

## Spectrum of Upper Gastrointestinal Endoscopic Findings in Patients with Dysphagia: A Study of 147 Cases

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### Abstract

**Introduction:** This retrospective descriptive cross-sectional study was done to see upper gastrointestinal endoscopic findings in patients presenting with dysphagia. **Materials and Methods:** Reports of patients undergoing upper gastrointestinal endoscopy were retrieved from endoscopy records. Data regarding age, gender, and endoscopic features and impressions were collected. The data analysis was done using IBM SPSS® v21 (IBM, Armonk, New York). Frequency, proportions, mean  $\pm$  SD, and range were calculated. **Results:** Out of 147 participants, the mean age of the participants was  $53.46 \pm 15.99$  years. There was an equal proportion of participants of each gender (50.3% female and 49.6% male). The prevalence of endoscopic abnormalities was 93.8%. Most of the participants had carcinoma esophagus (38.7%, 57) followed by gastritis (35.3%, 52), gastric polyp (10.8%, 16), and duodenitis (8.8%, 13). **Conclusion:** Dysphagia is an alarming symptom that warrants prompt evaluation. With diagnostic and therapeutic value, upper GI (gastrointestinal) endoscopy remains a rapid initial effective tool in the evaluation of patients with dysphagia.

**Key words:** Dysphagia, gastrointestinal endoscopy, malignancy.

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### Introduction:

Dysphagia, a Greek word, attributes to the subjective sensation of difficulty swallowing<sup>1,2</sup>. The prevalence of dysphagia varies with age. It affects 16-22% of the population above 50 years of age<sup>3</sup>. Studies show about one-fifth of the population visiting primary care complaints of dysphagia<sup>4</sup>. Moreover, dysphagia occurs in more than 40% of elderly admitted patients<sup>5</sup>. Upper gastrointestinal endoscopy (Esophagogastroduodenoscopy, EGD) is the most common and initial diagnostic procedure performed for the evaluation of patients with dysphagia owing to its advantage of direct visualization and tissue acquisition for biopsy<sup>1,6,7</sup>. The presence of dysphagia has been linked with anxiety, and depression resulting in

a significant negative impact on physical and mental functioning<sup>8,9</sup>.

There are limited data regarding the prevalence of different endoscopic abnormalities in South Asian countries. Due to limited data, the trending change in the etiology of dysphagia is not well known. This study was done to identify the spectrum of upper gastrointestinal endoscopic abnormalities in patients presenting with dysphagia.

### Material and Methods:

This retrospective descriptive cross-sectional study was done using the endoscopic findings database maintained in Popular Medical Center, Sylhet, Bangladesh from March 11, 2021 to September 30, 2021. All patients presenting with dysphagia undergoing upper GI endoscopy for the first time with complaints of dysphagia including both in and out patients were included in this study. Exclusion criteria included those with incomplete information in the database. Demographic information i.e., age, sex, and the endoscopic findings were recorded in a data sheet. Statistical Analysis: Statistical analysis was done using a statistical package for social sciences, IBM SPSS® v21 (IBM, Armonk, New York). Mean and SD was calculated for continuous data and percentage (proportion) were calculated for categorical data.

### Results:

A total of 147 patients were included in this study. The mean age of the participants was  $53.46 \pm 15.99$  with the maximum and minimum age being 90 and 18 years respectively. The majority of patients are from the age group 41-60 years accounting for 68(46.2%). There was an equal proportion of participants of each gender (50.34% female and 49.66% male (Table I).

Out of all the participants who underwent endoscopy, 138(93.87%) had abnormal endoscopic features. Overall the most common finding was esophageal carcinoma (38.78%, 57) followed by gastritis

(35.37%, 52), gastric polyp (10.88%, 16), and duodenitis (8.84%, 13) (Table II).

In the age group  $\leq 25$  years, 7(53.8%) patients had gastritis followed by duodenitis in 2(15.3%) of the patients. Among the age group 26-40 years, the most common endoscopy finding was gastritis 10(45.4%) followed by esophageal cancer in 5(22.7%) patients. In the age group 41-60 years, 32(47%) patients had esophageal cancer and 19(27.9%) patients had gastritis findings. In the elderly age group  $\geq 61$  years, esophageal cancer was seen in 20(45.4%) and gastritis was seen in 16(36.3%) of the patients (Table III).

**Table-I: Demographic characteristics of participants (N=147)**

	Count	Proportions
<b>Sex</b>		
Female	74	50.3%
Male	73	49.7%
<b>Age Group</b>		
$\leq 25$ years	13	8.8%
26-40 years	22	15.0%
41-60 years	68	46.3%
$\geq 61$ years	44	29.9%
Mean=	53.46	
SD=	15.99	

**Table-II: Endoscopic diagnosis in patients presenting with Dysphagia**

SN	Characteristics	Frequency	Proportions
<b>1.</b>	<b>Endoscopic features</b>		
	Normal	9	6.12
	Abnormal	138	93.87
<b>2.</b>	<b>Endoscopic diagnosis</b>		
	<b>Larynx</b>		
	Vocal cord palsy	3	2.04
	Laryngeal neoplasm	7	4.76
	Reinke edema	1	0.68
	<b>Total</b>	<b>11</b>	<b>7.48</b>
	<b>Esophagus</b>		
	Esophageal candidiasis	6	4.08
	Esophagitis	8	5.44
	Esophageal inlet patch	1	0.68
	Esophageal webs	1	0.68
	Esophageal rings	2	1.36
	Carcinoma esophagus	57	38.78
	Hiatal hernia	4	2.72
	Esophageal stricture	2	1.36
	Barrett's esophagus	1	0.68
	Extrinsic compression	2	1.36
	<b>Total</b>	<b>84</b>	<b>57.14</b>
	<b>Stomach</b>		
	Gastric polyp	16	10.88
	Gastritis	52	35.37
	Carcinoma gastric	4	2.72
	Gastric outlet obstruction	1	0.68
	<b>Total</b>	<b>73</b>	<b>49.65</b>

SN	Characteristics	Frequency	Proportions
	<b>Duodenum</b>		
	Duodenitis	13	8.84
	Duodenal polyp	1	0.68
	<b>Total</b>	<b>14</b>	<b>9.52</b>

**Table-III: Endoscopic findings according to age and gender.**

Diagnosis	Age Group				Sex		Total
	$\leq 25$	26-40	41-60	$\geq 60$	Female	Male	
Normal	1 (7.6)	2 (9)	4 (5.8)	2 (4.5)	7 (9.4)	2 (2.7)	9
Esophageal cancer	0	5 (22.7)	32 (47)	20 (45.4)	18 (24.3)	39 (53.4)	57
Gastritis	7 (53.8)	10 (45.4)	19 (27.9)	16 (36.3)	31 (41.8)	21 (28.7)	52
Gastric polyp	1 (7.6)	2 (9)	6 (8.8)	7 (15.9)	10 (13.5)	6 (8.2)	16
Duodenitis	2 (15.3)	2 (9)	6 (8.8)	3 (6.8)	7 (9.4)	6 (8.2)	13
Laryngeal neoplasm	1 (7.6)	0	1 (1.4)	5 (11.3)	4 (5.4)	3 (4.1)	7
Candidiasis	0	1 (4.5)	4 (5.8)	1 (2.2)	5 (6.7)	1 (1.3)	6
Oesophagitis	1 (7.6)	2 (9)	4 (5.8)	1 (2.2)	8 (10.8)	0	8
Hiatus hernia	0	0	1 (1.4)	3 (6.8)	3 (4.05)	1 (1.3)	4
Gastric ulcer	0	2 (9)	1 (1.4)	1 (2.2)	1 (1.3)	3 (4.1)	4
Stomach cancer	0	1 (4.5)	1 (1.4)	2 (4.5)	0	4 (4.1)	4
Vocal cord palsy	0	0	1 (1.4)	2 (4.5)	1 (1.3)	2 (2.7)	3
External compression	0	0	2 (2.9)	0	1 (1.3)	1 (1.3)	2
Esophageal stricture	1 (7.6)	0	0	1 (2.2)	1 (1.3)	1 (1.3)	2
Esophageal ring	0	0	0	2 (4.5)	2 (2.7)	0	2
Barrett's esophagus	1 (7.6)	0	0	0	0	1 (1.3)	1
Esophageal inlet patch	1 (7.6)	0	0	0	0	1 (1.3)	1
Esophageal web	0	0	0	1 (2.2)	1 (1.3)	0	1
Reinke edema	0	0	0	1 (2.2)	0	1 (1.3)	1
Compression	0	0	1 (1.4)	0	1 (1.3)	0	1
Duodenal polyp	0	0	0	1 (2.2)	1 (1.3)	0	1
Gastric outlet obstruction	1 (7.6)	0	0	0	1 (1.3)	0	1

### Discussion:

Dysphagia is an alarming symptom that warrants prompt evaluation and appropriate treatment. Older age, weight loss, and evidence of gastrointestinal bleed should raise suspicion about the malignant causes of dysphagia<sup>10</sup>. One in six adults experiences difficulty swallowing<sup>11</sup>. Upper Gastrointestinal endoscopy is done to evaluate as well as for the management of dysphagia<sup>12</sup>.

Our study showed esophageal carcinoma followed by gastritis were the two most common findings in patients with dysphagia. Studies in Pakistan and Africa also showed carcinoma of the esophagus as the most common finding<sup>13,14</sup>. However, USA based study showed benign stricture followed by GERD were the most common findings<sup>15</sup>.

The normal endoscopic finding was very low in our study found only in 9(6.1%) patients. Indian, Pakistan, and USA based studies showed normal findings of 39.8%, 20.9%, and 29% respectively, which is much higher than our study<sup>16-18</sup>.

In our study, esophageal cancer was noted in 57(38.78%) patients making it the most common finding overall. All the patients diagnosed were from age group 26 and above. It was most commonly seen in the age group 41-60 accounting for 56.1%. Khan et. al. also reported malignant esophageal stricture in 27.3% of patients predominantly of the age group more than 40 years, which was slightly lower than our study<sup>17</sup>. Esophageal carcinoma is predominantly seen in male patients (68.42%) in our study which is consistent with other studies<sup>17</sup>. Esophageal cancer is most commonly diagnosed at late stages (stage 3)<sup>19</sup>. Thus early diagnostic measures should be taken in patients with dysphagia in the middle and older age group.

Gastritis was the second most common finding in our study seen in 52(35.3%) of the patients. Yahya et. al. reported gastritis in 22.8% of patients which is lower than our study<sup>20</sup>. This may be due to differences in population, food habits, and environment. Gastritis was more common in females than in males predominantly in the age group 41 years and above.

The gastric polyp was the third most common finding seen in 16(10.8%) patients. This finding was not reported in previous studies. Gastric polyp is usually an asymptomatic incidental finding. Due to the possibility of malignancy appropriate diagnosis and treatment are necessary.

Duodenitis was seen in 16(10.8%) of the patients predominantly in the age group more than 40 years. The study by Yahya et. al. only showed this finding in 2.6% of patients<sup>20</sup>.

The author's primary interest was to look for the endoscopic findings the physician may find while doing endoscopy in patients presenting with dysphagia. In our study, esophageal cancer was the most common finding. To look for the emerging trend of causes of dysphagia a study multicentric study with a large sample size needs to be done.

#### Conclusion:

Dysphagia should be taken as an alarming symptom in age 40 and above and warrants prompt evaluation and treatment. With diagnostic and therapeutic value, upper GI (gastrointestinal) endoscopy remains a rapid initial effective tool in the evaluation of patients with dysphagia

**Conflict of Interest:** None.

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#### References

1. Krishnamurthy C, Hilden K, Peterson KA, Mattek N, Adler DG, Fang JC. Endoscopic Findings in Patients Presenting with Dysphagia: Analysis of a National Endoscopy Database. *Dysphagia*. 2012 Mar;27(1):101–5.
2. Qureshi NA, Hallissey MT, Fielding JW. Outcome of index upper gastrointestinal endoscopy in patients presenting with dysphagia in a tertiary care hospital-A 10 years review. *BMC Gastroenterol*. 2007 Nov 22;7(1):43. DOI: 10.1186/1471-230X-7-43
3. Rashid H, Bakht K, Arslan A. (October 30, 2020) Endoscopic Findings and Their Association With Gender, Age and Duration of Symptoms in Patients With Dysphagia. *Cureus* 12(10): e11264. DOI:10.7759/cureus.11264
4. Wilkins T, Gillies RA, Thomas AM, Wagner PJ. The Prevalence of Dysphagia in Primary Care Patients: A HamesNet Research Network Study. *The Journal of the American Board of Family Medicine*. 2007 Mar 1;20(2):144–50. DOI:10.3122/jabfm.2007.02.060045
5. Humbert IA, Robbins J. Dysphagia in the Elderly. *Physical Medicine and Rehabilitation Clinics of North America*.

2008 Nov;19(4):853–66.

DOI:10.1016/j.pmr.2008.06.002

6. Ahlawat R, Hoilat GJ, Ross AB. Esophagogastroduodenoscopy. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 [cited 2022 May 11]. Available from: <http://www.ncbi.nlm.nih.gov/books/NBK532268/>

7. Lieberman DA, De Garmo PL, Fleischer DE, Eisen GM, Helfand M. Patterns of endoscopy use in the United States. *Gastroenterology*. 2000 Mar;118(3):619–24.

PMID: 10702214.

8. Eslick GD, Talley NJ. Dysphagia: epidemiology, risk factors and impact on quality of life - a population-based study: DYSPHAGIA - A POPULATION-BASED STUDY. *Alimentary Pharmacology & Therapeutics*. 2008 Feb 27;27(10):971–9.

DOI:10.1111/j.1365-2036.2008.03664.x

9. 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 Apr 1;17(2):139–46.

DOI:10.1007/s00455-001-0113-5

10. Malagelada JR, Bazzoli F, Boeckxstaens G, De Looze D, Fried M, Kahrilas P, et al. World Gastroenterology Organisation Global Guidelines: Dysphagia—Global Guidelines and Cascades Update September 2014. *Journal of Clinical Gastroenterology*. 2015 May;49(5):370–8.

DOI: 10.1097/MCG.0000000000000307

11. Adkins C, Takakura W, Spiegel BMR, Lu M, Vera-Llonch M, Williams J, et al. Prevalence and Characteristics of Dysphagia Based on a Population-Based Survey. *Clinical Gastroenterology and Hepatology*. 2020 Aug;18(9):1970-1979.e2.

DOI: 10.1016/j.cgh.2019.10.029

12. Pasha SF, Acosta RD, Chandrasekhara V, Chathadi KV, Decker GA, Early DS, et al. The role of endoscopy in the evaluation and management of dysphagia. *Gastrointestinal Endoscopy*. 2014 Feb;79(2):191–201.

DOI: 10.1016/j.gie.2013.07.042

13. Hafeez M, Salamat A, Saeed F, Zafar H, Hassan F, Farooq A. Endoscopic findings and treatment outcome in cases presenting with dysphagia. *J Ayub Med Coll Abbottabad*. 2011 Dec;23(4):46–8.

PMID: 23472411

14. Mudawi HMY, Mahmoud AOA, El Tahir MA, Suliman SH, Ibrahim SZ. Use of endoscopy in diagnosis and management of patients with dysphagia in an African setting. *Dis Esophagus*. 2010 Apr;23(3):196–200.

PMID: 19903193

15. Bill J, Rajagopal S, Kushnir V, Gyawali CP. Diagnostic yield in the evaluation of dysphagia: experience at a single tertiary care center. *Dis Esophagus*. 2018 Jun 1;31(6).

PMID: 29800269

16. T. Z, D. V, B. N. H. Upper gastrointestinal endoscopy in

patients with dysphagia: our experience. *Int Surg J.* 2019 Oct 24;6(11):3960.

DOI: <http://dx.doi.org/10.18203/2349-2902.isj20195104>

17. Khan AN, Said K, Ahmad M, Ali K, Hidayat R, Latif H. Endoscopic findings in patients presenting with oesophageal dysphagia. *J Ayub Med Coll Abbottabad.* 2014 Jun;26(2):216–20. PMID: 25603681

18. Varadarajulu S, Eloubeidi MA, Patel RS, Mulcahy HE, Barkun A, Jowell P, et al. The yield and the predictors of esophageal pathology when upper endoscopy is used for the initial evaluation of dysphagia. *Gastrointest Endosc.* 2005 Jun;61(7):804–8.

PMID: 15933679, DOI:10.1016/s0016-5107(05)00297-x

19. Navaneethan U, Eubanks S. Approach to Patients with Esophageal Dysphagia. *Surgical Clinics of North America.* 2015 Jun;95(3):483–9.

DOI: 10.1016/j.suc.2015.02.004

20. Yahya M, Faruqi S, Memon A. Endoscopic findings in patients presenting with dysphagia: An observational study. *Int J Surg Med.* 2020;(0):1.

DOI:10.5455/ijsm.Endoscopic-findings-patients-presenting-dysphagia