ABSTRACT

Many children with gastroesophageal reflux will initially present with respiratory symptoms including cough, stridor, increased work of breathing, apneic episodes, and recurrent episodes of croup. Despite a growing body of literature that suggests a correlation between airway pathology and GERD there still remains much controversy.

Objectives: To systematically review published literature correlating findings on endoscopic evaluation of the larynx and trachea in the pediatric population with the incidence of gastroesophageal reflux disease.

Methods: A systematic review was performed of 20 articles relating the presence of gastroesophageal reflux disease in the pediatric population to findings on endoscopic airway evaluation. These were identified through a structured PubMed search of English language literature using the key terms laryngopharyngeal reflux, extraesophageal reflux and gastroesophageal reflux, only those articles studying endoscopic findings in the pediatric population were included.

Results: All studies evaluated the subjects for the presence of gastroesophageal reflux. The most commonly utilized methods of diagnosis include barium esophagram, video fluoroscopy, gastric scintiscan, 24-hour pH probe, and esophageal biopsy. Arytenoid, postglottic and vocal fold edema and erythema, lingual tonsil hypertrophy, laryngomalacia, and subglottic stenosis are among the endoscopic findings most frequently identified in disease positive patients.

Conclusions: Certain commonly encountered findings on endoscopic evaluation of the larynx and trachea performed in children presenting with respiratory symptoms do indeed demonstrate a correlation with presence of gastroesophageal reflux and may indicate that antireflux therapy should be considered in the treatment of this population of patients.

INTRODUCTION

Despite a growing body of literature that suggests a correlation between airway pathology on endoscopic evaluation and gastroesophageal reflux in the pediatric population, there still remains much controversy. Both retrospective and prospective studies have been published, demonstrating an association of GERD and LPR positive pediatric patients with characteristic airway findings, including arytenoid, interarytenoid, and postglottic edema and erythema, laryngomalacia, subglottic stenosis, cobblestoning of the tracheal mucosa and blunting of the carina. Here, we have performed a systematic review of the available evidence.

METHODS & MATERIALS

• Systematic Review
• PubMed search of the English language literature
• Key terms included laryngopharyngeal reflux, extraesophageal reflux, and gastroesophageal reflux, as well as subglottic stenosis and laryngomalacia.
• Additional articles were obtained by hand searching the references listed in those identified by the above search criteria
• Inclusion criteria of a pediatric study population
• Resulted in 20 articles

INCIDENCE OF GERD IN THE LARYNGOMALACIA PATIENT

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INCIDENCE OF GERD IN THE SUBGLOTTIC STENOSIS PATIENT

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Figures 2a and 2b. The incidence of GERD as reported in documented cases of laryngomalacia and subglottic stenosis, according to the above authors.

CONCLUSIONS

• The reported incidence of GERD in patients presenting with respiratory symptoms ranges from 31-86%.
• Laryngomalacia and subglottic stenosis have been frequently examined in the literature in association with GERD, and found comcomitantly in 63-80% and 57-95% of patients, respectively.
• Importantly, a correlation was identified by Giannoni et al. between the severity of laryngomalacia and that of GERD.
• Additional endoscopic laryngeal findings frequently documented in the presence of GERD included: postglottic, arytenoid, and true vocal fold edema, and lingual tonsil hypertrophy.
• Furthermore, Carr’s trial of postglottic edema, loss of arytenoid contour and lingual tonsil hypertrophy was found in 61.5% of patients with GERD by Mitzner et al., while Carr et al. concluded each finding to be pathognomonic for the disease.
• Last, treatment options for GERD including behavior changes, medical therapy and surgical therapy, have proven to have a significant impact on the improvement of symptoms as well as endoscopic findings, even resulting in the avoidance of airway surgery in 35% of one study population.

REFERENCES