

LARYNGOPHARYNGEAL REFLUX IN A GASTROENTEROLOGY PRACTICE

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ABSTRACT

Objectives:

1) Establish the prevalence of laryngopharyngeal reflux (LPR) in patients seen by a gastroenterologist for gastroesophageal reflux (GERD).

2) Understand the ramifications that this may have on patient care as well as referral practices.

3) Assess a possible connection between LPR and hiatal hernia.

Methods:

All patients seen by a gastroenterology group at an endoscopy center over a two year period were screened for a diagnosis of GERD. All charts were reviewed and patients were divided into those with hiatal hernia, those without, and those of whom it is unknown. Attempts were made to conduct a telephone survey using the Reflux Symptom Index (RSI), a validated index used to assess for LPR.

Results:

164 patients were studied. A telephone survey was completed by 73 patients (44%). 22 of those (30%) had an RSI greater than 13, strongly suggestive of LPR. There was no significant difference in RSI between patients with and without hiatal hernia.

Conclusions:

A significant proportion of patients seen in a gastroenterology practice (30%) were found to have symptoms strongly suggestive of LPR. These patients may be under-treated and referral to an otolaryngologist for additional management should be considered. There was no difference seen in LPR symptom prevalence in patients with hiatal hernia, but further research is warranted.

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INTRODUCTION

Intermittent reflux of gastric contents is a normal physiologic event. However, in excess, it may cause a spectrum of pathologic changes, ranging from gastroesophageal reflux disease (GERD), which is frequently associated with classic symptoms such as heartburn and chest pain¹, to laryngopharyngeal reflux (LPR), which is associated less with GERD symptoms and more with throat clearing, chronic cough, and hoarseness²⁻³. The gold standard medical therapy for LPR and GERD is the use of a proton-pump inhibitor (PPI), often twice daily in patients with LPR³⁻⁷.

Hiatal hernia, a condition in which abdominal contents (usually the stomach) herniate up into the thoracic cavity, is associated with GERD. The connection between hiatal hernia and LPR has not been well elucidated⁸. The prevalence of hiatal hernia in patients with GERD ranges from 4% to 94%, depending on the population studied and on the method of diagnosis⁹⁻¹¹.

Patients are commonly referred from ENT physicians to GI physicians, and vice versa, as there is much clinical overlap between LPR and GERD.

The aims of this study are to determine: 1. the prevalence of LPR symptoms in a GERD patient population at a gastroenterology office, 2. whether patients with hiatal hernia have more severe LPR symptoms, and 3. whether they feel subjective improvement on medication.

METHODS

This was a cross-sectional study. Approval was obtained from the SUNY Downstate Institutional Review Board. The billing records of patients seen at the Parkside Endoscopy Center between July 2007 and April 2009 were screened for an ICD-9 code corresponding to GERD (530.11 or 530.81). There is currently no ICD-9 code for LPR.

Exclusion criteria were: 1. prior surgery aimed at treating GERD, 2. prior irradiation to the neck or chest, 3. presence of non-sliding, or paraesophageal hernia. The following information was obtained each patients' chart: age, sex, the method of diagnosing reflux, the presence or absence of hiatal hernia, and the method of diagnosing hiatal hernia.

An attempt was made to obtain a telephone interview from each patient. If there was no answer, a minimum of 10 calls at separate times were made to classify them as unreachable. Each patient was explained the purpose of the study and verbal consent was obtained. They were asked which medication they were taking for acid reflux, how often they were taking it, and if they felt that the anti-reflux medications were helping their symptoms. The Reflux Symptom Index (RSI) survey¹² was administered over the telephone.

RESULTS

174 patients were identified using the billing records search. Four patients were excluded because they did not have a clinical diagnosis of GERD or LPR, four were excluded because of a history of Nissen fundoplication, one had a paraesophageal hernia, and one had a history of laryngeal cancer treated with radiation. Thus, a total of 10 patients were excluded and 164 patients were included in the study.

The mean age was 54 (SD 13.9, range 23-90), and 72% of patients were female. The majority (79%) had GERD diagnosed clinically, while 10% were diagnosed with a Bravo pH-probe, 8% were diagnosed with esophagogastroduodenoscopy (EGD), and 5% were diagnosed by other methods. 51.2% of patients did not have a hiatal hernia, 27.4% of patients did have a hiatal hernia, and 21.3% did not have a diagnostic study available to determine this. Of those patients who had a study to determine the presence or absence of hiatal hernia, 93% had an EGD, 10% had manometry, 4% had a barium swallow, and 1% had a CT scan.

A telephone interview was completed by 73 patients (44.5%). 65 patients were unreachable, 19 refused, 6 had a language barrier, and one had expired since the last visit. The demographics of those who were and weren't interviewed are compared in Table 1.

Of the 73 who completed the interview, 28.8% were taking a PPI once a day, 20.5% were taking a PPI twice a day, 9.5% were taking a H2-receptor antagonist, and 32.9% were taking no medication for reflux. The mean RSI score was 10.86 (SD 11.1, range 0-42), and 30.1% of patients had a score greater than 13.

The presence or absence of a hiatal hernia did not show any significant correlation to the RSI score ($p=0.5$, 0.8 , using GLM procedure for regression analysis) (Figure 1). Patients with hiatal hernia had a mean RSI of 11.92 (SD 2.28) and those without had a mean RSI of 9.80 (SD 2.87). There was also no significant difference between the two groups in age, sex, or whether medications helped their symptoms.

Patients taking a PPI twice a day were more likely to find their medications ineffective than patients on other medication regimens (60% vs 21%, $p=0.007$, χ^2). This is likely due to a confounding effect, as these patients may have already been refractory to other treatments or may have more severe underlying disease.

	Interviewed patients (73)	Not interviewed patients (91)	
Age	53.0 (sd=14.9)	55.4 (sd=12.5)	$p=0.28$
Sex	56 women (76.7%) 17 men (23.3%)	62 women (68.1%) 29 men (31.9%)	$p=0.22$
Method of diagnosing reflux	50 (68.5%) clinical	80 (87.9%) clinical	$p=0.002$
Presence of hiatal hernia	41 (56.2%) No 24 (32.9%) Yes 8 (11.0%) Unknown	43 (47.3%) No 21 (23.1%) Yes 27 (29.7%) Unknown	$p=0.01$
Method of diagnosing hiatal hernia	52 (80.0%) EGD alone 13 (20.0%) Other	58 (90.6%) EGD alone 6 (9.4%) Other	$p=0.09$

Table 1. Demographic differences between patients who were and weren't interviewed.

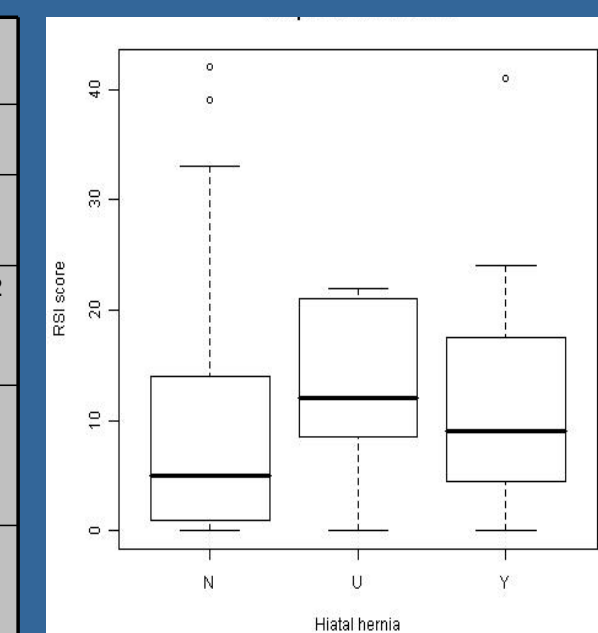


Figure 1. Boxplot graph of RSI score versus presence of hiatal hernia.

DISCUSSION

Thirty percent of the patients seen in the office had an RSI greater than 13, which has been shown to correlate highly to clinically significant LPR¹². Many of the patients with an elevated RSI were on suboptimal therapy for LPR. It is unclear whether this is a result of prescribing patterns or of patient compliance issues.

Although it would seem logical that the presence of a hiatal hernia would increase the risk of LPR, the findings in our study do not suggest this. One issue here is that there is no "gold standard" test for diagnosing a hiatal hernia. The vast majority of these patients had hiatal hernia diagnosed by EGD – one study¹³ showed that EGD underestimated the size of hiatal hernias compared to barium studies, but only 20 of 34 hiatal hernias diagnosed by EGD met radiologic criteria on barium study.

Our data collection was retrospective, and was drawn from the practice of 7 different attendings. The accuracy and interrater reliability for diagnosing either GERD or a hiatal hernia in this setting could not be determined. Most patients did not have objective confirmation of their reflux. Medication dosage was determined on the result of a phone interview, and was not verified. Duration of therapy was not determined. Patients' larynges were not visualized, as the RSI score was used to extrapolate whether they had LPR. And with any telephone survey, there is an inherent selection bias.

CONCLUSIONS

Our data, while limited, do not indicate that there is a significant difference in LPR symptom prevalence between patients with hiatal hernia and those without. Future study, incorporating rigid criteria for LPR as well as consistent and well-defined criteria for the presence or absence of hiatal hernia, would be helpful in further elucidating this disease.

Thirty percent of the patients seen for GERD had an RSI score consistent with the presence of LPR. This highlights the importance of close communication between the otolaryngologic and gastroenterologic communities. GI physicians should be aware of the high prevalence of these symptoms, and should consider referral to an otolaryngologist when appropriate.

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