Editorial

Introduction

In this special edition we are proud to present a series of articles discussing the latest research addressing the diagnosis and pathologies of the Eustachian tube in the *World Journal of Otorhinolaryngology- Head & Neck Surgery*. The diagnosis and management of Eustachian tube disorders have undergone a remarkable evolution in the last decade. Driven by advances in understanding of the natural function coupled with new technologies to better visualize and image of the Eustachian tube, diagnosis algorithms and therapeutic interventions are rapidly being established.

In the clinical realm, a substantial and ever-increasing number of otolaryngologists are focusing more and more on evaluating patients with Eustachian tube disorders. New technologies are being developed in the outpatient ambulatory setting as well as in the operating room. The emergence of research endeavors relating to Eustachian tube disorders is vigorous. And more importantly, training programs across the world are changing to accommodate more Eustachian tube anatomy and training.

We are excited to present a series of 5 articles addressing the most recent advances in the field, with special attention to clinical practice in addressing the clinical presentation, diagnostic strategies, and treatment modalities.

In their paper "Advances in ET function testing", the authors Smith et al describe the diagnostic challenges presented by the wide variability of symptoms signs of Eustachian tube Dysfunction. They review the popular testing modalities including the clinical assessment, patient reported outcome measures, indirect measures of ET function, functional tests of ET opening, and tests of ET closure, and describe how each of these measures has remained non-specific as a singular test for diagnosis. The authors present a recommended diagnostic algorithm combining clinical examination, and function testing to aid in the diagnosis of ETD.

In the paper: In-Office Balloon Dilation of the Eustachian tube under Local Anesthesia: A retrospective Review," author Marc Dean reviews methods in which balloon dilation procedure can be carried out safely in an office setting. He describes an anesthetic protocol that preemptively addresses local and distant effects that may occur during the balloon dilation that can affect a patient’s ability to tolerate the procedure. In addition to providing analgesic treatment to the Eustachian tube and surrounding mucosa, this anesthetic protocol features a vestibular suppressant to minimize the risk of vertigo due to pressure differences between middle ear cavities (alternobaric vertigo), as well as analgesic support to the tympanic membrane itself to block a vagal response from the complex and barometrically sensitive innervation of the area.

In their paper "The Status of Eustachian Tube Balloon Dilations in Nordic countries" Silvola et al report on the increasing trends of balloon dilation procedures across Denmark, Finland, Norway, and Sweden. They show that over the last decade, growing consensus of treatment indications and procedure training have been met with an increasing rate of these operations and rising demand for training on this procedure. We applaud the Danish constituent’s proposal to maintain a national database registering all patients who undergo first time Eustachian tube dilation treatment to facilitate further research and provide ongoing measures of the treatment’s efficacy.

Traditional approaches for Eustachian tube assessment and dilation were approached via the nasopharyngeal route, and common wisdom has advised against advancing into the bony Eustachian tube for fear of injuring the internal carotid artery which lies immediately adjacent. For this reason, traditional approaches to the Eustachian tube via the nasopharyngeal route are limited to the distal (cartilaginous) portion of the Eustachian tube. With the advancement of endoscopic ear surgery techniques, Kapadiya et al explore examination and intervention from the proximal (tympanic) portion of the Eustachian tube. They argue that under careful endoscopic guidance, one can ascertain the true locus of dilatory dysfunction, and that...
via the transtympanic approach, dilating the protympanic segment of the Eustachian tube can be completed without injury to the carotid artery.

In their article Bance et al provide a clinically-focused review of the Patulous Eustachian tube. They summarize the typical presentation, different examination techniques, and discuss the challenges in both diagnosing and treating the Patulous Eustachian tube. They outline the possible mechanisms responsible for causing the respiratory autophony characteristic to the disease and review multiple approaches to treat the resultant floppy tympanic membrane, including the mass-loading methods their group pioneered. They discuss the relevant medical, pharmacological, and surgical treatment modalities, recognizing that few approaches have attained the ideal long-term treatment goals. We applaud their group’s work on this challenging problem and encourage more thorough investigation into this clinical problem.

This series represents the most recent advances in addressing Eustachian tube pathologies. Though the location and functions of the Eustachian tube have been known for centuries, proper diagnosis and treatment of Eustachian tube dysfunction has remained a challenge. The clinical picture is diverse, multiple examination techniques and treatment modalities exist and a clear management strategy has remained elusive. We hope that the reader finds this series informative and a clinically relevant to approaching Eustachian tube pathologies.

Conflict of interest

No conflict of interest.

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