



Oral manifestations in COVID 19 patients

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Abstract

Background: The present study was conducted for assessing Oral manifestations in COVID 19 patients.

Materials & methods: The present study was conducted for assessing Oral manifestations in COVID 19 patients. The study was conducted on COVID-19 recovered patients regarding health status, oral hygiene practices, and symptoms in oral cavity during and after the disease illness. 100 subjects which were diagnosed as mild and moderate cases of COVID-19 disease. Data were gathered between two weeks and three months after the COVID-19 disease diagnosis, which was supported by positive RT-PCR results. Oral manifestations were noted. The SPSS software was used to assess all the results, which were recorded in a Microsoft Excel spreadsheet.

Results: A total of 100 patients were analysed. Mean age of the patients was 49.2 years. Out of 100 patients, 63 were males while the remaining 37 were females. Oral manifestations were seen in 31 percent of the patients. Xerostomia, oral ulcerations, gingivitis, petechia, oral candidiasis, Necrotizing periodontal diseases and Geographic tongue were seen in 23 percent, 21 percent, 15 percent, 16 percent, 12 percent, 10 percent and 8 percent of the patients respectively.

Conclusion: Dentists and other health practitioners should be careful during dental examinations because oral manifestations of COVID-19 may emerge before the onset of general symptoms of COVID-19.

Key words: COVID-19, Oral Manifestations

INTRODUCTION

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is a single-chain RNA virus that is the cause of novel coronavirus disease known as COVID-19. The most common clinical symptoms are fever, headache, sore throat, dyspnea, dry cough, abdominal pain, vomiting, and diarrhea. Angiotensin converting enzyme 2 (ACE 2) receptor is a known receptor for SARS-CoV-2 that is found in the lung, liver, kidney, gastrointestinal (GI) and even on the epithelial surfaces of sweat glands and on the endothelia of dermal papillary vessels. Today, various cutaneous manifestations of COVID-19 disease have been described including varicelliform lesions, pseudochilblain, erythema multiforme (EM)-like lesions, urticaria form, maculopapular, petechiae and purpura, mottling, and livedo reticularis-like lesions.¹⁻³

Since COVID-19 has been established as a systemic disease, a significant effort has been made to understand the alterations in the skin and oral cavity, which can appear as the first (or only) symptoms of this condition. Oral manifestations of COVID-19 include dysgeusia,

ulcers, petechiae, and reddish macules. However, the nature of these lesions is controversial, as some reports also describe lesions clinically befitting herpes simplex, candidiasis, and geographic tongue. As these oral conditions are commonly seen in patients with psychiatric problems, stress, medication use, and systemic diseases, it is difficult to establish the pathogenesis of these lesions and determine if they are a true manifestation of the disease or an accompanying manifestation.⁴⁻⁶ Hence; the present study was conducted for assessing Oral manifestations in COVID 19 patients.

MATERIALS & METHODS

The present study was conducted for assessing Oral manifestations in COVID 19 patients. The study was conducted on COVID-19 recovered patients regarding health status, oral hygiene practices, and symptoms in oral cavity during and after the disease illness. 100 subjects which were diagnosed as mild and moderate cases of COVID-19 disease. Data were gathered between two weeks and three months after the COVID-19 disease diagnosis, which was supported by positive RT-PCR results. Data were collected from study participants during the survey using one of the following techniques. The majority of the subjects agreed to personal interviews with the examiner, and throughout those interviews, every precaution to prevent the spread of disease was taken, including the use of protective gear, mouthpieces, hand hygiene practises, and social seclusion. All participants were interrogated. Following the interview, the completed questionnaire was gathered in a separate box and evaluated for analysis after a little break. Due to the risk of illness transmission, the examiner did not do an oral examination on patients. The study's purpose and common oral symptoms during and after COVID-19 disease were explained to a select few of the subjects who were contacted for telephonic interviews. They preferred to respond to the questionnaire that was supplied to them via Google Forms by consulting the clinical images in the attached file that showed oral manifestation in COVID-19 patients. The following oral manifestations were noted: xerostomia, difficulty chewing and swallowing, mouth ulcerations and burning sensations, gingival and periodontal status, any tooth-related issues, and taste modification. The SPSS software was used to assess all the results, which were recorded in a Microsoft Excel spreadsheet.

RESULTS

A total of 100 patients were analysed. Mean age of the patients was 49.2 years. Out of 100 patients, 63 were males while the remaining 37 were females. Oral manifestations were seen in 31 percent of the patients. Out of 31 patients with presence of oral manifestations, 5 patients, 8 patients and 18 patients were of mild COVID 19, Moderate COVID 19 and severe COVID 19 respectively. Significant results were obtained while correlating occurrence of oral manifestations with severity of COVID 19. Xerostomia, oral ulcerations, gingivitis, petechia, oral candidiasis, Necrotizing periodontal diseases and Geographic tongue were seen in 23 percent, 21 percent, 15 percent, 16 percent, 12 percent, 10 percent and 8 percent of the patients respectively.

Table 1: Prevalence of oral manifestations

Oral manifestations	Number	Percentage
Present	31	31
Absent	69	69
Total	100	100

Table 2: Correlation of occurrence of oral manifestations with severity of COVID 19

Oral	Mild	Moderate	Server	Total
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manifestations	COVID 19	COVID 19	COVID 19	
Present	5	8	18	31
Absent	23	21	25	69
Total	28	29	43	100
p- value	0.001 (Significant)			

Table 3: Spectrum of oral manifestations

Oral manifestations	Number	Percentage
Xerostomia	23	23
Oral ulcerations	21	21
Gingivitis	15	15
Petechia	16	16
Oral candidiasis	12	12
Necrotizing periodontal diseases	10	10
Geographic tongue	8	8

DISCUSSION

In a span of a few months, coronavirus disease 2019 (COVID-19) has developed into a full-scale global pandemic of epic proportions that affects all age groups with considerable mortality, various sequelae in survivors, and grave socio-economic impact on society. Involvement of multiple body systems and organs, including the lung, gastrointestinal tract, liver, blood vessels, heart, nervous system, and kidneys, has been reported in patients with COVID-19. The varied presentations of this disease are under intense study in the hope of better understanding its pathogenesis.⁶⁻⁹ Hence; the present study was conducted for assessing Oral manifestations in COVID 19 patients.

A total of 100 patients were analysed. Mean age of the patients was 49.2 years. Out of 100 patients, 63 were males while the remaining 37 were females. Oral manifestations were seen in 31 percent of the patients. Out of 31 patients with presence of oral manifestations, 5 patients, 8 patients and 18 patients were of mild COVID 19, Moderate COVID 19 and severe COVID 19 respectively. Significant results were obtained while correlating occurrence of oral manifestations with severity of COVID 19. Muthyam, Alka Kumari et al determined the oral manifestations among COVID-19 patients. A sample of 100 subjects, diagnosed as mild and moderate cases of COVID-19 disease were selected based on inclusion and exclusion criteria. The study comprised an almost equal number of male (51%) and female (49%) participants and among them, 48% belong to the health professional group. A total of 54% of subjects were aged above 35 years and 46% below 35 years. Oral manifestations among study subjects during and after the disease illness included xerostomia being the commonest symptom (44%), followed by swallowing difficulty (16%), mouth ulcerations (10%), chewing problem (7%), gum bleeding (6%), and burning sensation (4%). Xerostomia, frequent aphthous ulcers, swallowing difficulty, and burning mouth were the most frequently encountered symptoms in study subjects during the disease and post recovery.¹⁰

In the present study, Xerostomia, oral ulcerations, gingivitis, petechia, oral candidiasis, Necrotizing periodontal diseases and Geographic tongue were seen in 23 percent, 21 percent, 15 percent, 16 percent, 12 percent, 10 percent and 8 percent of the patients respectively. Cuevas-Gonzalez et al identified the main signs and symptoms of this disease in the oral cavity, and the following research question was established: What are the main oral signs and symptoms in COVID-19-positive persons? The electronic databases of PUBMED, SCOPUS, and SCIENCE DIRECT were analyzed, the keywords "ORAL DISEASES," "ORAL MANIFESTATIONS," and "COVID-19" were used taking into account the following inclusion criteria: studies whose main objective was oral manifestations secondary

to the confirmation of COVID-19, plus clinical cases, case series, and retrospective or prospective studies. For the assessment of the risk of bias the JBI Critical Appraisal Checklist for Case Series tool was used. A total of 18 studies were included, the most common initial signs/symptoms after contagion of SARS-CoV-2 were dysgeusia, dry mouth, and burning mouth, and the main signs/symptoms were the presence of ulcerative lesions, dysgeusia, and *Candida albicans* infections. It is very important to detect any alteration in the mucosa in patients with COVID-19 and to provide assertive treatment to avoid complications, and try to maintain adequate oral hygiene throughout the course of the disease to avoid the colonization of opportunistic microorganisms and to avoid complications both orally and systemically.¹¹

CONCLUSION

Dentists and other health practitioners should be careful during dental examinations because oral manifestations of COVID-19 may emerge before the onset of general symptoms of COVID-19.

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