

## RESEARCH ARTICLE

# A Study on Etiological Spectrum of Dysphagia in North India: An Experience from a Tertiary Care Hospital in Rural Area

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## ABSTRACT

**Introduction:** Dysphagia is a common symptom reported in Gastroenterology out patient departments (OPD's). It can have a significant impact on quality of life. It has a variety of causes which can be both benign and malignant. Previous studies from India have reported a predominance of benign causes in our subcontinent. This prospective study was carried out in a tertiary care centre situated in rural part of Northern India.

**Aim:** The study was aimed to study the etiological spectrum of patients presenting with symptom of dysphagia in the gastroenterology department.

**Material and Methods:** 97 patients were included in the study from June 2020 to April 2021. A comprehensive history was taken. Upper gastrointestinal (GI) endoscopy was done in all patients with barium swallow, computed tomography (CT) scan, and biopsies done as required.

**Results:** Mean age of the patients in the study was 52.6, with an age range of 4 to 86 years. 55.6% of patients in the study were males. Male:Female was 1.25:1. 62.9% of patients had a malignant etiology for dysphagia. This was in contrast to previous studies in which benign causes were more prevalent. Carcinoma esophagus was the most common malignant cause for dysphagia. Squamous cell carcinoma was the most common pathological type, seen in 82.4% of patients with esophageal cancer. Among the benign causes, peptic esophageal stricture was the most common cause seen in 9.2% of cases. Other causes included Corrosive esophageal stricture, Achalasia cardia, Esophageal candidiasis, Esophageal webs.

**Conclusion:** We concluded that malignancy was an important cause of dysphagia in our study. Thus, any patient presenting with dysphagia should be evaluated with a high degree of suspicion.

**Keywords:** Carcinoma esophagus, Dysphagia, Upper GI endoscopy.

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## INTRODUCTION

Dysphagia is defined as an abnormal delay in food bolus movement from the oropharynx to the stomach. Patients often report this as difficulty in swallowing<sup>1</sup>. It results from many causes, including neurologic, myopathic, metabolic, inflammatory/autoimmune, infectious, structural, iatrogenic, and psychiatric diseases. Patients with dysphagia suffer significant social and psychological burdens associated with their symptoms of difficulty with swallowing, including anxiety with meals or avoidance of eating with others.<sup>2</sup> Elderly patients with symptoms of dysphagia are at an increased risk of

complications. The prevalence of dysphagia is approximately 10% to 22% in Americans aged 50 and over.<sup>3</sup> The prevalence increases with advances in age, and it is approximately 40% in people aged over 60.<sup>4</sup> Patients with dysphagia are usually investigated by a diagnostic Upper GI endoscopy. Barium swallow and CT scan of the thorax play a part wherever required. Manometry is also sometimes required to diagnose motility disorders. In addition, a confirmation is required by biopsy for the diagnosis of eosinophilic esophagitis. In the previously reported studies from India, benign etiologies predominate. However, there is a paucity of data from various

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country regions in this field. Our study was conducted in a tertiary care centre situated in the rural part of Haryana (North India) to observe patients presenting with dysphagia's clinical and etiological spectrum.

**MATERIAL AND METHODS**

This prospective study was conducted in the Department of Gastroenterology, MM Institute of Medical Sciences and Research, Mullana, Ambala, Haryana, from June 2020 to April 2021. It included patients presenting with difficulty swallowing for solids, liquids, or both in out-patient and in-patient departments.

Any patient presenting with difficulty in swallowing was included in the study. Informed consent was taken from the patients in their vernacular language. Patients who refused to give informed consent were excluded from the study. Patients who had a previous history of receiving chemo or radiotherapy for Carcinoma esophagus were also excluded.

Detailed clinical history was taken. Upper GI endoscopy was done in all patients. Barium swallow, CT scan, and endoscopic biopsies were taken wherever necessary. Diagnosis of Achalasia cardia was made on endoscopic, barium, and ct evaluation since manometry was not available in our institute. Patients with normal endoscopy, normal biopsy, and who responded to anti-psychotic medications were labeled with Functional dysphagia.

**RESULTS**

97 patients were included in the study. The mean age of the patients in the study was 52.6 with an age range of 4 to 86 years.

Number of males in the study was 54 and number of females were 43 with a male:female of 1.25:1 (Figure 1). Maximum patients were in the age group of 40 to 60 years (Figure 2).

Malignant causes were more common in this study accounting for 62.9% (61 patients) of the patients while benign causes were present in 37.1% (36 patients).

Among the malignant causes, Carcinoma esophagus accounted for most cases (93.4%). Rest of the malignant causes included gastric cancer in 2 patients (3.2%), bronchogenic carcinoma infiltrating into the esophagus and laryngeal cancer in 1-patient (1.6%) each.

Involvement of the lower one-third of the esophagus was most common (38.5%) in patients with carcinoma esophagus, followed by the upper third (36.8%), then the middle third

(24.7%). Male: Female in patients having esophageal malignancy was 1.7:1. 85.9% of patients were smokers in the malignant group.

47 patients (82.5%) of the carcinoma esophagus had SCC(Squamous Cell Carcinoma) type while 10 patients (17.5%) had adenocarcinoma.

Among the benign causes, benign esophageal stricture was the most common cause. Etiologies for benign esophageal stricture included peptic esophageal stricture (most common-9.2%), Corrosive esophageal strictures (6.1%), and surgical site anastomotic stricture(1.03%). Other benign causes for dysphagia included achlasia cardia (7.2%), esophageal candidiasis (6.1%), Reflux esophagitis secondary to Gastrointestinal Reflux Disease (GERD) (2.06%), Functional dysphagia (2.06%), Hilar lymphadenopathy due to tuberculosis (2.06%), Esophageal web (1.06%) (Figure 3 to 5).

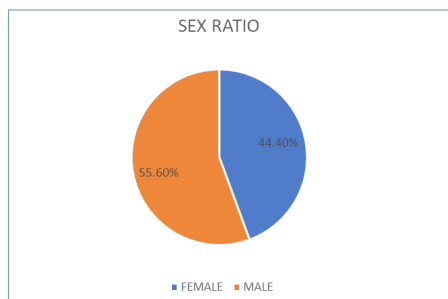
Benign causes were more common in females, and the female:male ratio was 1.25:1 (Figure 6).

**DISCUSSION**

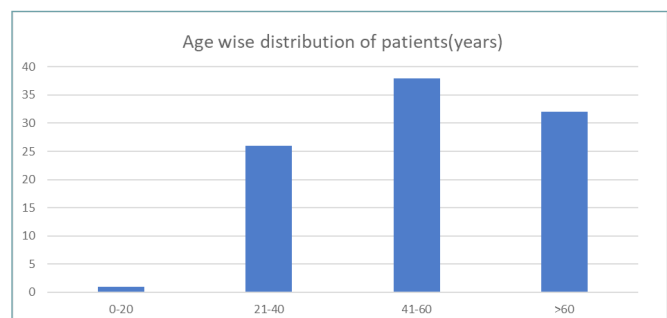
Dysphagia can be a troublesome symptom for patients. It can indicate a serious underlying disorder. Therefore, it should be evaluated thoroughly, with a high degree of suspicion, especially in older age group individuals. Upper GI endoscopy is the one of the first investigative tool most commonly used for its evaluation. Endoscopy also has the advantage of being used for therapeutic purposes e.g. stricture dilatation, SEMS(Self Expanding Metal Stent) placement etc.

In our study, a total of 97 patients were included. The mean age of the patients in our study was 52.6 years which is similar to another study by Kidambri et al. The mean age of patients in this study was 53.5.<sup>5</sup> Maximum patients in our study were in the age group of 40 to 60 years.

In the present study, dysphagia was more prevalent among males, with a male:female of 1.25:1. Similar to our finding, Mitra T *et al.* in their study showed that dysphagia was more prevalent in males with a male:female of 1.75:1 in their study.<sup>6</sup> This can be due to smoking and drinking habits in males. However, studies have shown female predominance in patients presenting with dysphagia in other parts of the world.<sup>5,7</sup> This can be due to GERD and Reflux esophagitis as the most common causes of dysphagia in these studies compared to malignancy as the most common cause is ours.



**Figure 1:** Percentage distribution of males and females in the study group



**Figure 2:** Age wise distribution of cases

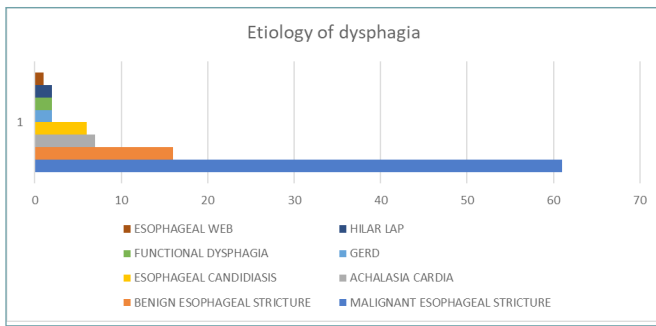


Figure 3: Etiology of dysphagia in the present study

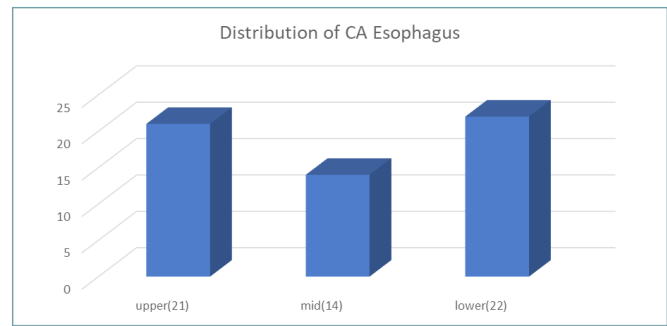


Figure 4: Distribution of malignancy along esophagus

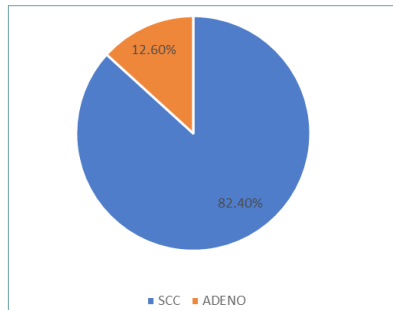


Figure 5: Pathological distribution of Carcinoma Esophagus

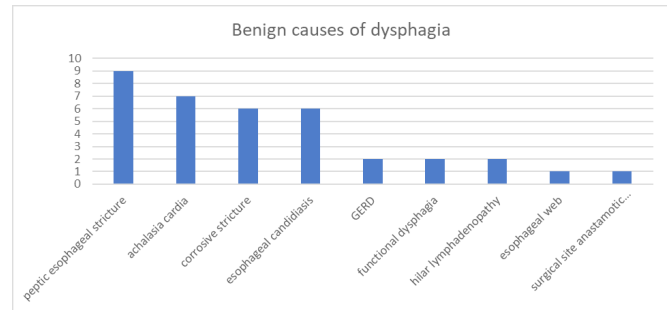


Figure 6: Benign causes of dysphagia in present study

In our study, the malignant causes (62.8%) were more common than benign (37.2%) etiologies. Carcinoma esophagus was the most common cause in 57 patients (58.7%). Other malignant causes were Gastric cancer in 2 patients and bronchogenic cancer and Carcinoma larynx in 1 patient each. Another study by Sarkar S *et al.* in Kolkata showed malignant cause in 55% of their studied population.<sup>8</sup> In another study from Jammu and Kashmir, 53.4% of patients had a benign etiology.<sup>9</sup> Mitra *et al.* in their study from Varanasi, also concluded that benign causes were more common (65%).<sup>6</sup> The increased prevalence of malignant causes in our region may be due to increased hukka smoking and tobacco chewing in this part of the country. However, only 85.9% of patients with carcinoma esophagus were smokers in the present study. So, further studies are required to look at other contributing factors to increase the prevalence of malignancy in this part of the country, apart from smoking.

As it is noted that prevalence of Adenocarcinoma esophagus is increasing in the western part of the world. This is most commonly attributed to the increasing incidence of GERD and obesity. However, in India Squamous cell carcinoma still predominates. The same is also seen in our study where 82.4% of Carcinoma Esophagus had SCC while 17.6% had Adenocarcinoma. Similar findings are also seen in other studies. Choksi *et al.* also reported that 80.25% of patients had SCC in their study.<sup>10</sup> The possible explanation for this may be that in our country, CA esophagus is seen more commonly in patients who are non obese, do not have a prior history of GERD, and are smokers.

The most common site of Carcinoma esophagus in our study was lower esophagus which was similar to the study by Mitra *et al.*<sup>6</sup> Also, the carcinoma esophagus was more

commonly seen in males than females with a ratio of 1.7:1. This might also be due to more males' smoking and tobacco chewing habits.

Among the benign causes, peptic esophageal stricture was the most common in our study accounting for 9.2% of cases. Other studies have found GERD as India's most common benign cause of dysphagia.<sup>6,9</sup> Also, the benign causes were more commonly seen in women than in men. Other benign causes for dysphagia were Corrosive esophageal strictures(6.1%), Achalasia cardia(7.2%), Esophageal candidiasis(6.1%). The diagnosis of Achalasia cardia in our institute was made on Endoscopy, barium swallow and CT scan findings as manometry was not present. This could have led to some error in diagnosing these patients. Also, the type of Achalasia could not be determined. However, secondary achalasia's causes were thoroughly ruled out before labelling a patient with achalasia cardia.

Only 2 patients (2.06%) had normal endoscopy and biopsy in our study. These patients responded to anti-psychotic medications and were labelled as functional dysphagia. In one study from Odisha, 29.17 % of patients had functional dysphagia compared to only a minute percentage in ours.<sup>11</sup> Both patients with functional dysphagia were females. This can be related to the increased prevalence of functional gastrointestinal disorders in females.<sup>12</sup>

## CONCLUSION

In our study, carcinoma esophagus was the most common cause of dysphagia. This was especially seen in patients with advancing age. Other etiologies included peptic esophageal stricture, achalasia cardia, corrosive esophageal stricture.

Rare causes included functional dysphagia, tubercular lymphadenopathy and esophageal webs. Dysphagia should always be dealt with high suspicion as malignancy is an important cause. There is a paucity of data from the Indian subcontinent regarding etiologies associated with dysphagia. Most studies are from the northern part of the country, and some of them also have conflicting results. Further research is needed to look for environmental factors that may lead to geographical variance in etiologies of dysphagia.

## REFERENCES

1. Abdel Jalil AA, Katzka DA, Castell DO. Approach to the patient with dysphagia. *Am J Med* 2015;128:1138 e1117-1123
2. Ekberg O, Hamdy S, Woisard V, Wuttge-Hannig A, Ortega P. Social and psychological burden of dysphagia: its impact on diagnosis and treatment. *Dysphagia* 2002;17(2):139-146.
3. Howden CW. Management of acid-related disorders in patients with dysphagia. *The American Journal of Medicine Supplements*. 2004;117(5):44-48.
4. Ney DM, Weiss JM, Kind AJ, Robbins J. Senescent swallowing: impact, strategies, and interventions. *Nutr Clin Pract*. 2009;24(3):395-413.
5. Kidambi T, Toto E, Ho N, Taft T, Hirano I. Temporal trends in the relative prevalence of dysphagia etiologies from 1999-2009. *World journal of gastroenterology: WJG*. 2012 Aug 28;18(32):4335-4341.
6. Mitra T, Dixit VK, Shukla SK, Yadav DP, Thakur P, Thakur RK. Clinical profile of patients presenting with dysphagia - an experience from a tertiary care center in North India. *JGH Open*. 2019;4(3):472-476.
7. Gouda MS, Al-lakani AI, Bedewy MM. Endoscopic findings in Egyptian patients with oesophageal dysphagia at different age groups. *Am J Internal Med*. 2015;3:224-30.
8. Sarkar S, Sikdar B, Kundu S. Dysphagia: Indian perspective an often overlooked clinical experience. *Bangladesh Journal of Otorhinolaryngology*. 2012;18(2):145-148.
9. Iqbal J, Mahmood S, Hussain Z. Spectrum of dysphagia etiologies in North India; a prospective study from a tertiary health center. *Ann Int Med Dent Res* 2018;4(3):5-7.
10. Choksi D, Kolhe KM, Ingle M, Rathi C, Khairnar H, Chauhan SG, Chaudhary V, Shukla A, Pandey V. Esophageal carcinoma: an epidemiological analysis and study of the time trends over the last 20 years from a single center in India. *Journal of Family Medicine and Primary Care*. 2020 Mar;9(3):1695-1699.
11. Panigrahi S, Khatua CR, Mishra D, Parida PK, Singh SP. A prospective study evaluating the etiologic spectrum in patients with dysphagia in coastal Odisha using clinical features and endoscopy. *Journal of Digestive Endoscopy*. 2019 Apr;10(02):107-111.
12. Narayanan SP, Anderson B, Bharucha AE. Sex-and Gender-Related Differences in Common Functional Gastroenterologic Disorders. In *Mayo Clinic Proceedings*. Elsevier. 2021;96(4):1071-1089.