

Original Article

Gastroesophageal Reflux-Associated Pharyngeal Symptoms: A Prospective Clinical Study

Corresponding Author:

Dr. Rashmi S. N

Dr. Akash Anadure¹, Dr. Rashmi S. N²

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1 Assistant Professor, Department of Otorhinolaryngology and Head & Neck Surgery, ESIC Medical College & Hospital, Kalaburagi, Karnataka, India.

2 Senior Resident, Department of General Surgery, ESIC Medical College & Hospital, Kalaburagi, Karnataka, India

ABSTRACT

Background: Pharyngeal symptoms are common in otorhinolaryngology practice and may result from infectious, allergic, environmental, and gastrointestinal causes. Gastroesophageal reflux disease (GERD), including its extraesophageal manifestation commonly referred to as laryngopharyngeal reflux (LPR), may contribute to pharyngeal irritation and upper aerodigestive tract symptoms. Patients may present with sore throat, dysphagia, throat irritation, and other pharyngeal complaints, sometimes accompanied by classical gastrointestinal symptoms.

Aim: To evaluate the clinical features, laryngoscopic findings, upper gastrointestinal endoscopic abnormalities, and treatment outcomes in patients presenting with pharyngeal symptoms associated with gastroesophageal reflux.

Materials and Methods: A prospective observational clinical study was conducted at ESIC Medical College, Kalaburagi, Karnataka, from June 2024 to May 2025. A total of 150 patients presenting with pharyngeal symptoms and clinical features suggestive of gastroesophageal reflux were included. There were 80 males and 70 females, with a mean age of 35 years. Patients underwent detailed clinical assessment, ENT examination, laryngoscopy, and upper gastrointestinal endoscopy. The major presenting symptoms were recorded. Laryngoscopic findings and gastrointestinal abnormalities were documented. Patients received treatment according to the treating team's clinical protocol, including a 14-day H. pylori eradication kit where indicated, antacid syrup, and dietary and lifestyle measures. Patients were followed for six months and categorized according to symptomatic response.

Results: Of the 150 patients, 80 (53.3%) were males and 70 (46.7%) were females. The mean age was 35 years. Sore throat and dysphagia were the most frequent symptoms, occurring in 60 patients each (40.0%), followed by chest burning in 50 patients (33.3%) and abdominal pain in 40 patients (26.7%). Laryngoscopy demonstrated congestion of the aryepiglottic folds as the predominant finding. Upper gastrointestinal endoscopy demonstrated abnormalities including erosive gastritis, esophagitis, and lax lower esophageal sphincter. Following treatment, 120 patients (80.0%) achieved complete symptomatic improvement, 20 (13.3%) showed partial improvement, and 10 (6.7%) showed no significant improvement. Thus, 140 patients (93.3%) demonstrated at least partial clinical improvement during the six-month follow-up period.

Conclusion: Gastroesophageal reflux-associated disease should be considered in selected patients presenting with pharyngeal symptoms, particularly when dysphagia and gastrointestinal symptoms coexist. In this study, reflux-associated laryngoscopic changes and upper gastrointestinal abnormalities were observed, and a high

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proportion of patients experienced complete or partial symptomatic improvement following treatment. Combined ENT and gastrointestinal evaluation may be useful in the assessment of patients with unexplained or recurrent pharyngeal symptoms. Further controlled studies incorporating objective reflux testing are required to establish causality.

Keywords: Gastroesophageal reflux disease; laryngopharyngeal reflux; pharyngeal symptoms; pharyngitis; dysphagia; sore throat; esophagitis; erosive gastritis; laryngoscopy.

INTRODUCTION

Pharyngeal symptoms constitute a substantial proportion of presentations to otorhinolaryngology outpatient departments. Sore throat, throat irritation, dysphagia, globus sensation, and cough may occur secondary to a variety of infectious and non-infectious conditions. Although acute infections are common causes, gastrointestinal reflux is an increasingly recognized contributor to upper aerodigestive tract symptoms.

Gastroesophageal reflux disease is characterized by the reflux of gastric contents into the esophagus, resulting in symptoms such as heartburn and acid regurgitation. When refluxate reaches the laryngeal and pharyngeal structures, the condition is commonly described as laryngopharyngeal reflux or extraesophageal reflux.

Unlike classical GERD, patients with suspected LPR may not have prominent heartburn or regurgitation. Instead, they may present to an ENT clinic with sore throat, throat clearing, globus sensation, dysphagia, chronic cough, hoarseness, or nonspecific throat irritation.

Exposure of the upper aerodigestive mucosa to gastric acid, pepsin, and other components of refluxate may produce local inflammatory changes. Laryngoscopic examination may demonstrate erythema, edema, posterior laryngeal changes, or supraglottic inflammatory findings. However, these findings are nonspecific and must be interpreted alongside the clinical history and other investigations.

Upper gastrointestinal endoscopy can identify associated esophageal and gastric abnormalities, including esophagitis and gastritis, and can provide additional information regarding the gastroesophageal junction.

The relationship between reflux and pharyngeal symptoms remains clinically important but complex. Improvement following treatment may support an association but does not, by itself, establish causation. The present study was therefore undertaken to evaluate the clinical and endoscopic characteristics of patients presenting with pharyngeal symptoms suggestive of reflux and to assess their clinical outcomes following treatment.

AIM

To evaluate the clinical profile, laryngoscopic findings, upper gastrointestinal endoscopic abnormalities, and treatment outcomes in patients presenting with pharyngeal symptoms associated with gastroesophageal reflux.

OBJECTIVES

Primary Objective: To evaluate the clinical outcome of patients presenting with pharyngeal symptoms associated with suspected gastroesophageal reflux.

Secondary Objectives: (1) To determine the demographic profile of the study population. (2) To document the common pharyngeal and gastrointestinal symptoms. (3) To identify laryngoscopic findings associated with suspected reflux-related pharyngeal symptoms. (4) To document abnormalities detected on upper gastrointestinal endoscopy. (5) To assess symptomatic response following treatment. (6) To evaluate the clinical outcome during six months of follow-up.

MATERIALS AND METHODS

Study Design and Setting

This was a prospective observational clinical study conducted in the Departments of Otorhinolaryngology and General Surgery at ESIC Medical College, Kalaburagi, Karnataka, India.

Study Period

The study was conducted over one year, from June 2024 to May 2025.

Study Population

A total of 150 patients presenting to the ENT outpatient department with pharyngeal symptoms and clinical features suggestive of gastroesophageal reflux were included. The duration of the presenting pharyngeal symptoms was approximately one week.

Clinical Assessment

A detailed clinical history and ENT examination were performed in all patients. The principal symptoms evaluated were sore throat, dysphagia, chest burning, and abdominal pain. The presence of associated gastrointestinal symptoms and other relevant clinical features was also recorded.

Laryngoscopic Examination

Laryngoscopic examination was performed to assess the pharynx, hypopharynx, and laryngeal structures. The predominant finding documented in the study was congestion of the aryepiglottic folds. Laryngoscopic findings were interpreted in conjunction with the clinical presentation and gastrointestinal evaluation rather than being considered diagnostic of reflux in isolation.

Upper Gastrointestinal Endoscopy

Upper gastrointestinal endoscopy was performed as part of the gastrointestinal evaluation. The abnormalities documented in the study included erosive gastritis, esophagitis, and lax lower esophageal sphincter. Exact numerical distribution of each endoscopic finding was not available in the study dataset.

Treatment

Treatment was provided according to the clinical findings and institutional treatment protocol. Patients received a 14-day H. pylori eradication kit (HP kit) where indicated, together with antacid syrup and appropriate dietary and lifestyle advice. The H. pylori eradication regimen was considered treatment directed toward documented or suspected H. pylori-associated gastrointestinal disease and should not be regarded as equivalent to standard anti-reflux pharmacotherapy. Patients were also advised regarding reflux-reducing lifestyle measures, including appropriate meal timing and avoidance of individual dietary triggers.

Follow-up

Patients were followed for six months. Treatment response was classified as complete improvement (complete resolution of presenting symptoms), partial improvement (clinically meaningful improvement with persistence of one or more symptoms), or no improvement (persistence of symptoms without significant clinical improvement).

Statistical Analysis

Categorical variables were expressed as frequencies and percentages. Continuous variables were expressed using descriptive statistics. Because the available dataset did not include standardized pre- and post-treatment symptom scores or a control group, inferential statistical analysis of treatment efficacy was not performed.

RESULTS

Demographic Characteristics

A total of 150 patients were included.

Parameter	Number	Percentage
Total patients	150	100
Male	80	53.3
Female	70	46.7
Mean age	35 years	—

The study population demonstrated a slight male predominance, with a male-to-female ratio of approximately 1.14:1.

Clinical Presentation

Symptom	Number	Percentage
Sore throat	60	40.0
Dysphagia	60	40.0
Chest burning	50	33.3
Abdominal pain	40	26.7

Sore throat and dysphagia were the most frequently reported symptoms, each occurring in 40% of patients. Chest burning was reported in 33.3% of patients, while abdominal pain was reported in 26.7%. As patients could have more than one symptom, the percentages are not expected to total 100%.

Laryngoscopic Findings

The predominant laryngoscopic finding was congestion of the aryepiglottic folds. This finding was observed in the clinical context of suspected gastroesophageal reflux and was correlated with the patient's symptoms and upper GI findings.

Upper Gastrointestinal Endoscopy

Upper gastrointestinal endoscopy demonstrated abnormalities including erosive gastritis, esophagitis, and lax lower esophageal sphincter.

Finding	Observation
Erosive gastritis	Present
Esophagitis	Present
Lax LES	Present

The available study records did not provide the number of patients corresponding to each individual endoscopic abnormality; therefore, percentages were not calculated.

Clinical Outcome

Outcome	Number	Percentage
Complete improvement	120	80.0
Partial improvement	20	13.3
No improvement	10	6.7
Total	150	100

Complete improvement was observed in 120 patients (80.0%). Twenty patients (13.3%) experienced partial improvement, while 10 patients (6.7%) did not demonstrate significant improvement. Overall, 140 patients (93.3%) showed at least partial clinical improvement during the six-month follow-up period.

DISCUSSION

The present study evaluated 150 patients presenting with pharyngeal symptoms in whom gastroesophageal reflux was considered a possible contributing factor. The study combined clinical assessment, laryngoscopic examination, upper gastrointestinal endoscopy, and longitudinal follow-up.

The mean age of the study population was 35 years. A slight male predominance was observed, with males accounting for 53.3% of the study population.

Sore throat and dysphagia were the most frequently reported symptoms, each occurring in 40% of patients. The prominence of these symptoms demonstrates that patients with suspected reflux-associated disease may present primarily with pharyngeal complaints rather than classical gastrointestinal symptoms.

Chest burning was reported by one-third of patients. This is clinically relevant because chest burning is a typical manifestation of gastroesophageal reflux and provides an important clinical clue when it occurs alongside pharyngeal symptoms.

Dysphagia was also reported in 40% of patients. Dysphagia warrants careful evaluation because it may arise from multiple esophageal and pharyngeal disorders. The use of upper GI endoscopy in the present study provided additional gastrointestinal assessment in these patients.

The predominant laryngoscopic finding was congestion of the aryepiglottic folds. Supraglottic inflammatory changes have been described in association with reflux-related upper aerodigestive tract irritation. However, such findings are nonspecific and may occur in other inflammatory conditions. Therefore, laryngoscopy should be viewed as part of a broader clinical assessment rather than as a standalone diagnostic test for reflux.

Upper GI endoscopy demonstrated erosive gastritis, esophagitis, and lax lower esophageal sphincter among the study population. The presence of esophagitis and an abnormal gastroesophageal junction provides objective evidence of upper gastrointestinal pathology in these patients and supports further evaluation of a possible relationship between reflux and pharyngeal symptoms.

The most significant finding of the present study was the treatment response. Complete improvement occurred in 120 patients, representing 80% of the study population. An additional 20 patients (13.3%) demonstrated partial improvement. Therefore, 93.3% of patients experienced at least some degree of symptomatic improvement during six months of follow-up.

The high proportion of patients demonstrating improvement suggests that gastrointestinal factors may have contributed to their symptoms. Nevertheless, treatment response alone cannot establish a causal relationship. Spontaneous improvement, placebo effects, lifestyle modification, treatment of coexisting gastrointestinal disease, and resolution of other contributing factors may also influence outcomes.

An important methodological consideration is the treatment regimen used in this study. The *H. pylori* eradication kit was administered for 14 days where indicated, along with antacid syrup and lifestyle measures. *H. pylori* eradication therapy primarily targets *H. pylori* infection and is not equivalent to conventional pharmacological treatment for GERD or LPR. Therefore, the improvement observed in this study should be interpreted as the outcome of the overall treatment strategy rather than as evidence that *H. pylori* eradication alone treats reflux-associated pharyngeal symptoms. The six-month follow-up represents a strength because it allows assessment of sustained clinical improvement beyond the immediate treatment period.

The study also has several limitations. It was conducted at a single institution and did not include a control group. Objective reflux testing using 24-hour pH monitoring or impedance-pH monitoring was not performed. Standardized reflux-specific clinical scores such as the Reflux Symptom Index and Reflux Finding Score were not available. Furthermore, the individual numerical distribution of the upper GI endoscopic findings was not available, limiting quantitative correlation between specific endoscopic abnormalities and clinical outcomes.

Despite these limitations, the findings emphasize the importance of considering gastroesophageal reflux and associated gastrointestinal pathology in selected patients presenting with pharyngeal symptoms. A coordinated approach between otorhinolaryngology and gastroenterology may facilitate more comprehensive evaluation.

Strengths of the Study

1. Prospective clinical design.
2. Sample size of 150 patients.
3. One-year recruitment period.
4. Combined ENT and gastrointestinal evaluation.
5. Laryngoscopic assessment.
6. Upper gastrointestinal endoscopic evaluation.
7. Six-month follow-up.
8. Documentation of complete, partial, and non-response to treatment.

Limitations

1. Single-center study design.
2. Absence of a control group.
3. Absence of objective 24-hour pH or impedance-pH monitoring.
4. Absence of standardized RSI and RFS scoring.
5. Exact numerical distribution of individual UGIE findings was not available.
6. Laryngoscopic aryepiglottic fold congestion is not specific to reflux.
7. The treatment regimen included *H. pylori* eradication therapy, making it difficult to determine the independent contribution of anti-reflux treatment.
8. The reported duration of pharyngeal symptoms was approximately one week, and therefore the findings should not be generalized to chronic pharyngitis without further study.

CONCLUSION

Gastroesophageal reflux-associated disease should be considered as a potential contributing factor in selected patients presenting with pharyngeal symptoms, particularly when symptoms such as sore throat and dysphagia coexist with gastrointestinal complaints.

In this prospective study of 150 patients, sore throat and dysphagia were the most common symptoms. Congestion of the aryepiglottic folds was the predominant laryngoscopic finding, while upper gastrointestinal endoscopy demonstrated abnormalities including erosive gastritis, esophagitis, and lax lower esophageal sphincter.

Following the treatment protocol, 80% of patients achieved complete symptomatic improvement and a further 13.3% demonstrated partial improvement. Overall, 93.3% of patients showed at least partial clinical improvement during six months of follow-up.

The findings support the clinical relevance of evaluating gastrointestinal factors in patients presenting with pharyngeal symptoms. However, because the study was observational and lacked objective reflux monitoring and a control group, a causal relationship between reflux and pharyngeal symptoms cannot be definitively established.

Further prospective controlled studies incorporating 24-hour impedance-pH monitoring, standardized reflux symptom scores, detailed laryngoscopic scoring, and quantitative endoscopic assessment are warranted.

Ethical Considerations

The study was conducted after obtaining approval from the Institutional Ethics Committee of ESIC Medical College, Kalaburagi. Written informed consent was obtained from all participants. Patient confidentiality was maintained throughout the study.

Conflict of Interest

The authors declare that there is no conflict of interest.

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