



Commentary on the Upper Esophageal Sphincter in the High-Resolution Manometry Era

Leticia Yukari Okabe, BS and Fernando A. M. Herbella, MD

Department of Surgery, Federal University of São Paulo, São Paulo, Brazil

***Correspondence:** Dr. Fernando A. M. Herbella, Department of Surgery, Escola Paulista de Medicina, Rua Diogo de Faria 1087 cj 301 Sao Paulo, SP, Brazil 04037-003, E-mail: herbella.dcir@epm.br; Tel: +55-11-99922824

©2021 Fernando A. M. Herbella, et al. This article is distributed under the terms of the Creative Commons Attribution 4.0 International License.

Received: December 03, 2021;

Accepted: December 13, 2021;

Published: December 15, 2021

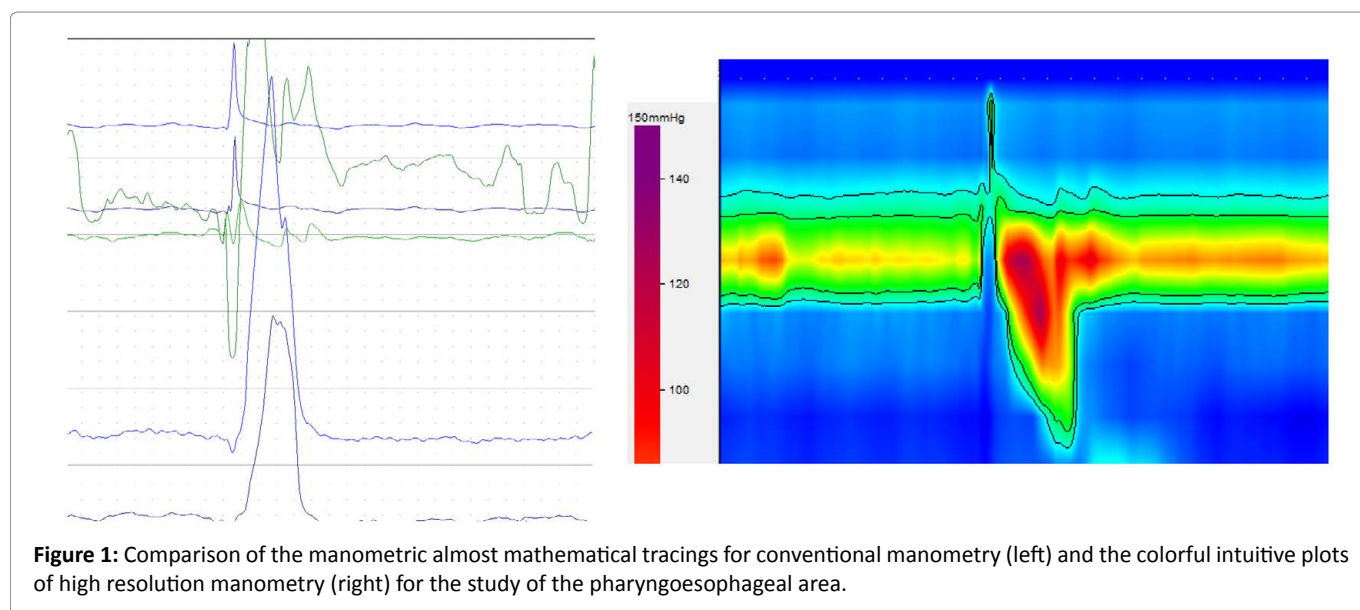
Citation: Leticia Yukari Okabe, Fernando A. M. Herbella. Commentary on the Upper Esophageal Sphincter in the High-Resolution Manometry Era. *Neurodegener Dis Current Res.* (2021);1(1): 1-2

Key words: Upper esophageal sphincter; Neurodegenerative disorders; Esophageal manometry; High resolution manometry

Dear Editor,

Some neurodegenerative diseases are known to impair upper esophageal sphincter (UES) motility, especially adequate relaxation [1]. UES dysmotility may lead to serious consequences such as dysphagia, subsequent aspiration pneumonia with prolonged hospitalization and higher risk of death [2]. In spite of its significance, the manometric analysis of the UES motility has been neglected due to technical limitations of the water-perfused manometry systems to measure the rapid response of the striated muscle that constitutes the UES added to the mobility of the pharyngoesophageal area during swallow [3]. At the beginning of the 21st century, however, high-resolution manometry (HRM) was developed to fix most of the conventional counterpart limitations and, thus, carrying a great potential to evaluate the UES (figure 1). Not many groups were interested in this potentiality though and focused studies are not abundant.

Our group have just reviewed current studies that employed HRM to evaluate the UES in health and disease [3]. The anatomophysiology of the pharyngoesophageal area was explained at the light of HRM with a comprehensive definition of the manometric parameters that may be used in this evaluation. It was followed by a compilation of studies for each disease that may affect the UES and has been studied by HRM. Neurologic disorders, the area that are of interest for the **Neurodegenerative Disorders: Current Research** journal readers, unfortunately, encompasses a very small part of this compilation due to the lack of papers on the topic. The authors showed that in patient after a stroke with dysphagia: (a) UES shorter relaxation time predicts aspiration; (b) UES basal pressure is significantly decreased after cricopharyngeal botulinum toxin injection; and (c) UES relaxation pressure and duration are improved, and basal pressure increased to normal values after cricopharyngeal balloon dilatation. Other disease reviewed was Parkinson disease. The authors found that patients frequently present with dysphagia and aspiration. UES function may be altered



in these patients and may cause these symptoms, particularly in late stages. The UES was, in fact, found to have lower UES resting pressure in early-stage disease and probably does not add to the symptom's genesis but progresses to incomplete opening and contraction in more advanced cases. The authors concluded that there is still a paucity of studies of the different aspects of the manometric evaluation of the UES linked to the pathophysiology, prognosis, and treatment of disease processes, especially regarding neurodegenerative disorders.

We hope that the interest of more groups increase to provide more insights on the UES motility in the neurologic population.

There is no funding.

There is no conflict of interest.

References

1. Williams RB, Wallace KL, Ali GN, Cook IJ. Biomechanics of failed deglutitive upper esophageal sphincter relaxation in neurogenic dysphagia. *Am J Physiol Gastrointest Liver Physiol.* 2002 Jul;283(1):G16-26. doi: 10.1152/ajpgi.00189.2001.
2. Taira K, Fujiwara K, Fukuhara T, Koyama S, Morisaki T, Takeuchi H. Evaluation of the pharynx and upper esophageal sphincter motility using high-resolution pharyngeal manometry for Parkinson's disease. *Clin Neurol Neurosurg.* 2021 Feb;201:106447. doi: 10.1016/j.clineuro.2020.106447.
3. Silva LC, Herbella FA, Neves LR, Vicentine FP, Neto SP, Patti MG. Anatomophysiology of the pharyngo-upper esophageal area in light of high-resolution manometry. *J Gastrointest Surg.* 2013 Dec;17(12):2033-8. doi: 10.1007/s11605-013-2358-3.
4. Norton P, Herbella FAM, Schlottmann F, Patti MG. The upper esophageal sphincter in the high-resolution manometry era. *Langenbecks Arch Surg.* 2021 Aug 31. doi: 10.1007/s00423-021-02319-1. Epub ahead of print. PMID: 34462811.