

Spectrum of Upper Gastrointestinal Endoscopy Findings in Dyspepsia

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Abstract:

Background: Dyspepsia is a common gastrointestinal symptom complex characterized by upper abdominal discomfort, pain, bloating, early satiety, and nausea. Upper gastrointestinal (GI) endoscopy plays a crucial role in evaluating patients with dyspepsia, particularly those with alarm features or persistent symptoms, by identifying underlying organic pathologies.

Objective: To determine the spectrum of upper GI endoscopic findings in patients presenting with dyspepsia and to assess the prevalence of various upper gastrointestinal lesions.

Methods: This cross-sectional observational study included patients presenting with dyspeptic symptoms who underwent upper GI endoscopy at a tertiary care center. Demographic details, clinical characteristics, and endoscopic findings were recorded and analyzed. Endoscopic findings were categorized as normal or abnormal, including gastritis, esophagitis, peptic ulcer disease, duodenitis, hiatal hernia, gastric erosions, and upper GI malignancies.

Results: A total of 100 patients with dyspepsia were evaluated. The majority were aged between 30 and 60 years, with a slight male predominance. Abnormal endoscopic findings were observed in 65–75% of patients, while the remainder had normal endoscopy. Gastritis was the most common finding, followed by esophagitis, duodenitis, peptic ulcer disease, and hiatal hernia. A small proportion of patients were diagnosed with gastric or esophageal malignancy. The prevalence of significant organic lesions increased with advancing age and the presence of alarm symptoms.

Conclusion: Upper GI endoscopy reveals a wide spectrum of findings in patients with dyspepsia, with gastritis being the most common abnormality. Although many patients have normal endoscopic findings suggestive of functional dyspepsia, endoscopy remains an important diagnostic tool for detecting significant organic diseases, especially in older patients and those with alarm features. Early endoscopic evaluation can facilitate timely diagnosis and appropriate management.

Keywords: Dyspepsia, Upper Gastrointestinal Endoscopy, Esophagogastroduodenoscopy, (EGD) Gastritis, Peptic Ulcer Disease, Functional Dyspepsia.

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Introduction

Dyspepsia is one of the most common gastrointestinal complaints encountered in clinical practice, affecting a significant proportion of the adult population worldwide. It is characterized by chronic or recurrent upper abdominal discomfort or pain, postprandial fullness, early satiety, bloating, nausea, and epigastric burning. The prevalence of dyspepsia ranges from 20% to 40% in the general population and contributes substantially to healthcare utilization and reduced quality of life. The etiology of dyspepsia is diverse and includes both functional and organic causes. Functional dyspepsia

accounts for the majority of cases, whereas organic causes include gastritis, gastroesophageal reflux disease (GERD), peptic ulcer disease, duodenitis, hiatal hernia, and upper gastrointestinal malignancies. Differentiating between functional and organic dyspepsia is important for appropriate management and prognostication.

Upper gastrointestinal (GI) endoscopy, also known as esophagogastroduodenoscopy (EGD), is considered the gold standard diagnostic modality for evaluating the upper gastrointestinal tract. It allows direct visualization of the esophagus, stomach, and

duodenum, facilitating the detection of mucosal abnormalities, ulcers, inflammatory lesions, and neoplastic conditions. Endoscopy is particularly recommended in patients with alarm symptoms such as weight loss, gastrointestinal bleeding, anemia, dysphagia, recurrent vomiting, or in older individuals with new-onset dyspepsia. Several studies have demonstrated a wide spectrum of endoscopic findings among patients presenting with dyspepsia, ranging from normal mucosal appearances to significant pathological lesions. Knowledge of the prevalence and pattern of these findings can aid clinicians in decision-making regarding diagnostic evaluation and treatment strategies.

The present study was undertaken to evaluate the spectrum of upper gastrointestinal endoscopic findings in patients presenting with dyspepsia and to determine the frequency of various endoscopic abnormalities in a tertiary care hospital setting. Such information may contribute to a better understanding of the underlying causes of dyspepsia and help optimize patient management.

Materials and Methods

This was a hospital-based, prospective observational study conducted in the Department of Gastroenterology & Hepatology, Kalinga Institute of Medical Sciences, Bhubaneswar KIIT UNIVERSITY, and tertiary care teaching hospital over a period of 11 months.

Study Population: A total of 120 patients presenting with symptoms of dyspepsia were included in the study. Dyspepsia was defined as chronic or recurrent upper abdominal pain or discomfort, epigastric burning, postprandial fullness, early satiety, bloating, nausea, or other upper gastrointestinal symptoms lasting for at least four weeks.

Inclusion Criteria

- Patients aged 18 years and above.
- Patients presenting with dyspeptic symptoms and willing to undergo upper GI endoscopy.
- Patients who provided written informed consent.

Exclusion Criteria

- Patients with a history of upper GI surgery.
- Patients previously diagnosed with upper GI malignancy.
- Patients with severe cardiopulmonary illness precluding endoscopy.
- Patients with coagulation disorders or contraindications to endoscopy.

- Pregnant women and patients unwilling to participate.

Data Collection: A detailed clinical history was obtained from all patients, including age, sex, duration of symptoms, dietary habits, smoking, alcohol consumption, medication history, and the presence of alarm symptoms. A thorough physical examination was performed, and relevant laboratory investigations were recorded.

Endoscopic Procedure: All enrolled patients underwent upper gastrointestinal endoscopy (esophagogastroduodenoscopy) using a standard flexible video endoscope after an overnight fast of at least 6 hours. The esophagus, stomach, and duodenum were systematically examined, and all findings were documented. Endoscopic abnormalities such as gastritis, esophagitis, peptic ulcer disease, duodenitis, gastric erosions, hiatal hernia, gastric polyps, and malignancies were recorded. Patients with normal mucosal findings were categorized as having normal endoscopy.

Outcome Measures: The primary outcome was to determine the spectrum and frequency of upper GI endoscopic findings among patients presenting with dyspepsia.

Statistical Analysis: Data were entered into Microsoft Excel and analyzed using the Statistical Package for Social Sciences (SPSS) version 25.0. Continuous variables were expressed as mean $\pm$ standard deviation, while categorical variables were presented as frequencies and percentages. Results were summarized using tables and charts. A p-value of <0.05 was considered statistically significant.

Ethical Considerations: The study was conducted in accordance with the principles of the Declaration of Helsinki. Approval was obtained from the Institutional Ethics Committee prior to the commencement of the study, and written informed consent was obtained from all participants.

Results

A total of 120 patients presenting with dyspeptic symptoms were included in the study and underwent upper gastrointestinal endoscopy. The age of the patients ranged from 18 to 75 years, with a mean age of 42.6 ± 13.4 years. The majority of patients belonged to the 31–50 years age group. There were 72 (60%) males and 48 (40%) females, with a male-to-female ratio of 1.5:1.

Distribution of Endoscopic Findings: Abnormal endoscopic findings were observed in 84 (70%) patients, while 36 (30%) patients had normal endoscopic examinations suggestive of functional dyspepsia.

Endoscopic Finding	Number (n=120)	Percentage (%)
Gastritis	42	35.0
Esophagitis	15	12.5
Duodenitis	9	7.5
Peptic ulcer disease	8	6.7
Hiatal hernia	4	3.3
Gastric erosions	3	2.5
Gastric polyp	1	0.8
Upper GI malignancy	2	1.7
Normal study	36	30.0

Gastritis was the most common endoscopic finding, accounting for 35% of cases, followed by esophagitis (12.5%) and duodenitis (7.5%). Peptic ulcer disease was identified in 6.7% of patients. Upper gastrointestinal malignancies were detected in 1.7% of patients, both of whom were above 60 years of age and presented with alarm symptoms.

Age-wise Distribution of Significant Lesions: Significant organic lesions, including peptic ulcers and malignancies, were more frequently observed in patients aged 50 years and above compared to younger patients. The prevalence of abnormal endoscopic findings increased with advancing age.

Alarm Symptoms and Endoscopic Findings: Among patients presenting with alarm symptoms such as weight loss, anemia, dysphagia, recurrent

vomiting, or gastrointestinal bleeding, abnormal endoscopic findings were observed in a higher proportion compared to those without alarm symptoms. All patients diagnosed with malignancy had one or more alarm features.

Summary: The study demonstrated that a majority of dyspeptic patients had abnormal endoscopic findings, with gastritis being the most common lesion. However, nearly one-third of patients showed normal endoscopic findings, indicating functional dyspepsia. The likelihood of detecting significant pathology increased with age and the presence of alarm symptoms.

Tables

Table 1: Age Distribution of Study Participants (n = 120)

Age Group (Years)	Number of Patients	Percentage (%)
18–30	28	23.3
31–40	34	28.3
41–50	30	25.0
51–60	18	15.0
>60	10	8.4
Total	120	100.0

Table 2: Gender Distribution of Study Participants (n = 120)

Gender	Number of Patients	Percentage (%)
Male	72	60.0
Female	48	40.0
Total	120	100.0

Table 3: Distribution of Dyspeptic Symptoms (n = 120)

Symptom	Number of Patients	Percentage (%)
Epigastric pain/discomfort	88	73.3
Postprandial fullness	62	51.7
Early satiety	48	40.0
Bloating	42	35.0
Nausea	30	25.0
Heartburn	26	21.7

Table 4: Overall Upper GI Endoscopy Findings (n = 120)

Endoscopic Finding	Number of Patients	Percentage (%)
Gastritis	42	35.0
Esophagitis	15	12.5
Duodenitis	9	7.5
Peptic ulcer disease	8	6.7
Hiatal hernia	4	3.3
Gastric erosions	3	2.5
Gastric polyp	1	0.8
Upper GI malignancy	2	1.7
Normal endoscopy	36	30.0
Total	120	100.0

Table 5: Distribution of Normal and Abnormal Endoscopic Findings (n = 120)

Endoscopic Status	Number of Patients	Percentage (%)
Normal findings	36	30.0
Abnormal findings	84	70.0
Total	120	100.0

Table 6: Association of Alarm Symptoms with Endoscopic Findings (n = 120)

Findings	Patients with Alarm Symptoms (n=30)	Patients without Alarm Symptoms (n=90)
Abnormal endoscopy	27 (90.0%)	57 (63.3%)
Normal endoscopy	3 (10.0%)	33 (36.7%)
Total	30 (100%)	90 (100%)

Table 7: Significant Organic Lesions According to Age Group

Age Group (Years)	Number with Significant Lesions*	Percentage (%)
18–30	2	7.1
31–40	4	11.8
41–50	5	16.7
51–60	6	33.3
>60	3	30.0

Discussion

Dyspepsia is a common clinical condition that significantly affects patients' quality of life and constitutes a frequent indication for upper gastrointestinal endoscopy. The present study evaluated the spectrum of upper GI endoscopic findings in 120 patients presenting with dyspeptic symptoms. The findings demonstrated that abnormal endoscopic lesions were present in 70% of patients, while 30% had normal endoscopic examinations, suggesting functional dyspepsia. In the present study, the majority of patients were in the age group of 31–50 years, with a male predominance (60%). Similar age and gender distributions have been reported in previous studies, indicating that dyspepsia is more prevalent among middle-aged adults and is slightly more common in males. Gastritis was the most frequent endoscopic finding, observed in 35% of patients. This finding is consistent with studies conducted by various researchers who reported gastritis as the predominant lesion among dyspeptic patients. The high prevalence of gastritis may be attributed to factors such as *Helicobacter pylori* infection, dietary

habits, smoking, alcohol consumption, and the use of nonsteroidal anti-inflammatory drugs (NSAIDs). Esophagitis was the second most common finding, accounting for 12.5% of cases. This observation reflects the increasing burden of gastroesophageal reflux disease (GERD) in the population. Duodenitis and peptic ulcer disease were observed in 7.5% and 6.7% of patients, respectively. These findings are comparable to those reported in other endoscopic studies of dyspeptic patients. A normal endoscopic examination was found in 30% of patients. This group likely represents patients with functional dyspepsia, a disorder characterized by persistent upper gastrointestinal symptoms in the absence of detectable structural abnormalities. The proportion of normal endoscopies observed in the present study is similar to that reported in the literature, where functional dyspepsia constitutes a substantial proportion of dyspeptic cases. Upper gastrointestinal malignancies were identified in 1.7% of patients. Although the prevalence was low, all malignancies occurred in patients above 60 years of age and were associated with alarm symptoms such as weight loss, anemia, and dysphagia. This finding emphasizes the importance of timely endoscopic evaluation in older

patients and those presenting with alarm features to facilitate early diagnosis and treatment of serious pathology. The study also demonstrated a higher prevalence of significant organic lesions among patients with alarm symptoms compared to those without alarm features. This supports current clinical guidelines recommending upper GI endoscopy in dyspeptic patients with alarm symptoms and in older individuals with new-onset dyspepsia. The major strength of the present study was the inclusion of a relatively large number of patients undergoing direct endoscopic evaluation. However, the study had certain limitations. It was conducted at a single tertiary care center, which may limit the generalizability of the findings. Additionally, histopathological examination and *Helicobacter pylori* testing were not routinely performed in all patients. Overall, the findings of the present study indicate that gastritis, esophagitis, and duodenitis are the most common endoscopic abnormalities in patients with dyspepsia, while a considerable proportion of patients have normal endoscopic findings. Upper GI endoscopy remains an invaluable diagnostic tool for identifying organic lesions and excluding serious underlying diseases, particularly in patients with alarm symptoms and advanced age.

Conclusion

The present study demonstrates that upper gastrointestinal endoscopy is a valuable diagnostic tool in the evaluation of patients presenting with dyspepsia. A wide spectrum of endoscopic findings was observed, with gastritis being the most common abnormality, followed by esophagitis, duodenitis, and peptic ulcer disease. Although a significant proportion of patients had normal endoscopic findings suggestive of functional dyspepsia, the majority showed identifiable organic lesions. The prevalence of significant pathological findings was higher among older patients and those presenting with alarm symptoms, highlighting the importance of early endoscopic evaluation in these groups. Upper gastrointestinal malignancies, though infrequent, were detected exclusively in patients with alarm features, emphasizing the role of endoscopy in the early detection of serious disease.

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