

The Vocal Cord Nodule: Complication of Severe COVID-19 Infection

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ABSTRACT

Severe acute respiratory syndrome corona virus 2 acts through angiotensin converting enzyme-2 (ACE-2) receptors and involves multiple organ systems. Also associated with many upper airway symptoms, we reported an unnoticed complication of the upper airway, which presented as hoarseness of voice and throat discomfort during ICU stay, the upper airway flexible endoscopy was performed, which showed vocal cord nodule. The patient was managed conservatively, by improving hydration, steam inhalation, voice rest, and speech therapy. Gradually, there was a significant improvement in patient's symptoms and voice quality. An early prediction and risk mitigation can prevent this complication.

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The corona virus disease 2019 (COVID-19) is caused by severe acute respiratory syndrome corona virus 2 (SARS-CoV-2) infection. Most commonly the COVID-19 case presents with the complaints of fever, dry cough, respiratory distress and fatigue. In more severe cases it can cause viral pneumonia leading to Acute Respiratory Distress syndrome (ARDS) and even death. We wish to highlight an unnoticed complication of severe COVID-19 disease. An informed consent was obtained from the patient in reporting this case.

Case Report

A 69-year-old male patient with no relevant medical history presented in the emergency with fever and shortness of breath for five days with no other complains, patient was admitted in the general ward and managed conservatively. The oropharyngeal and nasopharyngeal samples were sent for COVID-19 RT-PCR testing which came out positive. The blood reports showed lymphopenia and raised inflammatory mediators. On the third day of admission he was shifted to ICU in view of worsening of

dyspnea. He was started on antibiotic tablet Azithromycin 500mg OD, tablet Dexamethasone 6mg OD and injection Enoxaparin 40mg subcutaneous OD as per institutional protocol and maintained on non-rebreather oxygen mask with intermittent BiPAP support. The HRCT chest was done, which showed diffuse ground glass appearance bilaterally involving all lobes and widening of vessels (Figure 1). On the eighteenth day of the ICU stay patient developed hoarseness of voice and breathing difficulty. The patient remained positive for four weeks; the fifth RT-PCR sample for COVID-19 came out negative. There was gradual improvement in respiratory function but the hoarseness of voice and throat discomfort persisted. After wearing full personal protective equipment, the upper airway flexible endoscopy was done, which showed bilateral vocal cord nodule at anterior 1/3rd and posterior 2/3rd junction (Figure 2). The patient then was conservatively managed with hydration, steam inhalation, voice rest and speech therapy. The patient gradually improved symptomatically with improvement in voice quality and then successfully discharged on 36th day of admission with outpatient department follow-up.

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Figure 1- Axial view of HRCT chest showing diffuse ground glass opacities with widening of vessels (arrows).

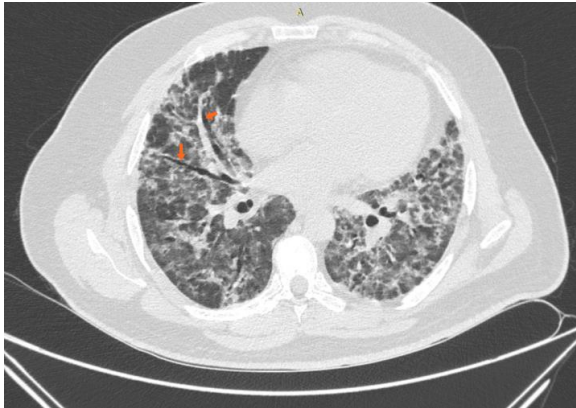


Figure 2- Endoscopic view of larynx showing bilateral vocal cord nodule (arrows) and edematous false vocal cords.



Discussion

The COVID-19 infection can lead to hyper inflammatory or cytokine release syndrome in up to 50% of cases leading to involvement of multi-organ systems [1]. The angiotensin converting enzyme-2 (ACE-2) has been identified as the receptor for the SARS-CoV-2 viral entry. Expression of the ACE-2 gene was initially established in the heart, kidney, and testis, but subsequent studies have shown a much broader distribution, including the upper airways, lungs, gut, and liver with high viral load in throat. The upper airway symptoms including pharyngodynia, nasal congestion, sore throat, anosmia, gustatory changes and rhinorrhoea have been reported in patients with COVID-19 infection [2-4].

Conclusion

In patient with severe COVID-19 disease there can be significant upper airway inflammation and dehydration. Vocal abuse, upper respiratory tract infection, dehydration, smoking and alcohol consumption are the predisposing factors for vocal nodule. The common clinical presentations are hoarseness, throat discomfort, vocal fatigue and breathing difficulty. This could be distressful for the patient and can prolong the hospital stay. Early prediction and risk mitigation by keeping patient hydrated, early infection control, use of inflammatory mediator inhibitors and voice rest can prevent this condition [5].

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