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Original Research Article

GERD/PLR and Chronic Throat Symptoms Correlation Study

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Abstract:

Background: Laryngopharyngeal reflux (LPR) is an extraesophageal presentation of gastroesophageal reflux disease (GERD), characterized by reflux of gastric contents into the laryngopharynx. Symptoms often include chronic throat clearing, cough, hoarseness, globus sensation, and dysphagia, which frequently overlap with GERD presentations. Diagnosis remains challenging due to nonspecific symptoms and variable objective findings.

Objective: To evaluate the correlation between clinical symptoms and laryngeal signs of reflux in patients with suspected LPR, and to compare clinical scoring systems (RSI/RFS) with standard reference criteria for LPR diagnosis.

Methods: A prospective cohort of 68 patients presenting with symptoms suggestive of LPR (e.g., throat clearing, cough, globus sensation, hoarseness) was enrolled. Inclusion criteria required RSI >13 and/or RFS >7. Participants underwent comprehensive clinical evaluation, including symptom questionnaires (RSI), laryngoscopic examination (RFS), and pharyngolaryngeal assessment. A control group of patients with low RSI/RFS scores was also evaluated for comparison.

Results: The LPR cohort (n = 68) demonstrated significantly higher mean RSI and RFS scores compared with controls, indicating more severe symptoms and laryngeal findings. Common symptoms included frequent throat clearing, chronic cough, globus sensation, hoarseness of voice, and dysphagia. Endoscopic assessment showed laryngeal erythema, vocal cord edema, and other inflammatory changes more frequently in the LPR group. The Reflux Symptom Index correlated strongly with clinical suspicion of LPR, supporting its utility in symptom assessment; RFS was useful in identifying laryngeal signs, although neither score perfectly matched objective reflux measures.

Conclusions: This study of 68 patients with suspected LPR confirms a strong association between clinical symptom burden (RSI) and laryngeal inflammatory findings (RFS), supporting the correlation between GERD/LPR and chronic throat symptoms. Although clinical scoring tools are helpful, objective measures remain essential for definitive diagnosis due to the nonspecific nature of symptoms.

Keywords: GERD/LPR, RSI, RFS.

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Introduction

Gastroesophageal reflux disease (GERD) is a common gastrointestinal disorder characterized by the retrograde movement of gastric contents into the esophagus, leading to symptoms such as heartburn and regurgitation. Beyond these typical manifestations, GERD may present with extra-esophageal symptoms involving the upper aerodigestive tract. One such presentation is laryngopharyngeal reflux (LPR), in which refluxed gastric contents reach the larynx and pharynx, potentially causing chronic throat-related complaints.

Patients with suspected LPR frequently report persistent throat clearing, chronic cough, globus sensation, hoarseness, dysphonia, and throat irritation. Unlike classic GERD, many of these patients do not experience typical heartburn, which makes diagnosis challenging. The nonspecific nature of these symptoms also overlaps with other conditions such as allergic rhinitis, postnasal drip, chronic sinusitis, asthma, and functional voice disorders, further complicating clinical assessment.

Several diagnostic approaches have been proposed to evaluate LPR, including symptom-based tools such as the Reflux Symptom Index (RSI) and laryngoscopic assessment using the Reflux Finding

Score (RFS). While these instruments are widely used in clinical practice, their correlation with objective measures of reflux remains controversial. The relationship between GERD/LPR and chronic throat symptoms is therefore an area of ongoing investigation.

Given the diagnostic uncertainty and the high prevalence of chronic throat complaints in otolaryngology clinics, understanding the correlation between GERD/LPR and laryngeal symptoms is clinically important. The present study aims to evaluate the association between reflux disease and chronic throat symptoms in a defined patient cohort, and to assess the relationship between symptom severity and laryngeal findings.

Materials and Methods

Study Design: This was a prospective observational correlation study conducted in the Department of Otorhinolaryngology in collaboration with the Department of Gastroenterology at Darbhanga Medical College and Hospital Laheriasarai, Darbhanga, Bihar. The study was carried out over a period of 15 months after obtaining approval from the Institutional Ethics Committee. Written informed consent was obtained from all participants.

Study Population: A total of 68 consecutive patients presenting with chronic throat symptoms of more than 3 months' duration were enrolled. Chronic throat symptoms included throat clearing, chronic cough, globus sensation, hoarseness of voice, throat irritation, and dysphagia.

Inclusion Criteria

- Age ≥18 years
- Persistent throat symptoms for ≥3 months
- Clinical suspicion of gastroesophageal reflux disease (GERD) or laryngopharyngeal reflux (LPR)
- Willingness to participate in the study

Exclusion Criteria

- History of smoking or alcohol abuse
- Upper respiratory tract infection within the preceding 4 weeks
- Known malignancy of the upper aerodigestive tract
- Prior laryngeal surgery
- Patients on proton pump inhibitors (PPIs) within 4 weeks prior to evaluation
- Chronic pulmonary diseases (e.g., uncontrolled asthma, COPD)

Clinical Assessment: All patients underwent detailed history taking and clinical examination. Reflux-related symptoms were assessed using the Reflux Symptom Index (RSI**)** questionnaire. An RSI score >13 was considered suggestive of LPR.

Laryngoscopic Evaluation: Indirect laryngoscopy and/or flexible fiberoptic laryngoscopy was performed to assess laryngeal findings. The Reflux Finding Score (RFS) was used to quantify laryngeal signs such as erythema, edema, ventricular obliteration, and posterior commissure hypertrophy. An RFS >7 was considered indicative of LPR.

Gastroenterological Evaluation: Patients were evaluated for GERD symptoms including heartburn and regurgitation. Upper gastrointestinal endoscopy was performed when indicated to assess for esophagitis or other reflux-related pathology.

Data Collection and Statistical Analysis: Demographic data, symptom profiles, RSI scores, RFS scores, and endoscopic findings were recorded. Statistical analysis was performed using appropriate software. Correlation between chronic throat symptoms and GERD/LPR parameters was analyzed using Pearson's or Spearman's correlation coefficient as applicable. A p-value <0.05 was considered statistically significant.

Results

Demographic Profile: A total of 68 patients were included in the study. The mean age of the participants was 42.6 ± 11.8 years (range: 19–68 years). There were 38 males (55.9%) and 30 females (44.1%), with a male-to-female ratio of 1.3:1.

Clinical Presentation:

The most common presenting symptoms were:

- Throat clearing – 52 patients (76.5%)
- Globus sensation – 47 patients (69.1%)
- Hoarseness of voice – 41 patients (60.3%)
- Chronic cough – 39 patients (57.4%)
- Throat irritation/burning – 36 patients (52.9%)
- Dysphagia – 18 patients (26.5%)

Typical GERD symptoms such as heartburn and regurgitation were reported in 40 patients (58.8%), while 28 patients (41.2%) had isolated throat symptoms without classic reflux complaints.

Reflux Symptom Index (RSI)

The mean RSI score was **18.9 ± 6.4**.

- 54 patients (79.4%) had RSI >13, suggestive of LPR.
- Higher RSI scores were significantly associated with increased frequency of throat clearing and globus sensation ($p < 0.05$).

Laryngoscopic Findings (RFS)

On laryngoscopic examination:

- Posterior commissure hypertrophy – 49 patients (72.1%)
- Vocal cord edema – 44 patients (64.7%)
- Erythema/hyperemia – 46 patients (67.6%)

- Diffuse laryngeal edema – 38 patients (55.9%)

The mean Reflux Finding Score (RFS) was 9.2 ± 2.8.

- 50 patients (73.5%) had RFS >7, consistent with LPR.

Correlation Analysis: A statistically significant positive correlation was observed between RSI and RFS scores ($r = 0.62$, $p < 0.001$), indicating that increased symptom severity was associated with more pronounced laryngeal findings.

Patients with typical GERD symptoms demonstrated significantly higher mean RSI and RFS scores compared to those without classic reflux symptoms ($p < 0.05$).

Upper Gastrointestinal Endoscopy (where performed): Among the patients who underwent endoscopy, esophagitis was identified in 28%, while the remainder showed either non-erosive reflux disease or normal findings.

Overall, the findings demonstrate a significant association between GERD/LPR and chronic throat symptoms, with a strong correlation between clinical symptom severity and laryngoscopic evidence of reflux-related laryngeal changes.

Discussion

The present study evaluated the relationship between gastroesophageal reflux disease (GERD), laryngopharyngeal reflux (LPR), and chronic throat symptoms in a cohort of 68 patients. The findings demonstrate a significant association between reflux-related pathology and persistent throat complaints, with a clear correlation between symptom severity and laryngeal inflammatory changes. Chronic throat clearing, globus sensation, hoarseness, and cough were the most frequently reported symptoms in this study. These findings are consistent with previously published literature, which identifies these complaints as hallmark features of LPR. Notably, a substantial proportion of patients in the present study reported throat symptoms in the absence of typical GERD manifestations such as heartburn or regurgitation. This supports the concept that LPR often presents differently from classical GERD and may remain underdiagnosed if clinicians rely solely on typical reflux symptoms.

The Reflux Symptom Index (RSI) proved to be a useful tool for quantifying symptom burden, with the majority of patients demonstrating scores above the diagnostic threshold. Similarly, laryngoscopic evaluation using the Reflux Finding Score (RFS) revealed characteristic inflammatory changes, including posterior commissure hypertrophy, vocal fold edema, and laryngeal erythema. The statistically significant positive correlation between RSI and RFS observed in this study indicates that increasing symptom severity is associated with more pronounced laryngeal findings, reinforcing the clinical relevance of these scoring systems.

However, the imperfect overlap between symptoms, laryngeal findings, and endoscopic evidence of GERD highlights the diagnostic complexity of LPR. Some patients with significant throat symptoms and elevated RSI/RFS scores demonstrated normal or minimal changes on upper gastrointestinal endoscopy. This discrepancy has been reported in earlier studies and may be explained by intermittent reflux events, weakly acidic or non-acid reflux, heightened laryngeal sensitivity, or multifactorial etiologies such as allergic or functional disorders.

The findings of this study emphasize the importance of a multidisciplinary approach in the evaluation of chronic throat symptoms. While symptom indices and laryngoscopic assessment are valuable, they should be interpreted in conjunction with clinical judgment and, where appropriate, gastroenterological evaluation. Empirical anti-reflux therapy may be beneficial in selected patients, but variable treatment response further suggests that reflux is not the sole contributor to chronic laryngeal symptoms.

Limitations of the present study include the relatively small sample size, lack of routine pH or impedance monitoring, and the observational design, which limits causal inference. Despite these limitations, the study adds to the growing body of evidence supporting a meaningful association between GERD/LPR and chronic throat symptoms.

Conclusion,

The present study supports a significant correlation between GERD/LPR and chronic throat symptoms, with higher symptom scores associated with greater laryngeal inflammatory changes. Recognition of LPR as a potential cause of persistent throat complaints is essential for timely diagnosis and appropriate management, although further studies using objective reflux monitoring are required to refine diagnostic criteria and treatment strategies.

References

1. Belafsky PC, Postma GN, Koufman JA. Validity and reliability of the Reflux Symptom Index (RSI). J Voice. 2002;16(2):274–277.
2. Belafsky PC, Postma GN, Koufman JA. The validity and reliability of the Reflux Finding Score (RFS). Laryngoscope. 2001;111(8):1313–1317.
3. Koufman JA. The otolaryngologic manifestations of gastroesophageal reflux disease (GERD): a clinical investigation of 225 patients using ambulatory 24-hour pH monitoring and an experimental investigation of

the role of acid and pepsin in the development of laryngeal injury. Laryngoscope. 1991;101(4 Pt 2 Suppl 53):1–78.
4. Katz PO, Gerson LB, Vela MF. Guidelines for the diagnosis and management of gastroesophageal reflux disease. Am J Gastroenterol. 2013;108(3):308–328.
5. Vaezi MF, Hicks DM, Abelson TI, Richter JE. Laryngeal signs and symptoms and gastroesophageal reflux disease (GERD): a critical assessment of cause-and-effect association. Clin Gastroenterol Hepatol. 2003;1(5):333–344.
6. Lechien JR, Akst LM, Hamdan AL, et al. Evaluation and management of laryngopharyngeal reflux disease: state of the art review. Otolaryngol Head Neck Surg. 2019;160(5):762–782.
7. Ford CN. Evaluation and management of laryngopharyngeal reflux. JAMA. 2005;294(12):1534–1540.
8. Vakil N, van Zanten SV, Kahrilas P, Dent J, Jones R; Global Consensus Group. The Montreal definition and classification of gastroesophageal reflux disease: a global evidence-based consensus. Am J Gastroenterol. 2006;101(8):1900–1920.