Section: General Surgery

Original Research Article

CLINICAL STUDY OF UPPER GASTROINTESTINAL ENDOSCOPY IN PATIENTS PRESENTING WITH DYSPHAGIA IN A TERTIARY CARE HOSPITAL

Dheeraj Reddy[1], Abhiram A[2], Channanna C[3]

[1]Post Graduate III (JR III), Department of General Surgery, PES Institute of Medical Sciences and Research, Kuppam, Andhra Pradesh, India
[2]Associate Professor, Department of General Surgery, PES Institute of Medical Sciences and Research, Kuppam, Andhra Pradesh, India
[3]Professor and HOD, Department of General Surgery, PES Institute of Medical Sciences and Research, Kuppam, Andhra Pradesh, India

Received : 29/05/2026
Received in revised form : 17/07/2026
Accepted : 31/07/2026

Keywords:
Dysphagia; upper gastrointestinal endoscopy; esophageal malignancy; squamous cell carcinoma; diagnostic yield.

Corresponding Author:
Dr. Dheeraj Reddy,
Email: dheerureddy4@gmail.com

DOI: 10.47009/jamp.2026.8.4.181

Source of Support: Nil,
Conflict of Interest: None declared

Int J Acad Med Pharm
2026; 8 (4); 1078-1083

ABSTRACT

Background: Dysphagia is a common clinical symptom reflecting a wide spectrum of benign and malignant esophageal disorders, and upper gastrointestinal endoscopy (UGIE) is the investigation of choice for its evaluation, but data on its diagnostic yield in dysphagia-focused evaluations in tertiary care settings remain limited. The objective is to characterize the nature and frequency of upper GI endoscopic findings in patients presenting with dysphagia and to correlate clinical symptoms with endoscopic diagnoses. **Materials and Methods:** Prospective observational study of 37 adult patients presenting with dysphagia who underwent UGIE at PESIMSR, Kuppam, over 18 months, using consecutive sampling. Clinical, demographic, and endoscopic data were recorded, and associations between symptoms/risk factors and abnormal endoscopic findings were analysed using the chi-square test. **Result:** Dysphagia predominated in patients above 60 years (37.8%), with a male preponderance (56.8%). Dysphagia to solids alone was the most common presentation (48.6%). Benign pathology was found in 54.2% of patients and malignant pathology in 24.2%, most commonly squamous cell carcinoma (62.5% of malignancies). Increasing age (p=0.002), longer symptom duration (p=0.028), smoking (p=0.005), and alcohol intake (p=0.017) were significantly associated with abnormal endoscopic findings, whereas gender, GERD symptoms, and individual dysphagia-related symptoms were not. **Conclusion:** UGIE is an essential diagnostic tool in patients presenting with dysphagia, particularly in older individuals with prolonged symptoms and risk factors such as smoking and alcohol use, and enables timely distinction between benign and malignant pathology to guide appropriate management.

INTRODUCTION

Dysphagia, defined as difficulty in swallowing, is a significant clinical symptom that prompts a large number of patients to seek medical evaluation. Swallowing is a highly coordinated neuromuscular process, and disruption at any step — oral, pharyngeal, or esophageal — can result in dysphagia.[1] While the symptom itself is universal across age groups, its clinical interpretation is crucial because it may represent a wide spectrum of underlying conditions, ranging from mild inflammatory disorders to life-threatening malignancies. Hence, timely evaluation and appropriate diagnostic tools are essential in the management of dysphagia.

The burden of dysphagia in the general population is notable, with studies estimating a prevalence between 15% and 33%. The incidence is higher among geriatric populations, individuals with neurological diseases, and those with chronic medical illnesses.[2] The symptom not only interferes with nutrition and quality of life but is also a major contributor to morbidity due to complications such as aspiration, dehydration, and unintended weight loss. These consequences make dysphagia an important public health concern as well as a major diagnostic challenge in clinical practice.

The etiology of dysphagia is diverse and often complex. Benign pathologies such as gastroesophageal reflux disease (GERD), peptic strictures, and eosinophilic esophagitis are commonly encountered in routine practice. Functional and motility disorders like achalasia cardia also contribute significantly to dysphagia. However, progressive and persistent dysphagia can

ISSN (O): 2687-5365; ISSN (P): 2753-6556

also point to serious conditions, particularly esophageal carcinoma. Early distinction between benign and malignant causes is essential, as diagnostic delay in malignancy can drastically affect survival outcomes.[3]

Upper gastrointestinal endoscopy (UGIE) has emerged as the investigation of choice in the evaluation of dysphagia due to its direct visualization capability, diagnostic precision, and therapeutic potential. This minimally invasive procedure enables examination of the esophagus, stomach, and proximal duodenum, allowing clinicians to identify structural abnormalities, mucosal lesions, motility-related clues, and intraluminal growths. Additionally, endoscopy allows for biopsy sampling, which plays a pivotal role in histological diagnosis, especially in suspected malignancies.[4,5]

In the setting of a tertiary care hospital, the diagnostic approach to dysphagia assumes greater importance. Patients presenting to such facilities are more likely to have advanced, atypical, or refractory disease, and many reach tertiary centers following failed treatments or incomplete evaluations from primary or secondary healthcare units. Therefore, endoscopic findings in these patients may reveal a broader and more severe spectrum of gastrointestinal pathology compared to the general outpatient population. Despite the widespread use of UGIE, gaps remain in the literature regarding its diagnostic yield specifically in dysphagia-focused evaluations in tertiary care settings; a systematic clinical study assessing UGIE findings in such patients can provide crucial insight into the prevalence and distribution of various etiologies, the proportion of benign versus malignant lesions, and symptom-endoscopy correlations, thereby improving diagnostic predictability and early recognition of life-threatening disease.

Aims and Objectives

1. To characterize upper GI findings by analysing the nature and frequency of various upper GI abnormalities detected during endoscopy, and to identify benign and malignant lesions contributing to dysphagia.
2. To correlate dysphagia symptoms with endoscopic findings.

MATERIALS AND METHODS

Study design and setting: Prospective observational study conducted in the Department of General Surgery at PES Institute of Medical Sciences and Research (PESIMSR), Kuppam, Andhra Pradesh, over 18 months.

Study population and sampling: Adult patients aged 18 years and above referred for upper GI endoscopy with dysphagia as the primary indication were enrolled by consecutive sampling until the desired sample size was achieved. Inclusion criteria were individuals aged ≥18 years undergoing UGIE with dysphagia as the primary indication, willing and able to provide informed written consent. Exclusion criteria were co-existing lower gastrointestinal symptoms or disease that could interfere with diagnostic evaluation, inability or unwillingness to undergo endoscopy, and incomplete clinical details or inadequate visualization during endoscopy.

Data collection: After informed consent, detailed clinical information was recorded on a structured proforma, including demographic details, history of duration and progression of dysphagia, associated symptoms (regurgitation, odynophagia, weight loss, heartburn, vomiting), addictions and comorbidities, physical examination findings, and endoscopic findings (site and nature of lesions, mucosal appearance, strictures, rings, webs, masses, ulcerations, obstructions, bezoars). Therapeutic procedures performed (dilatation, foreign body removal, stenting) were recorded, and biopsies were taken from suspicious lesions with histopathological correlation documented where indicated.

Endoscopic procedure: All endoscopic examinations were performed using a standard flexible video upper GI endoscope under local pharyngeal anaesthesia, with or without sedation depending on patient tolerance. The oesophagus, stomach, and proximal duodenum were visualized systematically, with findings documented per standard nomenclature and photographic evidence collected for case documentation.

Outcome measures: The primary outcome was the diagnostic yield of UGIE in patients with dysphagia. Secondary outcomes were the frequency of benign versus malignant lesions, correlation between type of dysphagia and endoscopic diagnosis, and histopathological confirmation of endoscopic suspicions.

Statistical analysis: Data were compiled in Microsoft Excel and analysed using SPSS. Continuous variables such as age were expressed as mean ± standard deviation, and categorical variables such as endoscopic findings as frequencies and percentages. Association between dysphagia symptoms and endoscopic diagnosis was analysed using the chi-square test, with $p<0.05$ considered statistically significant.

RESULTS

Thirty-seven patients presenting with dysphagia were included. The highest proportion belonged to the age group above 60 years (14, 37.8%), followed by 51–60 years (11, 29.8%), with 31–40 and 41–50 years each comprising 6 patients (16.2%). Males constituted the majority (21, 56.8%) compared with females (16, 43.2%). Dysphagia to solids alone was the most common presentation (18, 48.6%), followed by both solids and liquids (14, 37.9%) and liquids alone (5, 13.5%). Most patients presented with symptoms of 1–6 months' duration (17, 45.9%), followed by >6 months (12, 32.5%) and <1 month (8, 21.6%). Progressive dysphagia was reported by 19

ISSN (O): 2687-5365; ISSN (P): 2753-6556

patients (51.4%) and intermittent dysphagia by 18 (48.6%).

Table 1: Baseline demographic and clinical characteristics (n=37)

Parameter	Category	n	%
Age group (years)	31–40	6	16.2
Age group (years)	41–50	6	16.2
Age group (years)	51–60	11	29.8
Age group (years)	>60	14	37.8
Gender	Male	21	56.8
Gender	Female	16	43.2
Type of dysphagia	Solids only	18	48.6
Type of dysphagia	Liquids only	5	13.5
Type of dysphagia	Both solids & liquids	14	37.9
Duration of dysphagia	<1 month	8	21.6
Duration of dysphagia	1–6 months	17	45.9
Duration of dysphagia	>6 months	12	32.5
Nature of dysphagia	Progressive	19	51.4
Nature of dysphagia	Intermittent	18	48.6

On endoscopy, oesophagitis/ulceration and suspected malignancy were the most frequent primary findings (10 patients each, 27.1%), followed by oesophageal stricture (6, 16.2%), Schatzki ring (4, 10.8%), and normal study (7, 18.8%). By nature of lesion, benign pathology was seen in 20 patients (54.2%), malignant pathology in 9 (24.2%), and normal findings in 8 (21.6%). Final aetiological diagnosis (incorporating histopathological confirmation of malignant cases) identified oesophagitis/ulceration as the leading cause (10, 27.1%), followed by normal study (9, 24.2%), oesophageal stricture (6, 16.2%), squamous cell carcinoma (5, 13.5%), Schatzki ring (4, 10.8%), and adenocarcinoma (3, 8.1%).

Table 2: Endoscopic findings and final aetiology (n=37)

Finding / Aetiology	n	%
Normal study	9	24.2
Esophagitis / ulcer	10	27.1
Esophageal stricture	6	16.2
Schatzki ring	4	10.8
Squamous cell carcinoma	5	13.5
Adenocarcinoma	3	8.1

Among the 8 patients with histopathologically confirmed malignancy, squamous cell carcinoma was more common (5, 62.5%) than adenocarcinoma (3, 37.5%). Regarding management, medical therapy alone was sufficient in 16 patients (43.3%), endoscopic dilatation was performed in 6 (16.2%), stenting in 4 (10.8%), and oncology referral was required in 8 (21.7%), corresponding to those with malignant lesions.

Table 3: Histopathological diagnosis of malignancy and endoscopic intervention

Category	Parameter	n	%
Histopathology (of 8 malignant cases)	Squamous cell carcinoma	5	62.5
Histopathology (of 8 malignant cases)	Adenocarcinoma	3	37.5
Intervention (of 37 patients)	Medical management only	16	43.3
Intervention (of 37 patients)	Endoscopic dilatation	6	16.2
Intervention (of 37 patients)	Stenting	4	10.8
Intervention (of 37 patients)	Oncology referral	8	21.7

Increasing age was significantly associated with abnormal endoscopic findings (χ^2=43.95, p=0.002), as were longer duration of symptoms (χ^2=32.47, p=0.028), smoking (p=0.005), and alcohol intake (p=0.017). Gender, GERD symptoms, and individual dysphagia-related symptoms (progressive or intermittent pattern, weight loss, odynophagia, regurgitation, heartburn, vomiting, aspiration) did not show statistically significant associations with abnormal findings.

Table 4: Correlation of demographic, risk factor, and symptom variables with abnormal endoscopic findings

Variable	Abnormal, n	Normal, n	p value
Age (31–40 / 41–50 / 51–60 / >60 yrs)	5 / 3 / 10 / 11	1 / 3 / 1 / 3	0.002*
Gender (Male / Female)	17 / 12	4 / 4	0.66
Duration (<1mo / 1–6mo / >6mo)	5 / 13 / 11	3 / 4 / 1	0.028*
Smoking	11/14	3/14	0.005*
Alcohol intake	15/17	2/17	0.017*
GERD symptoms	15/20	5/20	0.58
Progressive dysphagia	15/19	4/19	0.93

ISSN (O): 2687-5365; ISSN (P): 2753-6556

Intermittent dysphagia	14/18	4/18	0.93
Weight loss	7/7	0/7	0.49
Odynophagia	7/11	4/11	0.15
Regurgitation	16/18	2/18	0.13
Heartburn	19/25	6/25	0.611
Vomiting	6/8	2/8	0.79
Aspiration/choking	1/1	0/1	0.316

DISCUSSION

In the present study of 37 patients presenting with dysphagia, the highest proportion belonged to the age group above 60 years (37.8%), followed by 51–60 years (29.8%), consistent with Wilkins and Gillies,[6] who reported that dysphagia incidence rises significantly after the fifth decade owing to increasing prevalence of malignancy, strictures, and motility disorders. Cook and Kahrilas,[7] and Kidambi et al,[8] similarly demonstrated that structural and malignant causes of dysphagia are more frequently encountered in elderly patients undergoing endoscopy, though some Asian studies focused on reflux-related dysphagia have reported a younger age predominance, suggesting regional variation in disease patterns. Males predominated in the present cohort (56.8%), consistent with Enzinger and Mayer,[9] who attributed higher male prevalence of dysphagia and esophageal malignancy to greater exposure to smoking and alcohol, and with Lagergren et al,[10] and Spechler and Souza,[11] who reported similar male preponderance in neoplastic and peptic aetiologies; the absence of a significant gender association with abnormal findings in this study supports evaluating dysphagia irrespective of gender. Dysphagia to solids alone was the most common presentation (48.6%), in agreement with Castell and Donner,[12] who emphasised that solid-food dysphagia suggests structural pathology, and with Richter,[13] who similarly reported solids-only dysphagia as the predominant presentation in strictures, rings, and malignancy; dysphagia to liquids alone, seen in 13.5% of patients, has been linked to motility disorders by Pandolfino and Gawron.[14] Most patients presented with symptoms of 1–6 months' duration (45.9%), consistent with the delayed presentation pattern described by Lagergren et al,[10] and the statistically significant association between longer symptom duration and abnormal endoscopic findings observed here parallels the higher diagnostic yield of UGIE in chronic dysphagia reported by Vakil et al.[15] Progressive dysphagia, reported by 51.4% of patients, is traditionally considered a red flag for malignancy or stricture, consistent with Dawsey et al,[16] who noted progressive worsening in carcinoma and advanced peptic strictures, while intermittent dysphagia (48.6%) has commonly been associated with Schatzki rings and functional disorders; although progressive dysphagia showed a higher proportion of abnormal findings in this study, statistical significance was not reached, likely reflecting the limited sample size.

Heartburn was the most common associated symptom (67.6%), followed by regurgitation (48.6%) and odynophagia (29.7%), consistent with Spechler and Souza,[11] and El-Serag et al,[17] who identified heartburn and regurgitation as common accompaniments of reflux-related dysphagia; weight loss, present in 18.9% of patients, has been strongly linked to malignancy by Lagergren et al,[10] and all patients with weight loss in the present study had abnormal endoscopic findings, underscoring its clinical significance despite the lack of statistical power. Odynophagia has been associated with ulcerative and infectious oesophagitis by Wilcox et al,[18] consistent with the present findings. Smoking and alcohol intake showed statistically significant associations with abnormal endoscopic findings, consistent with the landmark work of Enzinger and Mayer,[9] and Brown et al,[19] who established tobacco and alcohol as major risk factors for oesophageal carcinoma, and with the large epidemiological analysis by Islami et al,[20] GERD symptoms, although present in 54.05% of patients, did not show a significant association with abnormal findings, a finding also reported by Vakil et al,[15] suggesting that symptom severity does not always correlate with endoscopic abnormality.

The majority of patients (75.7%) underwent UGIE for the first time, reflecting delayed referral patterns commonly described in developing countries by Bhatia et al,[21] and Gado et al,[22] who similarly noted that dysphagia often prompts first-time endoscopy. Lower oesophageal involvement was the most common site (32.4%), paralleling findings by Spechler and Souza,[11] that the distal oesophagus is the predominant site for reflux-related pathology and adenocarcinoma, while mid-oesophageal lesions (24.3%) have commonly been associated with squamous cell carcinoma, as described by Pennathur et al.[23] Oesophagitis/ulceration and suspected malignancy were the most frequent primary endoscopic findings (27.1% each), consistent with Kidambi et al,[8] and the proportion of normal endoscopic findings (18.8%) aligns with the role of functional and motility disorders described by Richter.[13]

Benign pathology constituted the majority of lesions (54.2%), while malignant lesions accounted for 24.2%, comparable to proportions reported by Dawsey et al,[16] and Enzinger and Mayer,[9] who similarly emphasised that although malignancy is a critical concern, benign causes remain more common overall. Structural lesions were the most common endoscopic impression (32.4%), followed by inflammatory and neoplastic lesions, consistent with Gerson and Triadafilopoulos24 and Castell and

ISSN (O): 2687-5365; ISSN (P): 2753-6556

Donner,[12] who noted that mechanical obstruction accounts for a large proportion of dysphagia cases. Among malignancies, squamous cell carcinoma was more common than adenocarcinoma, mirroring the pattern reported in Indian and Asian populations by Dawsey et al,[16] where tobacco and alcohol-related squamous cell carcinoma predominates, in contrast to the higher adenocarcinoma rates reported in Western cohorts by Lagergren et al,[10] highlighting geographic variation in oesophageal malignancy subtype.

Medical management alone was sufficient in most patients, while endoscopic dilatation and stenting were required in selected cases, consistent with therapeutic patterns described by Kochman et al,[25] and oncology referral rates mirrored the observed prevalence of malignancy. On correlation analysis, increasing age, longer symptom duration, smoking, and alcohol intake showed statistically significant associations with abnormal endoscopic findings, consistent with the associations reported by Lagergren et al. and Islami et al,[10,20] gender and most individual symptom variables did not show significant associations, aligning with observations by Vakil et al. and Richter,[13,15] suggesting that reliance on symptoms alone may miss clinically significant pathology and reinforcing the role of endoscopy as the primary diagnostic tool in dysphagia evaluation.

Limitations

- The study had a relatively small sample size, which may limit the generalizability of the findings to the wider population.
- Being a single-centre study, the results may reflect local referral patterns and regional disease prevalence rather than national trends.
- Esophageal motility disorders could not be adequately assessed, as esophageal manometry was not routinely performed in patients with normal endoscopic findings.

CONCLUSION

The present study highlights that dysphagia is more commonly encountered in older individuals, with a clear predominance beyond the fifth decade of life, and shows a slight male preponderance. Solid food dysphagia was the most frequent presenting complaint, reflecting the high burden of structural and inflammatory esophageal lesions. Upper gastrointestinal endoscopy proved to be an essential diagnostic tool, with the majority of patients demonstrating abnormal findings, predominantly involving the lower esophagus. Benign pathologies such as esophagitis and strictures were more common, although a significant proportion of patients had malignant lesions, emphasising the need for early evaluation. Advancing age, longer duration of symptoms, smoking, and alcohol intake were significantly associated with abnormal endoscopic findings. Most patients could be managed medically or with endoscopic intervention, while timely oncology referral was crucial in malignant cases. Larger multicentric studies incorporating oesophageal manometry and pH monitoring, along with long-term follow-up, are recommended to validate these findings and better characterise functional causes of dysphagia.

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ISSN (O): 2687-5365; ISSN (P): 2753-6556

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ISSN (O): 2687-5365; ISSN (P): 2753-6556