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Editorial

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Reciprocal causal relationship between nasopharyngeal reflux and Eustachian tube dysfunction

Keywords: alternobaric vertigo, eustachian tube dysfunction, gastroesophageal reflux, laryngopharyngeal reflux, nasopharyngeal reflux

Abbreviations: ABV, alternobaric vertigo; ETD, Eustachian tube dysfunction; GERD, gastroesophageal reflux; LPR, laryngopharyngeal reflux; NPR, nasopharyngeal reflux

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Editorial

In 2015, I published a mini-review article entitled, "Reciprocal Causal Relationship between Laryngopharyngeal Reflux and Eustachian Tube Obstruction" in the Journal of Otolaryngology-ENT Research.[1] I would like to amend the title of my article according to the current understanding of the related terms. As such, I would like to update the title of my mini-review article to "Reciprocal causal relationship between nasopharyngeal reflux and Eustachian tube dysfunction."

Laryngopharyngeal reflux can cause Eustachian tube obstruction

In the 2015 Eustachian Tube Dysfunction (ETD) Consensus Statement published in 'Clinical Otolaryngology', ETD is described as a syndrome with a group of signs and symptoms which indicate dysfunction of the Eustachian tube.[2] In clinical practice, ETD is characterized by signs and symptoms of pressure dysregulation in the middle ear. The Consensus Statement panel mentioned that, "When functioning normally, the Eustachian tube protects the middle ear against inflammation and infection by viruses, bacteria, and gastroesophageal reflux disease (GERD)."[2] Clearly, they agree that due to extraesophageal reflux caused by GERD, gastric contents can affect the Eustachian tube and can cause ETD and otitis media.[3]

Etymologically, laryngopharyngeal reflux (LPR) refers to the backflow of stomach contents into the laryngopharynx, which is the caudal portion and the largest part of the pharynx, located at the point where the pharynx separates anteriorly into the larynx and posteriorly into the esophagus. The term 'laryngopharyngeal reflux', which was coined by Dr. James A. Koufman in 1991,[4] was accepted by the American Academy of Otolaryngology-Head and Neck surgery in 2002.[3] While the most accepted alternative term is 'extraesophageal reflux'[3], there are numerous other synonyms for LPR in the medical literature including 'reflux laryngitis,' 'laryngeal reflux,' 'gastropharyngeal reflux,' 'pharyngoesophageal reflux,' 'supraesophageal reflux,' 'extraesophageal reflux,' and 'atypical reflux.'

Since 2015, some researchers have defined LPR as the retrograde flow of gastric contents into the larynx, oropharynx and/or the nasopharynx.[5] It seems that in these publications, 'laryngopharyngeal' is taken to mean 'of or common to both the larynx and the pharynx.' I believe that these more recent publications recognize the fact that extraesophageal reflux can reach the nasopharynx which is located near Eustachian tube opening. I suggest that we need a new term to importantly distinguish between the retrograde flow of gastric contents into the laryngopharynx, and its flow into the nasopharynx, which, by its close proximation to the Eustachian tube opening, can induce ETD. At this point, I would like to suggest that 'nasopharyngeal reflux (NPR)' be used as the term to describe such phenomenon.

Eustachian tube obstruction can cause laryngopharyngeal reflux

In the ETD consensus statement, the authors unfortunately overlooked alternobaric vertigo (ABV). ABV was first defined by Dr. Lundgren in 1965 to describe vertigo in deep-sea divers.[6] It is also used to describe vertigo experienced by aviators.[7] In both instances, ABV is defined as dizziness which occurs as a result of asymmetrical middle ear pressures.[8] ABV has long been associated with ETD, and may be accompanied by autonomic symptoms such as nausea, vomiting, and diaphoresis.[9,10] Of note, cases of insidious ABV are most likely to be overlooked because gastrointestinal symptoms are predominant.[11] The vestibular-emetic linkage phenomenon occurs when vestibular stimulation impulses pass along the vestibular nerve to the central nervous system and activate the emetic centers in the brainstem.[10] Due to extraesophageal reflux caused by autonomic symptoms triggered by ETD, gastric contents can reach the nasopharynx. In this manner, Eustachian tube dysfunction can cause nasopharyngeal reflux.

There is a clear reciprocal causal relationship between nasopharyngeal reflux and Eustachian tube dysfunction, meaning that nasopharyngeal reflux can cause Eustachian tube dysfunction, and Eustachian tube dysfunction can cause nasopharyngeal reflux—in either order. Consequently, both can be caught in a vicious cycle.

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