

## Post-thyroidectomy dysphonia and swallowing symptoms: The role of cricopharyngeal sphincter

### ARTICLE INFO

#### Keywords

Laryngeal  
Head neck surgery  
Otolaryngology  
Reflux  
Thyroid  
Thyroidectomy  
Voice  
Sphincter  
Dysphonia

Dear Editor,

We read the paper of Kim et al. entitled “*Persistent subjective voice symptoms for two years after thyroidectomy*” [1]. Authors observed that some voice quality parameters improved from pre-to post-treatment, while others deteriorated such as the Thyroidectomy-related Voice and Symptoms' Questionnaire scores. Voice abuse history in professional users was associated with worse vocal quality after thyroidectomy. We congratulate authors to have investigated this controversial topic through a prospective study. Post-thyroidectomy voice disorders are prevalent in otolaryngological consultations, but this topic is poorly investigated in the current literature [2]. In this letter, we would like to draw attention to an important condition that was not considered in the study, which is the impairment of the upper esophageal sphincter (UES) during the surgery.

The innervation of UES may involve inferior and superior laryngeal nerves, and the resting pressure of the UES is important to protect the upper aerodigestive tract against reflux events. It was established that the UES may undergo traction or thermal microtraumas during the thyroidectomy [3,4]. In that way, patients may have postoperative impairment of the UES and, consequently, a high risk of esophago-pharyngeal reflux events. The back flow of gastroduodenal content (e. g. pepsin, bile salts) into the upper aerodigestive tract is associated with the development of mucosa inflammation, and micro- and macroscopic changes [5]. In vocal cord tissue, pepsin may induce epithelial cell dehiscence, microtraumas, inflammatory infiltrates, mucus dehydration and thickening, leading to hoarseness and impairments of the subjective and objective voice quality evaluations [6]. Kim et al. observed a significant association between the severity of the postoperative vocal outcomes and the extent of thyroidectomy. This observation may support the above-mentioned hypothesis because UES traumas may particularly occur in case of big goiter that requires important gland traction [4]. The high prevalence of post-thyroidectomy dysphonia in voice professionals is an additional factor that may support the occurrence of UES impairments and related laryngopharyngeal reflux.

According to the pepsin impact on the vocal cord defense mechanisms [5,7,8], the vocal cords of voice professionals may be weakened post-thyroidectomy and, consequently, they may develop more likely microtraumas, modifications of the biomechanical properties and dysphonia [6].

The study of Kim et al. is an additional work to an important few studied problem in otolaryngology-head and neck surgery. Future studies should consider the use of pre- to post-thyroidectomy hypopharyngeal-esophageal impedance pH-monitoring and high-resolution manometry to explore the influence of the post-thyroidectomy UES physiology [9,10].

#### Acknowledgments

None.

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