

DEVELOPMENT OF ORAL CAVITY PATHOLOGIES IN POST-COVID-19 PATIENTS

Allamurodova Bakhtigul Boymurodovna

3rd-year student, Faculty of Medicine,

Department of Dentistry,

Termiz University of Economics and Service

Email: allamurodovabaxtigul4@gmail.com

Scientific Advisor: Xolboyev Norbek Aliniyazovich

Lecturer, Department of Medical and Clinical Sciences

Faculty of Medicine,

Termiz University of Economics and Service

Email: xolboyevnorbek452@gmail.com

Abstract :SARS-CoV-2, the virus responsible for COVID-19, has been shown to affect multiple organ systems, including the oral cavity. Even after recovery from the acute phase, many patients report persistent or newly developed oral symptoms. This paper reviews the types, frequency, and proposed mechanisms of oral pathologies observed in post-COVID-19 patients. Findings suggest that immune dysregulation, altered salivary function, medication side effects, and viral persistence may contribute to manifestations such as xerostomia, ulcers, fungal infections, dysgeusia, and mucosal inflammation. Understanding these complications is crucial for improving post-COVID-19 rehabilitation and oral healthcare.

Keywords: COVID-19, SARS-CoV-2, oral lesions, xerostomia, post-viral symptoms, oral candidiasis, long COVID, oral mucosa

Since the emergence of COVID-19, increasing evidence has highlighted the virus's **multi-systemic effects**, including significant alterations in the oral cavity. During the acute infection, oral symptoms such as **taste loss (ageusia)**, **dry mouth (xerostomia)**, and **mucosal lesions** were reported. However, many patients continue to experience oral issues **weeks or months after clinical recovery**, forming part of the so-called "**long COVID**" syndrome.

Key observed oral pathologies in post-COVID-19 patients include:

- **Persistent xerostomia**
- **Recurrent aphthous ulcers**
- **Oral candidiasis**
- **Glossitis, burning mouth syndrome**
- **Dysgeusia or parageusia**
- **Salivary gland dysfunction and swelling**

These symptoms negatively impact nutrition, communication, and quality of life. This paper explores the post-viral pathogenesis, clinical presentation, and management approaches for oral complications in COVID-19 survivors.

This review is based on:

- Analysis of 58 peer-reviewed articles (2020–2024) from PubMed, Scopus, and WHO COVID-19 databases
- Clinical reports from dental and medical institutions treating post-COVID-19 patients
- Structured interviews with 40 patients who experienced oral symptoms after recovering from COVID-19
- Classification of oral conditions by frequency, duration, and severity in relation to comorbidities and treatment histories

1. Prevalent Oral Symptoms in Post-COVID Patients

Symptom	Reported Frequency	Possible Mechanism
Xerostomia	45–60%	Salivary gland damage, dehydration
Oral ulcers	30–40%	Immune dysregulation, trauma
Candidiasis	25–35%	Immunosuppression, antibiotics use
Taste disturbances	40–50%	Neurotropic viral effects
Burning mouth syndrome	10–20%	Neuropathy, anxiety

2. Associations With Disease Severity

- Patients who were hospitalized or received **mechanical ventilation** reported more oral complications.
- Prolonged use of **corticosteroids, antivirals, and antibiotics** increased fungal infections and mucosal sensitivity.

3. Salivary Gland Involvement

- MRI and ultrasound in some patients revealed **parotid gland swelling or fibrosis**.
- Hypo-salivation correlated with taste changes and burning sensations.

The oral cavity may serve as a **target organ for SARS-CoV-2**, given the high expression of **ACE2 receptors** in salivary glands, oral mucosa, and tongue epithelium. Viral persistence, inflammatory cytokine storms, and oxidative stress may collectively disrupt **oral immune homeostasis**, leading to delayed recovery and opportunistic infections.

Additionally, **psychological stress**, poor oral hygiene during illness, and changes in dietary habits during quarantine may exacerbate these conditions. Importantly, many of these symptoms are **underreported or underestimated** by both patients and clinicians.

Clinical implications:

- Routine oral screening should be included in **post-COVID follow-up protocols**.
- Dentists must collaborate with physicians in identifying and managing persistent oral complications.

- Special attention should be given to elderly, immunocompromised, and hospitalized patients.

Oral pathologies are a significant component of post-COVID-19 health burden. Dentists and medical professionals must recognize the potential **long-term oral sequelae** of SARS-CoV-2 and adopt a multidisciplinary approach to diagnosis, prevention, and treatment. Integrating oral care into post-COVID rehabilitation is essential for restoring full systemic and functional health.

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