

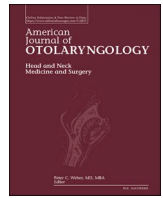


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Dysphonia in COVID-19 patients: Direct or indirect symptom?

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Dear Editor,

We read the article entitled: “Prevalence of dysphonia due to COVID-19 at Salahaddin General Hospital, Tikrit City, Iraq” [1]. Authors investigated the prevalence of dysphonia in hospitalized patients with coronavirus disease 2019 (COVID-19). They observed 22.3% of dysphonic patients who reported more frequently fatigue, nasal obstruction and diarrhea. At the rigid laryngoscope, authors observed bowing of the vocal folds. They reported that dysphonia persisted at least 1-month post-hospitalization. The study of dysphonia in COVID-19 patients is important regarding the neurotropism of the virus and the expression of angiotensin converting enzyme 2 (ACE2) in vocal folds [2,3]. We congratulate authors for this research. However, we wish to draw attention to many points.

First, authors did not consider laryngopharyngeal reflux disease (LPRD), which is an important confounding factor associated with dysphonia and throat symptoms [4]. The prevalence of LPR in Asia and Middle East was estimated to 10 to 30% [5] and, in a context of pandemic, the LPRD prevalence could be increased. Indeed, patients who developed COVID-19 may have an increase of their stress and anxiety, which are associated with autonomic nerve dysfunction, esophageal sphincter relaxations (sympathetic innervation of esophageal sphincters) and back flow of gastric content into the esophagus and upper aerodigestive tract [6,7]. The increase of LPRD in hospitalized COVID-19 patients has, moreover, been suspected in a recent study [8]. LPRD is usually associated with erythema and edema of the laryngopharyngeal region [4] as observed by Al-Ani et al. who identified edema and bowing of the vocal cords in dysphonic patients [1]. Authors also reported that dysphonic patients had more frequently nasal obstruction than non-dysphonic individuals. Interestingly, recent studies supported that the gaseous pharyngeal reflux events may reach nasopharynx and the back of inferior turbinate, leading to reflux-related nasal obstruction [9,10]. Second, hospitalized COVID-19 may require oral and inhaled corticosteroids regarding the dyspnea, which concerned all patients in the study of Al-Ani et Rashid [1]. The use of inhaled corticosteroids is

another confounding factor that may be associated with vocal cord dryness and dysphonia [11]. Thus, the report of the proportion of patients benefiting from inhaled corticosteroids in dysphonic and non-dysphonic groups makes sense to better understand the study results.

Third, authors did not report the proportion of patients with post-nasal drip and rhinorrhea. This information is however important because posterior rhinorrhea may be associated with throat sticky mucus, throat clearing, and secondary laryngitis that may be associated with dysphonia. Interestingly, the association between posterior rhinorrhea and dysphonia was reported by Azzam et al. in patients with dysphonia and COVID-19 [11].

We congratulate Al-Ani et Rashid for the study that reports the importance to consider dysphonia as direct or indirect symptom of COVID-19. According to our experience in Paris Hospitals, regarding the high proportion of long-term intubated patients with COVID-19 in intensive care units, we believe that future studies will probably report a higher prevalence of dysphonia in hospitalized patients who had post-intubation laryngeal damage, i.e. glottic stenosis, necrosis, glottic insufficiency or palsy.

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