Is Reflux Associated with Lingual Tonsil Hypertrophy? A Systematic Review.

Elizabeth Shay Valle, MD¹; Sreeya Yalamanchali, MD¹; Michelle S. Hwang, BS¹; Michael Friedman, MD¹,²
¹Advanced Center for Specialty Care, Advocate Illinois Masonic Medical Center  
²Rush University Medical Center

ABSTRACT

Objective: To evaluate the association between lingual tonsil hypertrophy (LTH), gastroesophageal reflux disease (GERD), and laryngopharyngeal reflux (LPR).

Data Sources and Review Methods: A systematic literature search was performed using MEDLINE and the Cochrane Library databases through July 2013 to identify original research articles examining the effects of GERD or LPR on LTH in both adults and children. Only original research articles in English were retrieved using the keywords “reflux and lingual tonsil,” “reflux and base of tongue hypertrophy,” “laryngopharyngeal reflux and lingual tonsil,” “LPR and lingual tonsil,” and extraesophageal reflux and lingual tonsil.”

RESULTS

Search Results: 33 abstracts with 15 duplicates. 18 abstracts were screened, 5 were excluded for not being relevant. 13 full text articles were assessed, and 8 studies were ultimately included. 5 studies were in adult populations, and 3 were in children.

Outcome Measures

Mamede et al used a 2 point scale of presence or absence of LTH. 2 studies quantified LTT thickness, and the remaining had raters determining LTH. 2 studies did not state specific LTH criteria.

Adult Studies

5 studies reported the correlation of LTH with LPR, with a pooled adult population of 520 patients. 4 of 5 studies were prospective case-control studies, one was a prospective case series.

Conclusion:

LTH was determined by laryngoscopy in 4 studies and by CT in 1 study. LPR was diagnosed through symptoms and physical exam findings as well as laryngoscopy. Two studies also used pH probes.

Study Selection

Two independent reviewers (S.Y. and E.S.) independently screened all abstracts of identified articles for eligibility. Inclusion criteria were: (1) the study was a case series, case-control study, cohort, or clinical trial; (2) the study population consisted of children or adults with reflux either (a) or (b), with or without a control group; (3) one of the aims of the study was to evaluate the prevalence of LTH in patients with reflux or in patients with reflux and OSAHS.

methods

Search Strategy

A systematic search was conducted to identify literature relating the presence of LTH and its relationship with LPR and GERD. Articles were identified by using MEDLINE and the Cochrane Library databases through July 2013. Only studies in English were retrieved using the keywords “reflux and lingual tonsil,” “gastroesophageal reflux disease and lingual tonsil,” “reflux and base of tongue hypertrophy,” “laryngopharyngeal reflux and lingual tonsil,” “LPR and lingual tonsil,” and “extraesophageal reflux and lingual tonsil.” References of retrieved articles were searched by hand for additional relevant articles.

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4 studies concluded that a possible correlation exists between LPR and LTH. Mamede et al found that LTH was present in 62% of patients with pharyngolaryngeal reflux symptoms, compared to 29% of patients with no symptoms. Sung et al noted that RSI >7 correlated significantly with thickness of tonsils.

Pediatric Studies

3 studies reporting relationship between LTH and LPR with a pooled pediatric population of 387 patients. 2 studies were retrospective case-control studies; one was a prospective study.

LTH was determined by direct laryngoscopy or microlaryngoscopy and bronchoscopy. Only one study described specific LTH staging criteria, on a scale of 0-2. LPR was diagnosed with pH monitoring, gastric scintiscan, or esophageal biopsy.

All studies showed correlation between LTH and symptoms consistent with LPR.

DISCUSSION

We sought to systematically review the evidence currently in the literature examining the association between LPR and LTH. Results from this review show that laryngopharyngeal signs of reflux correlate with LTH. This association appeared to hold true in most cases in both adults and children. Three of the studies showed a statistically significant correlation between LTH and LPR. The other two studies examined the interplay between LTH, LPR, and OSAHS. In these patients, although Friedman et al. found the relationship between LTH and LPR alone not statistically significant, there was a significant correlation between LPR and LTH in the setting of OSAHS in both papers. This indicates a complex relationship between these three disease processes that is an important area for future exploration.

The correlation seen in this systematic review between LPR and LTH may indicate a role for LTH in the diagnosis of LPR. At the very least, presence of LTH on endoscopic examination should prompt a question of whether the patient also suffers from LPR.

The heterogeneity between the included studies make it difficult to draw an absolute conclusion regarding the correlation between LPR and LTH. Multiple methods were used to detect reflux in the included studies. These disparate methods may lead to differences in the included patient population between studies.

Future studies should include a randomized, controlled trial investigating LTH and its possible correlation with LPR.

CONCLUSIONS

This systematic review indicates a possible correlation between reflux and LTH in both adults and children. Significant differences in diagnostic criteria and staging of LTH make accurate interpretation of results difficult. Future high quality studies are necessary to elucidate the role of reflux in the development of LTH. Additionally, there is a clear need for future studies describing a clinically relevant staging system for LTH.

REFERENCES


Figure 1. Literature Search Flowchart.