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Etiology and endoscopic profile of dysphagia in adults - Single-centre study at a tertiary care centre in South India

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Background: Dysphagia is defined as difficulty in deglutition. It can be either structural or motility abnormality in the passage of food from the oral cavity to the stomach. Upper GI endoscopy is the most important tool to diagnose dysphagia and rule out premalignant and malignant lesions. The purpose of the study was to classify various causes of dysphagia. **Methods:** This prospective observational study was conducted on 206 patients with complaints of dysphagia. Detailed history, physical examination was done. Upper GI endoscopy was done in all cases, and biopsies were taken if required. Oropharyngeal and neurological dysphagia were excluded from the study. The statistical analysis was performed using Microsoft Excel. The mean, percentage and proportions were calculated. **Results:** Two hundred and six patients were included in the study. Out of 206 patients, 127 were females, and 79 were males. The mean age was 43.62 years. The commonest age group was 21- 40 years contributing 41.7% cases, followed by 41-60 years contributing to 30.8% cases. Benign etiology (n= 141) was more common than that of malignant (n= 65). The commonest benign etiology was reflux esophagitis (n =54) followed by esophageal candidiasis (n= 38). The commonest malignant etiology was adenocarcinoma of the esophagus (n= 38), followed by squamous cell carcinoma (n= 24). **Conclusions:** The upper GI endoscopy is effective and safe modality to diagnose dysphagia. Benign etiologies were more common among females, but malignant causes were more common among males. The incidence of esophageal malignancy increases with advanced age.

Keywords: Etiology, Endoscopic profile, Dysphagia

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Introduction

By definition, dysphagia is a subjective sensation of difficulty or abnormality and swallowing. It can be associated with odynophagia (painful swelling) or globus sensation, characterized by a non-painful feeling of lump, tightness, foreign body or retained food bolus [1].

There are two types of dysphagia; 1. oropharyngeal dysphagia and 2. esophageal dysphagia. In clinical practice, esophageal dysphagia is more common than that of oropharyngeal type [2]. Dysphagia is highly prevalent worldwide, with a prevalence rate of up to 17% of the adult population with a peak in the 5th decade of Life [2].

All patients with dysphagia require urgent evaluation after the appearance of symptoms. Untreated dysphagia can lead to dehydration, aspiration, respiratory infection, malnutrition and even death [3]. Dysphagia significantly affects the quality of Life (QOL) and has a significant economic burden on society. In addition, patients with dysphagia might develop psychological issues, including anxiety and depression [4,5].

This study aimed to correlate symptoms, examination findings and characteristic findings in upper GI endoscopy. In addition, classifying the various causes of dysphagia which will help to early diagnosis and to avoid severe complications.

Material and Methods

Study setting: This study was conducted at Saveetha Medical College, Thandalam, Tamil Nadu.

Study duration and type: 15 months (June 2020 to August 2021), Prospective observational study

Sampling Technique: Simple random sampling.

Sample size: 206 patients. We included inpatient and outpatient from the Department of Medical Gastroenterology, Surgical Gastroenterology, General Medicine and General Surgery, who presented with dysphagia. But associated symptoms were odynophagia, weight loss, regurgitation of food, vomiting and hematemesis in addition to dysphagia. Detailed history, physical examination was done.

Study population: Adults >18 years presenting with complaints of dysphagia.

Inclusion criteria: All adult patients presenting with dysphagia

Exclusion criteria

01. Age less than 18 years.
02. Patients not willing to participate.
03. Patients who did not tolerate endoscopy procedures.

Data collection procedure: After taking a detailed history, a physical examination was done. Upper GI endoscopy was performed after taking informed written consent. All patients were kept nil per oral overnight before the procedure. Upper GI endoscopy was performed by experienced Medical and Surgical gastroenterologists. Endoscopic guided biopsy was taken in indicated cases (In cases with esophageal growth, esophageal ulcers and suspected eosinophilic esophagitis). The patients were also convinced for chest imaging in case of suspected malignancies.

Tools used: Olympus – CV 150 upper GI endoscope was used, and biopsies were taken with standard non-spiked Cook's biopsy forceps.

Statistical analysis: Data entry and management were done in Microsoft Excel, the mean percentage and proportion were calculated.

Ethical considerations: Written informed consent was obtained from all participants.

Results

During our study period, a total of 206 patients were included in the study. Out of 206 patients, 127 patients (61.6%) were females, and 79 patients (38.4%) were males. The Female: male ratio was 1.6:1. We grouped our patients by age into five groups. Age < 20 years – 6 (2.9 %) patients, Age 21 to 40 years- 86 (41.7 %) patients, Age 41 to 60 years- 63 (30.8%) patients, Age 61 to 80 years- 42 (20.3%) patients, Age 81 years and above – 9 (4.3%) patients (Table 1).

Table 1: Distribution of patients according to age group.

Age group	No. of patients
< 20 years	6 (2.9 %)
21 to 40 years	86 (41.7 %)
41 to 60 years	63 (30.8%)
61 to 80 years	42 (20.3%)
81 years and above	9 (4.3%)

History of chronic alcohol intake was present in 22 patients (10.6%), and a history of smoking was present in 40 (19.4%). 48 (23.3%) patients had diabetes mellitus. 70 (33.9%) cases had dyspeptic symptoms in addition to dysphagia. 42 (20.3%) patients had odynophagia. 61 (29.6 %) patients had weight loss. On physical examination was normal in 164 patients (79.6%), Anemia in 36 cases (17.4%) and lymphadenopathy in 8 (3.8%) cases, oral candidiasis seen in 7 (3.4%) cases. Both Anemia and lymphadenopathy were present in 2 patients.

On Upper GI Endoscopy: Benign etiology was present in 141 cases and malignant etiology in 65 patients. Among benign etiologies, 54 cases had mucosal breaks in distal esophagus suggestive of esophagitis, 38 cases had curdy white plaques in esophagus suggestive of candidial/monilial esophagitis, 12 cases had dilated esophagus and LES tightness suggestive of achalasia cardia, 11 cases had distal oesophagal ulcers, six patients had post cricoid web, five patient had peptic stricture, three patients had corrosive strictures, 2 cases had feline esophagus suggestive of eosinophilic esophagitis, and 10 patients had no abnormalities on endoscopy (Table 2).

Table 2: Benign Causes of dysphagia.

Cause	No. of cases
Reflux esophagitis	54
Candidiasis	38
Achalasia Cardia	12
Oesophageal ulcers	11
Normal endoscopy	10
Post cricoid web	6
Peptic Stricture	5
Corrosive stricture	3
Eosinophilic esophagitis	2

For patients with strictures (both peptic and corrosive), biopsies were taken. There was no malignancy reported in these patients. In patients with eosinophilic esophagitis, biopsies were taken. Histopathological reports were definitive of eosinophilic esophagitis in both cases.

Out of 65 patients with malignant etiology, 62 patients revealed esophageal growth, so biopsies were taken. 38 (18.4%) patients revealed adenocarcinoma, and 24 (11.4%) revealed squamous cell carcinomas. 3 (1.4%) patients had growth stomach at the level of the cardia (Table 3).

Table 3: Malignant causes of dysphagia

Cause	No. of cases
Adenocarcinoma esophagus	38
Squamous Cell carcinoma esophagus	24
Gastric cancer	3

Discussion

Though only a few studies reveal different etiologies and endoscopic findings in patients of dysphagia, there are no more extensive studies from the South Indian population [6,7,8]. This study was conducted to determine and investigate the etiology and endoscopic findings in patients with dysphagia at a tertiary care centre.

Dysphagia is defined by the subjective sensation of difficulty or abnormality of swallowing during the passage of food bolus from the mouth to the stomach or subjective perception of obstruction during swallowing. There are two types of dysphagia classified depending on the location as an oropharyngeal or esophageal type of dysphagia. Pathologic conditions of the oral cavity, pharynx, oesophagus, and proximal stomach can manifest with dysphagia [9].

There are various associated symptoms of dysphagia depending upon the nature of the lesion. The patients with malignant neoplastic tumours of the upper aerodigestive tract exhibit significant alarming symptoms in addition to dysphagia. The associated symptoms of dysphagia include weight loss, loss of appetite, heartburn and vomiting [10].

Dysphagia can result in reduced or altered oral intake of food/liquid, contributing to malnutrition or lowered nutritional status. Malnutrition can further contribute to decreased functional capacity. Thus, dysphagia may trigger or promote the frailty process among elderly persons [11]. Dysphagia affects the quality of Life by causing malnutrition, aspiration and weight loss. It is also associated with repeated outpatient visits and has a high estimated economic burden [11]. Fluoroscopic evaluation in modified barium swallow and esophagography is the commonly used assessment tool for dysphagia. These studies are important to evaluate the esophagus for structural abnormalities such as esophageal diverticula, strictures, webs and masses [9]. Esophagogastroduodenoscopy (EGD) provides high-quality colour images of the esophagus and stomach. It has the

Therapeutic advantage of allowing for biopsy, cautery, dilatation, banding, sclerotherapy and dilation [12]. Compared with radiological studies of the oesophagus, including barium radiograph, endoscopy has increased sensitivity for milder grades of esophagitis and Barrett esophagus [13]. Through endoscopy is insensitive for diagnosing primary motility disorders but is necessary to exclude inflammatory and neoplastic conditions of the esophagus that can produce patterns of achalasia or diffuse oesophagal spasm [14]. Upper GI endoscopy is an important mean to follow up the patients with structural lesions of the esophagus [15].

In our study, the age of the study population varied from 18 years to 90 years, with a mean age of 43.6 years. The maximum number of patients was 21 to 40 years- 86 (41.7 %) patients, followed by the age group of 41 to 60 years- 63 (30.8%) patients. Previous studies revealed that dysphasia is more common with advancing age. This is due to a reduction in muscle mass, loss of strength and other age-related factors [16,17,18]. The higher prevalence of the younger population in our study is likely due to young female patients presenting with dysphagia with associated symptoms of GERD and endoscopy showing findings suggestive of esophagitis.

In our study female: male ratio was 1.6: 1. The benign etiology was more common among females, but males showed a higher percentage of malignant causes than females. These findings were similar to that of prior studies by Puhakka et al., Malik et al. and Samarasam et al. [19,20,21].

About the etiology of dysphasia, our study showed a significantly high number of benign etiologies as compared to malignancy. Out of malignant etiologies, esophageal adenocarcinoma was the most common cause. This was in contrast to previous Indian studies. A study from south India by Cherian et al. in 2007 revealed that the incidence of esophageal squamous cell carcinoma was significantly high (92%) in the south Indian population as compared to esophageal adenocarcinoma (8%) [22]. Squamous cell carcinoma was the second most common malignant etiology in our study. Gastric fundal cancer was the least common malignant cause of dysphagia. Puhakka et al., in their research, revealed that malignant etiologies were commoner Than benign etiologies. Squamous cell carcinoma was the most common etiology of dysphagia, but reflux esophagitis was less common (5%) [19]. Another recent Indian study by Sahu et al. in 2017 also stated in their research that squamous cell cancer was the most common etiology (79% cases) [10]. These findings contrast with our study, which showed a higher prevalence of adenocarcinoma of the esophagus.

The commonest benign etiology of dysphasia in our study was reflux esophagitis, and it remained the most common overall etiology of dysphagia. For the patients with dysphagia with endoscopic findings of esophagitis, the clinical history was significant for regurgitation, indigestion and heartburn in addition to dysphagia. Reflux esophagitis was the most common etiology of dysphagia in most recent studies by Mitra et al. and Kidambi et al. [23,24]. As per the study by Mitra et al., the commonest overall etiology of dysphagia was reflux esophagitis (consisting of 25.5% of all cases) [23]. This finding was similar to our study. All patients with reflux esophagitis effectively responded to proton Pump Inhibitor (PPI) therapy after 2 to 4 weeks. The dysphagia was resolved entirely in these cases. Our study revealed Esophageal candidiasis is the second most common benign cause of dysphagia. Prior studies, including Mitra et al., did not show candidiasis as a common etiology like our study [23]. The overall high prevalence of candidiasis in our study was likely related to the underlying immunocompromised state. Out of 38 patients, 32 patients had an underline immunocompromised state (17 had diabetes mellitus, 6 were HIV positive, four patients were on immunosuppression for renal transplant, and five patients were getting steroids for other systemic disorders). Still, six patients did not have any immunocompromised state. All 38 patients were successfully treated with Fluconazole over two weeks.

Achalasia cardia was seen in 5.5% of cases, similar to previous studies By Sahu et al. and Mitra et al. [10,23]. Out of 12 patients, four patients improved with conservation management with Calcium Channel Blockers (CCBs), but the other eight patients were referred for myotomy. The oesophagal ulcer was seen in 11 cases. All ulcers were biopsied to rule out malignancy and then treated with PPI. All patients responded well to PPI and sucralfate. Post Cricoid web was seen in 6 cases, and all cases were females. All cases

Were treated successfully by endoscopic dilatation using Savary Gilliard (SG) dilators and long-term iron supplements. Corrosive structure and peptic stricture were among the less common etiologies and were successfully dilated using an SG dilator and PPI based on severity. Only two patients showed positive endoscopic and histopathological findings definitive of eosinophilic esophagitis. Both patients responded well to topical glucocorticoids.

Conclusion

Our study revealed that the upper GI endoscopy is an effective tool for diagnosing dysphagia. Benign etiologies were overall more common than malignant etiologies of dysphagia. Among malignant etiologies males exceeded females, and benign etiologies were more common in females. All benign etiologies responded well to oral or endoscopic therapies based on the cause. The incidence of malignancy as a cause of dysphagia increases with advanced age. From our study, we recommend that the upper GI endoscopy should be used as an initial diagnostic modality. Biopsy should be taken in all cases with suspected lesions.

What does the study add to existing knowledge?

This is the first study in the South Indian population to evaluate the etiology and endoscopic profile of dysphagia. This study revealed that benign etiologies are more common and easily treatable causes of dysphagia.

Author contribution: Dr Sachin K. Dhande – Study protocol preparation, Design, Data collection, Manuscript preparation. Dr Chandrasekar Murugesan -- Data collection, Manuscript preparation. Dr Anbalagan Pichaimuthu -- Data collection, Manuscript preparation.

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