



REVIEW ARTICLE

Diagnostic and management problems of laryngopharyngeal reflux disease in children[☆]

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KEYWORDS

Laryngopharyngeal
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Otorhinolaryngology;
Diagnosis;
Treatment;
Children

Summary

Objective: Reflux is a common pediatric disorder and an association between reflux and otolaryngological conditions has been described. However, to prove a causal relationship a pathophysiological pathway must be identified, diagnostic test with high specificity and sensitivity must be developed and conservative or surgical treatment of reflux should be shown to predictably improve the otolaryngological problems. This review study aims at examining the available evidence for the above controversial issues.

Methods: Articles on pediatric laryngopharyngeal reflux published in English during the last decade were searched using Ovid and PubMed.

Results: A lack of consensus was found in four separate but interdependent areas: clinical manifestations, diagnostic testing, interpretation of findings and treatment. Although clinical experience and uncontrolled case series suggest that laryngopharyngeal reflux may possibly contribute to apnea, recurrent upper respiratory infections, laryngeal symptoms (mainly laryngomalacia and subglottic stenosis), sinusitis and otitis convincing data are lacking. For pediatric studies, the diagnostic role of pH monitoring, barium esophagram, scintigraphy, impedance monitoring, laryngoscopic examination, laryngeal biopsy and symptom assessment questionnaires remain to be defined. Interpretation of pharyngeal reflux events is controversial and the lack of established normative values as well as the existing variability in the diagnostic criteria (reflux definition, duration and number of pathological reflux events) limits the ability to directly compare results. Proposed laryngopharyngeal reflux treatment (lifestyle modification, medical or surgical therapy) is mostly empiric, with no significant placebo-controlled trials of treatment and outcomes.

[☆] A portion of this work was originally presented at the Fifth European Congress of Otorhinolaryngology Head and Neck Surgery, Rhodes-Kos, 11–16 September 2004.

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Conclusions: Limited evidence exists to support a causative relationship between reflux and any otorhinolaryngological condition or the effectiveness of treatment. Epidemiological and large-scale prospective controlled studies are required to clarify these issues.

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Contents

1. Clinical manifestations	581
2. Diagnostic testing	583
3. Interpretation of findings.	585
4. Treatment	585
4.1. Lifestyle modification	586
4.2. Medical therapy.	586
4.3. Prokinetics-antacids	586
4.4. Histamine-2 receptor antagonists.	586
4.5. PPIs	586
4.6. Surgical therapy	586
5. Future plans.	587
References.	587

Paediatric laryngopharyngeal reflux (LPR) has gained increasing recognition over the past few years, and it has been identified as a common pediatric disorder. Laryngopharyngeal reflux disease (LPRD) occurs when gastric contents reflux beyond the esophagus to oropharynx and/or nasopharynx, producing symptoms and tissue damage. Tissue injury may be caused by direct exposure to the gastric refluxate (acid, pepsin), vaguely mediated reflexes or perhaps by factors yet to be defined.

Several otolaryngological conditions have been ascribed to reflux [1,2]. Although many reports suggest an association between reflux and the development of these conditions, it remains difficult to demonstrate a direct causal role. This can be resolved only if there is a sound physiological rationale for these associations, if diagnostic tests can help to discriminate disease groups, and, most importantly, if treatment with active medications or surgery predictably improves the disease better than a placebo.

The present comprehensive review aims at assessing the strength of the available evidence in the literature regarding the suggested causative association, the accuracy of diagnostic testing, the definition of pathologic reflux and the efficacy of proposed treatment methods.

Articles published in English between January 1995 and May 2005 on LPR in children were searched using Ovid and PubMed. The search terms used were "laryngopharyngeal reflux", "extraesophageal reflux", "pharyngeal reflux", "laryngitis", "otorhinolaryngology", "diagnosis", "treatment" and

"children". The title and abstract of each citation identified was reviewed to judge eligibility, and reference lists of eligible studies were also searched for further citations. Studies concerning specific patient groups, such as premature infants, children with neurological impairments and adults were excluded. The application of these criteria resulted in a final selection of 65 studies. The quality of these studies was assessed according to the following criteria: research design (prospective/retrospective clinical trial, review, meta-analysis), adequacy of sample size, existence of control group, randomization, blindness of outcome measures, rigorous statistics and adjustment for confounding by specialty selection bias. There were six prospective controlled studies, 26 prospective observational case series, 17 retrospective case series and 12 review studies. None of them was randomized, blindness of outcome measures was reported in two prospective studies and sample size ranged from 7 to 222 cases with the majority of them having approximately 25–30 cases.

Unfortunately no direct comparisons between these studies was possible because studies linking reflux and ENT symptoms in children were found to be heterogeneous, representing a wide range of research designs, sample sizes, definitions of reflux, treatment protocols and reporting of outcome measures.

Controversial issues regarding LPR in children can be summarized in four separate but interdependent areas: (1) clinical manifestations, (2) diagnostic testing, (3) interpretation of findings and (4) treatment.

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