis	5
Postsclerotherapy stricture	3
Eosinophilic esophagitis	3
Esophageal web	2

Discussion-

Dysphagia is a commonly encountered clinical problem that can occur due to neuromuscular or structural deformity of the upper GI tract and esophagus. Very limited data is available in literature on prevalence of various etiologies of dysphagia, especially in Indian population.

Dysphagia is a common problem in elderly age group.[4]This occurs mainly due to the changes in physiology of swallowing with increasing age due to reduction in connective tissue elasticity & muscle mass resulting in loss of strength and range of motion. These changes negatively impact the effective and efficient flow of swallowed materials through upper GI tract.[4] Mean age of patients in our study was 57.6 yearssimilar toKidambri T et al,who in their study on "Temporal trends in the relative prevalence of dysphagia etiologies from 1999-2009" found the mean age of patients to be 53.5 years,[5] which may vary by genetic & environmental factors in western countries as compared to Indian scenario.

Malignancy is an important cause of dysphagia leading to significant morbidity and mortality. In our study 32.39% (n=69) were diagnosed with malignancy with mean age of 63.3 years. Sahu S et al,in their study on endoscopic evaluation of 150 patients with dysphagia found that 47% of patients had malignancy causing dysphagia.[6]Zhang Y et al, in their study on epidemiology of esophageal cancer found mean age of diagnosis of cancer as 67 years[7] while Shil BC et al observed that esophageal carcinoma was most commonly
seen in 6th decade of life.[8]Thus, it shows that dysphagia due to malignancy is an alarming problem encounteredmainly in elderly population.

Studies by Puhakka HJ et aland Malik IA et al have concluded that esophageal cancer is more common in males.[9,10] A study done on 138 patients with esophageal cancer in Christian Medical College Hospital, Vellore reported that male: female was about 3:1[11], similar to our study with male: female ratio of3:1. This was due to greater exposure to tobacco chewing, smoking and alcohol intake in male population. A study by Kishve SP et al on oesophageal dysphagia had similar gender preponderance in their study.[12]

There is geographical variation in the pathology of esophageal cancer. In a study on Global cancer transition by Bray F et al, according to the Human Development Index (HDI) there was higher incidence of adenocarcinoma esophagus in countries with higher HDI.[13] On the other hand, countries with low HDI, such as India had higher incidence of Esophageal Squamous Cell carcinoma(SCC). Currentlyin India, SCC is the most common type of esophageal cancer and the most common location is distal 1/3rd of esophagus.[14] In our study SCC was found in 73.9% of patients with malignancy, with the most common site of malignancy being distal 1/3rd.

The incidence of GEJ carcinoma has risen significantly particularly in western countries.[15-18]In the latest edition of American Joint Committee on Cancer (AJCC) TNM staging system, cancers involving GEJ with anepicenterwithin 2 cm of GEJ were staged as esophageal cancer while those with an epicenter> 2 cm away from GEJ, even if GEJ is involved, were staged as stomach cancers.[19]Data on the incidence of GEJ carcinoma in Asian countries is limited. Hatta et al. in his study on different time trends and management of GEJ adenocarcinoma in three Asian countries reported an increase in the incidence of GEJ cancer.[20]In our study, GEJ involvement was seen in 26% (n=18) patients. Among them, 2 (2.8%) had gastric cardia adenocarcinoma and 16 (23.1 %) had adenocarcinoma of esophagus.

In our study, the most common benign cause of dysphagia was esophagitis due to gastroesophageal reflux disease (GERD). This diagnosis was made after carefully excluding any obstructive pathology and response to proton pump inhibitor (PPI) therapy. In our study, 28.16% patients had GERD causing dysphagia similar to the study conducted by Kidambri et al. where GERD was one of the common causes of dysphagia.[5]In our study majority of patients with dysphagia secondary to GERD were females similar to the study by Grivcheva-stardelova k et al where 58.73% patients were females.[21]

Corrosive substance ingestion is an important public health issue and its incidence is increasing in developing countries due to social, economic and educational factors. This problem is largely unreported and therefore its true prevalence cannot be determined. In our study 3.75% patients had a corrosive stricture with mean time to stricture development being 9 weeks. A study by Genc A et al on esophageal motility changes in acute and late periods of caustic esophageal burns and their relation to prognosisin children showed that strictures usually develop within 8 weeks after ingestion in 80% of patients, but it can occur as early as after 3 weeks or as late as after 1 year. [22]

Conclusion-

Dysphagia is one of the common presenting symptom in the gastroenterology OPD and needs proper evaluation for proper management. It has varied etiology, and most patients can be diagnosed with a combination of UGI endoscopy, barium swallow, CT and MRI. Malignancy is an important cause of dysphagia, especially in the elderly. Esophageal SCC still remains the most common malignancy in this part of world, but the incidence of GEJ cancer is also increasing.

Type of Publication: Original Research Paper
Conflicts of Interest: Nil

References

1. Eslick GD, Talley NJ. Dysphagia: epidemiology, risk factors and impact on quality of life – a population-based study. Aliment PharmacolTher. 2008; 27: 971–9.
2. Lindgren S, Janzon L. Prevalence of swallowing complaints and clinical findings among 50–79-year-old men and women in an urban population. Dysphagia. 1991; 6: 187–92.
3. Sura L, Madhavan A, Carnaby G, Crary MA. Dysphagia in the elderly: management and nutritional considerations. ClinInterv Aging. 2012; 7: 287–98.
4. Kidambri T, Toto E, Ho N, Taft T, Hirano I. Temporal trends in the relative prevalence of dysphagia etiologies from 1999-2009. World JGastroenterol 2012; 18: 4335–41.
5. Sahu S, Kher KS, Wagh DD, Swarnakar M, Pandey P, Agnihotri I. Endoscopic evaluation of patients presenting with dysphagia at rural Hospital AVBRH. JDattaMegheInst Med Sci Univ. 2017; 12: 196–205.
6. Zhang Y. Epidemiology of esophageal cancer. World JGastroenterol. 2013; 19: 5598–606.
7. Shil BC, Islam MA, Nath NC, Ahmed F. Oesophageal carcinoma: trends and risk factors in rural Bangladesh. J Dhaka Med Coll 2010; 19:29–32.
8. Puhakka HJ, Aitsalo K. Oesophageal carcinoma: endoscopic and clinical findings in 258 patients. J Laryngol Otol. 1988; 102: 1137–41.
9. Malik IA, Khan WA, Khan ZK. Pattern of malignant tumors observed in a university hospital: a retrospective analysis. J Pak Med Assoc. 1998; 48: 120–2.
10. Samarasam I. Esophageal cancer in India: current status and future perspectives. Int J Adv Med Health Res. 2017; 4:5–10.
11. Kishve SP, Kishve PS, Arif SM, Kalakoti P. Clinico-pathological profile of oesophageal dysphagia. Ind Med Gaz. 2011; 135: 379–84.
12. Bray F, Jemal A, Grey N, Ferlay J, Forman D. Global cancer transitions according to the Human Development Index (2008-2030): a population-based study. Lancet Oncol. 2012; 13: 790–801.
13. Cherian JV, Sivaraman R, Muthusamy AK, Jayanthi V. Carcinoma of the esophagus in Tamil Nadu (South India): 16 year trends from a tertiary center. J Gastrointestin Liver Dis. 2007; 16: 245–9.
14. Botterweck AA, Schouten LJ, Volovics A, Dorant E, van den Brandt PA. Trends in incidence of adenocarcinoma of the oesophagus and gastric cardia in ten European countries. Int JEpidemiol. 2000; 29: 645–54.
15. Hansson LE, Sparen P, Nyren O. Increasing incidence of carcinoma of the gastriccardiainSwedenfrom1970to1985. Br J Surg. 1993; 80:374–7.
16. Parfitt JR, Miladinovic Z, Driman DK. Increasing incidence of adeno carcinoma of the gastroesophageal junction and distal stomach in Canada– an epidemiological study from 1964–2002. Can J Gastroenterol. 2006; 20: 271–6.
17. Wayman J, Forman D, Griffin SM. Monitoring the changing pattern of esophago-gastric cancer: data from a UK regional cancer registry. Cancer Causes Control. 2001; 12: 943–9.
18. Amin MB, Edge SB, Brookland RK et al. The eighth edition AJCC cancer staging manual: continuing to build a bridge from a population-based to a more "personalized" approach to cancer staging. CA Cancer JClin. 2017; 67:93–9.

19. Hatta W, Tong D, Lee YY, Ichihara S, Uedo N, Gotoda T. Different time trend and management of esophagogastric junction adenocarcinoma in three Asian countries. DigEndosc. 2017; 29:18–25.
20. Grivcheva-Stardelova K, Popova-Jovanova R, Deriban G, Joksimovic N, Zdravkovska M. Dysphagia In gastroesophageal reflux disease (GERD). Macedonian Med Rev. 2014; 68:32–5.
21. Genç A, Mutaf O. Esophageal motility changes in acute and late periods of caustic esophageal burns and their relation to prognosis in children. JPediatr Surg. 2002; 37: 1526–8.