Original Article

Etiological and clinical profiles of patients with dysphagia: A teaching institution experience

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Abstract

Background: Dysphagia can involve any structure from the mouth to the lower esophageal sphincter. The etiologies vary from benign causes to malignant lesions. There is dearth of data regarding dysphagia in our population. **Methods:** A total of 208 patients with complaints of dysphagia were screened for the study. After ruling out neurological/local oropharyngeal causes of dysphagia, 200 patients with suspected esophageal dysphagia (ED) were recruited in the study. Dysphagia was graded as per the dysphagia scoring system. All patients underwent upper gastro-intestinal endoscopy and were evaluated for the presence of mechanical and non-mechanical causes of ED. **Results:** The mean age of patients with dysphagia was 53.8 ± 15.4 years. with males and females being 82 and 118, respectively. The mean duration of the symptom was 7.2 ± 10.6 months (median 3 months). Ninety-eight patients (49%) having dysphagia were in the age group of 56–65 years. The dysphagia score was 0 among 58, and 4 among 26 subjects. Foreign body sensation was the most frequent chief complaint in 90 (45%) patients. Ninety-six (48%) and 104 (52%) patients had mechanical and non-mechanical causes of dysphagia, respectively. Among mechanical causes of dysphagia, 68 patients (70.8%) had esophageal growth and 28 (29.2%) had esophageal stricture. Sixty-seven patients had squamous cell carcinoma. Among non-mechanical causes, 50 (48.1%) had globus sensation, 24 (23.1%) had hiatus hernia, and 16 (15.4%) functional dysphagia. **Conclusion:** Dysphagia is a common problem with varied etiologies. The esophageal growth and globus sensation are among the predominant causes of ED. We stress that all patients of dysphagia must be meticulously investigated.

Keywords: Dysphagia, endoscopy, esophageal growth, globus sensation

Introduction

Dysphagia is classically defined as impairment in swallowing. It can involve any structure of the upper gastro-intestinal tract from the mouth to the lower esophageal sphincter and is referred to either oropharyngeal dysphagia (OD; difficulty with initial phases of a swallow) or esophageal dysphagia (ED; obstruction to passage of foods and/or liquids from the mouth to the stomach).[1] The etiologies vary from local causes in the oral cavity to neurologic, myopathic, metabolic, inflammatory/auto-immune, infectious, structural, and iatrogenic diseases, malignancies, and psychiatric diseases.[2] While OD involves diseases of the musculoskeletal or nervous system, on the other hand, ED involves localized neuromuscular disorders or obstructive lesions.[3]

The annual incidence of esophageal food impaction is estimated to be 25 per 100,000 persons per year.[4] The estimated incidence is higher in males and progressively increases with age, reaching the peak around the seventh decade of life and with stroke among the elderly being the most common cause across the world.[5] Esophageal squamous cell cancer, on the other hand, has been found to be most common cause of dysphagia in Asia.[6] In a population-based survey among Americans, dysphagia was affecting 16.1% of adults at some point during their lives.[7] In contrast, lower prevalence of dysphagia has been seen in Asian

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countries.[8-10] There is no nation-wide registry to delineate the exact estimate of incidence and prevalence of dysphagia in our population.

The etiological factors leading to dysphasia vary with age, sex, and regional distribution. In a meta-analysis, dementia was the most common cause among various causes of OD.[11] Regarding ED, eosinophilic esophagitis and esophageal adenocarcinoma are among the predominant causes in United States[12] and other Western nations,[6,12] whilst Chagas disease is still being prevalent in some regions of South America.[6] Among Indian studies, esophageal carcinoma has been the principal cause of dysphagia, followed by esophagitis secondary to reflux injury.[1,13-15]

Despite being a common problem worldwide as well as in India and with such varied etiologies, there have been very few studies on dysphagia and its evaluation from India. Patients usually consult primary care/family physicians for dysphagia complaints. Primary care/family physicians may play an important role in exact assessment of dysphagia and its burden by incorporating their clinical skills and timely referral for endoscopy/other diagnostic modalities if needed. Our hospital is a government teaching institute catering patients all over from Haryana as well as adjacent states and providing all the facilities for assessment of patients with dysphagia, yet the data on dysphagia are very limited from this part of the country. With this background knowledge of dysphagia and various studies highlighting its importance in clinical settings, we planned this study to know the etiological and clinical profiles of patients presenting with ED. In addition, the authors stress upon the proper assessment of dysphagia by the primary care/family physicians.

Material and Methods

This prospective observational study was conducted in the Department of Medicine at Pandit Bhagwat Dayal Sharma Post Graduate Institute of Medical Sciences from June 2021 to October 2022. A total of 208 patients visiting Medicine/ENT/Surgery/Neurology departments with complaints of dysphagia were screened for the study. All the patients were clinically evaluated at the time of enrollment with thorough history taking, and examination was done to find out the possible cause of dysphagia. After ruling out the neurological/local oropharyngeal causes of dysphagia, 200 patients with suspected ED were recruited in the study. Dysphagia was graded as per the dysphagia scoring system.[16] Complete blood count, liver and kidney function tests, and other blood and radiological investigations were carried out in patients as appropriate. All patients underwent upper gastrointestinal endoscopy (UGIE) for the assessment of dysphagia after informed consent. The study protocol was approved by the Biomedical Research Ethics Committee, Pt. B.D. Sharma PGIMS/UHS, Rohtak (BREC/20/Med./08 dt. 02.04.21).

Definitions

- Dysphagia: It was defined as difficulty in swallowing solids/semisolids/liquids [Table 1].
- Functional dysphagia: It was defined as a sensation of food sticking or abnormal bolus transmitting through the esophageal body in the absence of a structural, mucosal, or motor mechanism for symptom generation.
- Globus sensation: It was defined as a persistent or intermittent non-painful sensation of a lump or foreign body in the throat localized in the midline between the thyroid cartilage and sternal notch.[17,18]

Methodology

All patients were examined by UGIE using a gastroscope (OLYMPUS GIF-H 190/GIF-XP 190 N or KARL STORZ 13821 PKSK/NKSK) for assessment of dysphagia. The endoscopic-guided biopsy of lesions causing mechanical obstruction or any suspicious lesions on white light endoscopy (WLE)/narrow band imaging (NBI) was done and sent for histopathological examination (HPE).

Evaluation and management of patients for dysphagia

Dysphagia was classified into mechanical and non-mechanical dysphagia, and patients were screened for the various causes of mechanical and non-mechanical dysphagia.[19] Los Angeles classification was used for grading of esophagitis,[20] and Hill's grading was used to grade hiatus hernia.[21] HPE reports were collected in all patients undergoing biopsy of lesion. The patients who had malignant growth in the esophagus were referred to Oncosurgery/Radiation Oncology departments for further management. Dilatation of the strictures/rings/web was done using Savary Gillard (SG) dilators/controlled radial expansion (CRE) balloon/placement of self-expandable metallic stent (SEMS) as deemed appropriate.

Data record and statistical analysis

The data were documented in pre-designed proformas. Computer files were created in Microsoft Excel for windows. Data analysis was done using Quickcals (GraphPad Software; San Diago, CA). The normally distributed variables were expressed as mean ± standard deviation (SD), and continuous variables with skewed distribution as median (inter-quartile range). Categorical data were presented as frequency and proportions.

Results

Baseline clinical and demographic characteristics

The mean age of patients with dysphagia was 53.8 ± 15.4 years. The proportion of males and females was 82 and 118, respectively. The mean duration of the symptom was 7.2 ± 10.6 months (median 3 months). Four patients had a family history of Ca esophagus. Ninety patients were smokers, 49 were

alcoholic, 4 had history of corrosive ingestion, and 25 had history of NSAIDs/indigenous medicine intake. The demographic profile and risk factors are shown in Table 2.

Dysphagia, age of the study population, and dysphagia score

Ninety-eight patients (49%) having dysphagia were in the age group of 56–65 years, 48 (24%) in the age group of 36–45, 36 (18%) in the age group of 46–55, 14 (7%) in the age group of 26–35, and 4 (2%) in the age group of 15–25 years. The dysphagia score was 0 among 58, 1 among 14, 2 among 46, 3 among 56, and 4 among 26 subjects, as shown in Table 3.

Dysphagia and associated complaints

All patients were evaluated thoroughly for the presenting complaints to hospital in addition to dysphagia. Foreign body sensation was the most frequent associated chief complaint in 90 (45%) patients, chest pain in 58 (29%), odynophagia in 50 (25%), throat pain in 48 (24%), recurrent vomiting episodes in 44 (22%), pain abdomen in 14 (7%), cough on swallowing in 8 (4%), and hematemesis in 2 (1%), as shown in Table 4.

Types of dysphagia in patients

All patients of esophageal dysphagia underwent UGIE for the underlying cause of dysphagia. Ninety-six (48%) patients had mechanical dysphagia, and 104 (52%) had non-mechanical causes of dysphagia. Among mechanical causes of dysphagia, 68 patients (70.8%) had esophageal growth, and 28 (29.2%) had esophageal stricture. Similarly, among non-mechanical causes, 50 (48.1%) had globus sensation, 24 (23.1%) had hiatus hernia, 16 (15.4%) had functional causes, 10 (9.6%) had gastritis, and 4 (3.8%) had achalasia cardia [Table 5].

Spectrum of esophageal growth and stricture in patients with mechanical dysphagia

In patients with mechanical dysphagia, 68 (70.8%) patients had esophageal growth. On further evaluation, 38 (55.5%) patients had ulcero-proliferative growth, 26 (38.9%) had ulcerated growth, and 4 (5.6%) had nodular growth. The mean distance of growth from incisors was 21.5 ± 9.6 cm. Esophageal stricture was found in 28 patients. Twelve (42.8%) of the patients had only stricture, 8 (28.6%) patients had stricture with growth, 4 (14.3%) had stricture after corrosive injury, and 4 (14.3%) patients had stricture with esophagitis. Among 76 patients with esophageal growth and stricture with growth, 67 (88.2%) patients had squamous cell carcinoma (SCC) with none of the patients having adenocarcinoma. Six (7.9%) patients had dysplasia, whereas 3 (3.9%) had only a hyperplastic stratified squamous epithelium [Table 6].

Table 1: Grades of dysphagia[16]

Score	Symptom Severity
0	Able to consume normal diet.
1	Dysphagia with certain solid foods.
2	Able to swallow semi-solid, soft foods.
3	Able to swallow liquids only.
4	Unable to swallow saliva.

Table 2: Demographic and clinical profiles of patients with dysphagia

Parameters	No. of patients (*n*=200)
Age (years); Mean±SD	53.8±15.4
Sex (M:F)	82:118
Duration of symptoms (months); Mean SD (Mean ± SD)	7.2±10.6 (3)
Family history of carcinoma esophagus	4
H/o Smoking	90
H/o Alcohol	49
H/o Corrosive injury	4
NSAID intake	25

Table 3: Dysphagia score in patients

Dysphagia Score	No of patients (*n*=200)
0	58 (29%)
1	14 (7%)
2	46 (23%)
3	56 (28%)
4	26 (13%)

Table 4: Chief complaints in patients with dysphagia

Chief complaints	No of patients (*n*=200)
Foreign Body sensation	90 (45%)
Chest Pain	58 (29%)
Odynophagia	50 (25%)
Throat Pain	48 (24%)
Recurrent Vomiting	44 (22%)
Pain Abdomen	14 (7%)
Cough on swallowing	8 (4%)
Hematemesis	2 (1%)

Discussion

The spectrum of dysphagia ranges from functional to malignant lesion of the esophagus; both conditions present as dysphagia in clinical practice; however, the latter require urgent intervention. Esophageal dysphagia is frequently encountered in clinical practice with untreated dysphagia carrying significant morbidity and mortality. With this study, we attempted to delineate the causes of dysphagia and also tried to find out the various etiologies of ED. The authors have observed the casual attitude of patients with a few paying attention to the developing symptoms, and the same has been reflected in this study with the median duration of symptoms being 3 months. Patients often are more comfortable in discussing such health issues with primary care/family physicians rather than directly approaching to specialists/tertiary care centers. In this context, the role of primary care/family physicians becomes much more important in proper assessment of dysphagia.

The mean age of patients with esophageal dysphagia was 53.8 ± 15.4 years with the majority of the study population (49%) in the age group of 56–65 years. These trends of age at presentation were similar to other Indian studies[15,22,23] and signify this problem to be more with the advancing age. The mean duration of the symptom was 7.2 ± 10.6 months (median 3 months). The dysphagia score was 0 among 58 (29%) with 3 and 4 among 82 (41%) patients. These patterns of dysphagia are well in line with the other literature studies stating 49% patients reported issues to just solids, 6.3% reported problems swallowing only liquids, and 44.7% reported difficulty swallowing both solids and liquids.[24] With dysphagia score, one can have a preliminary idea of the underlying etiology as these patterns signify the underlying process (namely, dysphagia to liquids in motility disorders vs dysphagia to solids in esophageal growth/strictures) and the need for further evaluation by various assessment tools (namely, endoscopy/high-resolution manometry/24 Hr pH impedance manometry).

Among the patients, foreign body sensation and chest pain were the most common chief complaints with >90% of patients having a combination of these symptoms [Table 4]. These findings were expected as patients in clinical practice have a combination of symptoms. The various other studies have also shown the concomitant presence of dyspeptic symptoms;[13] a decrease in body weight; a lack of appetite, heartburn, and vomiting;[1] and various other symptoms with dysphagia.[25]

After endoscopic evaluation, 96 patients were found to have mechanical causes and 104 had non-mechanical causes of dysphagia [Table 5]. Among mechanical causes, the majority of patients (70.8%) had esophageal growth, followed by stricture formation due to various underlying etiologies. Our findings get the strength from the various other previous studies from India reporting esophageal growth as the main cause of dysphagia.[1,13-15,26-28] Among 28 patients with esophageal stricture, only 4 (14.3%) had esophageal stricture either peptic or secondary to active esophagitis, and this number is far less than that reported from Panigrahi *et al.*[29] stating corrosive stricture and Western data stating gastro-esophageal reflux disease (GERD) as the main etiologies of dysphagia.[12,30] These trends clearly indicate the esophageal growth as one of the most common reasons of dysphagia in our settings.

Table 5: Types of dysphagia in patients

Mechanical causes (*n*=96)		Non-mechanical causes (*n*=104)	
Esophageal growth	68 (70.8%)	Globus sensation	50 (48.1%)
Esophageal stricture	28 (29.2%)	Hiatus hernia	24 (23.1%)
		Functional	16 (15.4%)
		Gastritis	10 (9.6%)
		Achalasia cardia	4 (3.8%)

Among 68 patients with esophageal growth, 38 (55.9%) patients had ulceroproliferative growth and 26 (38.2%) had ulcerated lesions. Eight patients had stricture with growth. Biopsies were taken in all 76 patients having esophageal growth and esophageal stricture with growth. On HPE, 67 (88.2%) had SCC with six patients having dysplasia and three had a hyperplastic stratified squamous epithelium. These findings are in agreement with findings of other workers,[14,15,22] albeit SCC was reported much higher (>85%) in our study. We did not have any patient with adenocarcinoma, and the findings are in sharp contrast to that reported by others.[13,23] The mean distance of growth was 21.5 ± 9.6 cm, and since SCC is more common in growth involving upper 2/3 of the esophagus,[31] one might speculate that the majority of patients had SCC secondary to the growth location; however, we cannot comment concretely on these findings.

A total of 104 patients were found to have non-mechanical causes of dysphagia. The majority (50; 48.1%) of patients had globus sensation, and only 4 patients (3.8%) had achalasia cardia [Table 5]. Forty (80%) patients with globus sensation were females. The prevalence of globus has been reported to be extremely common in the literature with up to 46% of the healthy individuals reporting globus sensation with a peak onset in middle-age and female preponderance.[32-34] We had the replication of these trends in patients in our study with 50 (48.1%) having globus sensation with female preponderance.

We had certain inherent limitations with the study. The sample size was small, and our findings cannot be representative of the exact dysphagia burden countrywide. Second, we excluded patients of OD and only patients with suspected ED were recruited. We were not able to estimate the exact smoking

Table 6: Pattern of esophageal growth and stricture

Esophageal Growth	No. of Patients (*n*=68)	Esophageal stricture	No. of Patients (*n*=28)
Ulcero-proliferative	38 (55.9%)	Stricture only	12 (42.8%)
Ulcerated	26 (38.2%)	Stricture with growth	8 (28.6%)
Nodular	4 (5.9%)	Stricture secondary to corrosive injury	4 (14.3%)
		Stricture with esophagitis	4 (14.3%)
Histopathology (HPE) *n*=76			
SCC			67 (88.2%)
Adenocarcinoma			0
Dysplasia			6 (7.9%)
Hyperplastic stratified squamous Epithelium			3 (3.9%)

pattern/types of smoking and also the exact amount of alcohol consumption, which might have put more highlight on the precise association of these risk factors with esophageal growth.

In conclusion, we state that dysphagia is emerging as an important medical problem. The etiologies vary from benign causes to malignant lesions, necessitating timely diagnosis and interventions. We hereby stress that dysphagia should be evaluated in all patients, irrespective of the age and sex. The role of primary care/family physicians may be of paramount importance in early diagnosis and referrals for treatment, if needed.

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Conflicts of interest

There are no conflicts of interest.

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