

Clinical Manifestations of Laryngopharyngeal Reflux

Sung Yong Han and Gwang Ha Kim*

Department of Internal Medicine, Pusan National University School of Medicine, and Biomedical Research Institute, Pusan National University Hospital, Busan, Korea

Article: Laryngopharyngeal reflux in children with chronic otitis media with effusion
Górecka-Tuteja A, Jastrzębska I, Składzień J, Fyderek K
(*J Neurogastroenterol Motil* 2016;22:452-458)

Gastroesophageal reflux disease (GERD) is one of the most common diseases in Asia, affecting about 4.3-15.7% of the adult population.¹ GERD syndromes are classified as esophageal and extra-esophageal manifestations.² Esophageal manifestations include heartburn, regurgitation and chest pain, while extra-esophageal manifestations include asthma, chronic cough, hoarseness, globus sensation, and laryngitis in adult patients. Laryngopharyngeal reflux (LPR) is considered the primary contributor to extra-esophageal symptoms. LPR is defined as the reflux of gastric content above the upper esophageal sphincter (UES). LPR symptoms appear in up to 60% of GERD patients.^{3,4} Most extra-esophageal syndromes in pediatrics are similar to those in adults; however, some syndromes, such as torticollis and serous otitis media (OM), are present mainly in pediatrics.⁵ However, the association between LPR and extra-esophageal syndromes reported in adults has not yet been proven in pediatrics. Many previous studies have suggested an association between LPR and some extra-esophageal syndromes, including OM in pediatrics.⁶⁻⁹

In this issue of the *Journal of Neurogastroenterology and Motility*, Górecka-Tuteja et al¹⁰ described the correlation between LPR and OM in children, and defined LPR by using multichannel intraluminal impedance (MII) combined with dual-probe (pharyn-

gosophageal) pH-metry (MII/pH). In children, OM is a common cause of acquired hearing loss, and its most important pathophysiology is impaired patency and dysfunction of the Eustachian tube. LPR is considered one of the risk factors of OM. In the study by Górecka-Tuteja et al,¹⁰ 19 of 28 children (68%) with OM had LPR, which is similar to the results found in previous studies (mean 49%, range 27-71%).⁸ Therefore, the authors suggest that LPR is an important risk factor of OM in children. In addition, the authors attempted to define LPR using MII/pH in children. In adults, the superiority of MII/pH compared with other modalities in the diagnosis of LPR has already been proven.¹¹ Most previous studies in pediatrics used dual-probe pH-metry to diagnose LPR,^{12,13} but LPR in pediatrics has not been defined by using this modality. The authors formulated the criteria to diagnose LPR using MII/pH: (1) retrograde bolus movement in all 6 impedance channels and (2) a pH drop of at least 0.2 in the upper pH sensor upon the bolus reaching the pharynx.

According to American Gastroenterology Association Guidelines,² LPR is not diagnosed solely based on laryngoscopic or endoscopic findings. A proton pump inhibitor (PPI) trial is recommended to treat the extra-esophageal syndromes in patients with typical GERD symptoms. On the other hand, a PPI trial is not

Received: June 13, 2016 Revised: None Accepted: June 13, 2016

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*Correspondence: Gwang Ha Kim, MD, PhD

Department of Internal Medicine, Pusan National University School of Medicine, and Biomedical Research Institute, Pusan National University Hospital, 179 Gudeok-ro, Seo-gu, Busan 49241, Korea
Tel: +82-51-240-7869, Fax: +82-51-244-8180, E-mail: doc0224@pusan.ac.kr

recommended in patients with extra-esophageal syndromes who do not have typical GERD symptoms. The pH monitoring test is recommended for these patients. Because the association between LPR and OM in pediatrics is not clear, a PPI trial is generally not recommended for children with OM.⁵

As pepsin and pepsinogen are detected in the OM effusion with a high prevalence as a result of physiologic reflux, whether a causal relationship exists between pepsin/pepsinogen in the OM effusion and OM is unclear.⁶ Although it is important to investigate the association between LPR and OM, there is no consensus among guidelines pertaining to LPR diagnosis.^{2,14} Therefore, this study is meaningful in its attempt to define LPR using MII/pH. Further studies are needed to establish criteria more specific for LPR in children and to investigate their validity.

Financial support: None.

Conflicts of interest: None.

Author contributions: Sung Yong Han drafted and edited; and Gwang Ha Kim revised and performed the final approval of the manuscript.

References

1. Jung HK. Epidemiology of gastroesophageal reflux disease in Asia: a systematic review. *J Neurogastroenterol Motil* 2011;17:14-27.
2. Katz PO, Gerson LB, Vela MF. Guidelines for the diagnosis and management of gastroesophageal reflux disease. *Am J Gastroenterol* 2013;108:308-328.
3. Jaspersen D, Kulig M, Labenz J, et al. Prevalence of extra-oesophageal manifestations in gastro-oesophageal reflux disease: an analysis based on the ProGERD Study. *Aliment Pharmacol Ther* 2003;17:1515-1520.
4. Martinucci I, de Bortoli N, Savarino E, et al. Optimal treatment of laryngopharyngeal reflux disease. *Ther Adv Chronic Dis* 2013;4:287-301.
5. Sherman PM, Hassall E, Fagundes-Neto U, et al. A global, evidence-based consensus on the definition of gastroesophageal reflux disease in the pediatric population. *Am J Gastroenterol* 2009;104:1278-1295.
6. Täsker A, Dettmar PW, Panetti M, Koufman JA, Birchall JP, Pearson JP. Reflux of gastric juice and glue ear in children. *Lancet* 2002;359:493.
7. Crapko M, Kerschner JE, Syring M, Johnston N. Role of extra-esophageal reflux in chronic otitis media with effusion. *Laryngoscope* 2007;117:1419-1423.
8. Miura MS, Mascaro M, Rosenfeld RM. Association between otitis media and gastroesophageal reflux: a systematic review. *Otolaryngol Head Neck Surg* 2012;146:345-352.
9. Havemann BD, Henderson CA, El-Serag HB. The association between gastro-oesophageal reflux disease and asthma: a systematic review. *Gut* 2007;56:1654-1664.
10. Górecka-Tuteja A, Jastrzębska I, Składzień J, Fyderek K. Laryngopharyngeal reflux in children with chronic otitis media with effusion. *J Neurogastroenterol Motil* 2016;22:452-458.
11. Lee BE, Kim GH, Ryu DY, et al. Combined dual channel impedance/pH-metry in patients with suspected laryngopharyngeal reflux. *J Neurogastroenterol Motil* 2010;16:157-165.
12. Chiou E, Rosen R, Nurko S. Effect of different pH criteria on dual-sensor pH monitoring in the evaluation of supraesophageal gastric reflux in children. *J Pediatr Gastroenterol Nutr* 2011;52:399-403.
13. Keleş B, Oztürk K, Günel E, Arbağ H, Ozer B. Pharyngeal reflux in children with chronic otitis media with effusion. *Acta Otolaryngol* 2004;124:1178-1181.
14. Vakil N, van Zanten SV, Kahrilas P, Dent J, Jones R; Global Consensus G. The Montreal definition and classification of gastroesophageal reflux disease: a global evidence-based consensus. *Am J Gastroenterol* 2006;101:1900-1920.