

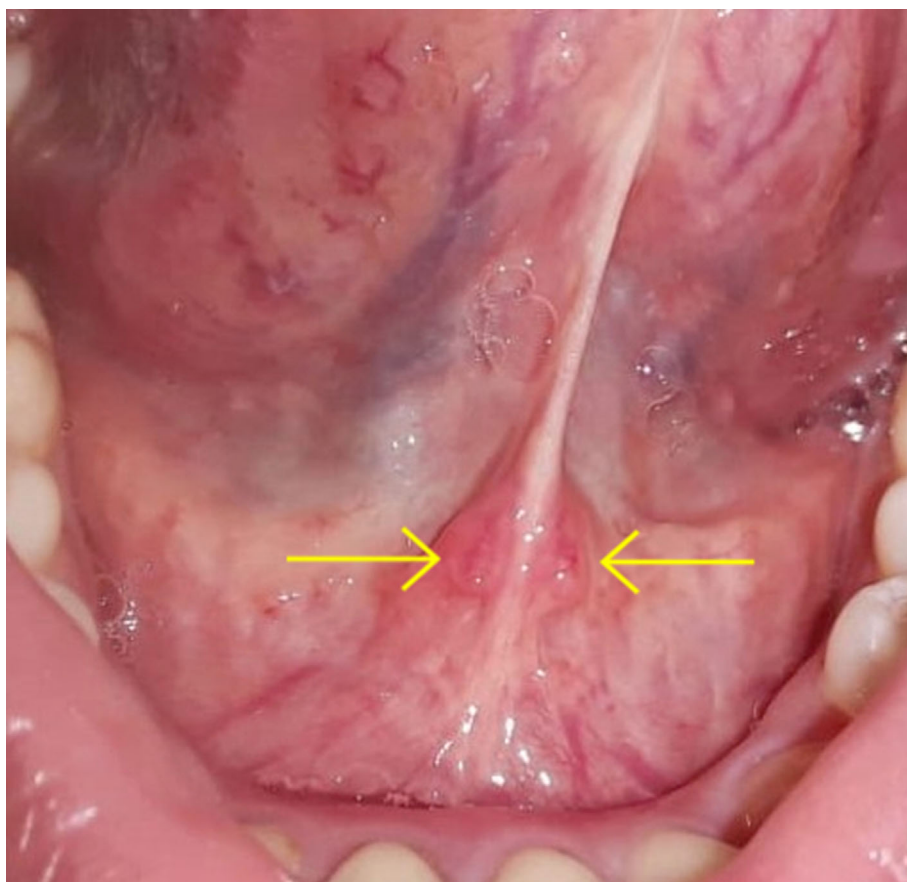
**LETTER TO THE EDITOR****Inflammation of papillae of Wharton's duct in COVID-19 patients: A debatable entity**

Dear Editor,

Novel coronavirus outbreak is one of the greatest challenges that we are facing as it is highly pathogenic and transmissible. Owing to safety concerns, many patients with suspected or confirmed coronavirus disease (COVID-19) do not have their oral cavity examined for oral manifestations. Although the presence of 2019-nCoV in oral cavity and saliva is a proven fact, only a few articles are published with regard to salivary gland manifestation in COVID-19 patients. It is known that ACE2 receptors play an important role in cellular entry of 2019-nCoV. Thus, ACE2 expressing cells may act as target cells and indi-

cate potential infectious route.<sup>1</sup> A high expression of ACE2 in oral cavity especially tongue, floor of mouth, and salivary gland might provide possible routes of entry for the 2019-nCoV.<sup>2</sup> Liu et al analyzed rhesus macaques and found expression of ACE2 in epithelial cell lining on minor salivary gland ducts.<sup>3</sup> Chen et al revealed the expression of ACE2 receptor in human granular cells in salivary glands, which can actually be a target site for 2019-nCoV.<sup>4</sup> Fisher et al reported parotitis in a diagnosed case of COVID-19.<sup>5</sup>

Here, we describe the inflammation of papillae of Wharton's duct seen in three patients diagnosed with COVID-19. About six patients with mild symptoms like fever,



**FIGURE 1** Moderate inflammation of papillae of Wharton's duct



**FIGURE 2** Pronounced inflammation of papillae of Wharton's duct

myalgia, and throat pain were tested positive for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) by RT-PCR at Kadakkal Government Taluk Hospital, Kerala by June 11, 2020. A thorough oral examination with the aid of intra oral photography revealed that three cases showed moderate inflammation of papillae of Wharton's duct (Figure 1). The submandibular salivary glands were nontender on palpation, and there was no other associated salivary gland pathology, which may present as inflammation of Wharton's duct except for hypo salivation. These three patients slowly improved and recovered completely within 2 weeks period. By the time mentioned, the inflammation of papillae of Wharton's duct seemed to be more pronounced (Figure 2).

Recent studies have proved the presence of SARS-CoV-2 RNA copies in the saliva of asymptomatic and symptomatic cases.<sup>6</sup> Wang et al suggested the possibilities of acute and chronic sialadenitis in patients infected with SARS-CoV-2.<sup>7</sup> Being able to promptly recognize and diagnose oral lesions is critical as it may help us to better understand the disease process. Further studies need to be carried out in larger cohorts of patients.

### CONFLICT OF INTEREST

The authors declare that there is no conflict of interest that could be perceived as prejudicing the impartiality of the research reported.

### AUTHOR CONTRIBUTIONS

A. S. Afsal, Najma Musthafa, M. S. Fathima, and G. G. Lakshmi collected and analyzed clinical data, wrote the manuscript, and revised the article.

### ETHICS STATEMENT

All procedures followed were in accordance with the 1964 Helsinki declaration and its later amendments.

Abdul Salam Afsal<sup>1</sup> 

Najma Musthafa<sup>2</sup>

Mundekattil Sulaiman Fathima<sup>1</sup>

Geetha Gopalakrishnan Lakshmi<sup>1</sup>

<sup>1</sup> Department of Health Service, Kerala, India

<sup>2</sup> Assistant Surgeon (Dentistry), Kerala, India

### Correspondence


Abdul Salam Afsal, Department of Health Service, Kadakkal Taluk Hospital, Kerala, India.

Email: [asafsal2020@gmail.com](mailto:asafsal2020@gmail.com)

### KEYWORDS

COVID-19, submandibular salivary gland, Wharton's duct

### ORCID

Abdul Salam Afsal  <https://orcid.org/0000-0001-6651-1733>

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