

Manifestation of diseases of the mucous membrane of the oral cavity sick children with COVID-19

Tamar Okropiridze ^{1,*}, Beso Kmosteli ¹, Alexandre Leonidze ¹,
Khatuna Tvildiani ¹, Marika Kalandadze ¹, Merab Merabishvili ¹,
Giorgi Modebadze ¹

¹ Teaching University Geomedi, Tbilisi, 0114, Georgia

* Email: tamaraokropiridze@gmail.com

DOI: [10.56580/GEOMEDI18](https://doi.org/10.56580/GEOMEDI18)

Abstract

As we made sure, with the spread of the coronavirus infection, the number of the oral mucosa diseases caused by COVID-19 is also growing. Effective diagnosis with rational pharmacotherapy of the oral mucosa pathology caused by this new pandemic is serious problem for dentists. In this article, on the basis of clinical-laboratory methods, diagnostics and treatment of the oral mucosa diseases were carried out in 43 patients which had previously undergone COVID-19. Oral examination results in patients with Coronavirus mutations show a variety of oral manifestations. The obtained research data clearly showed the necessity and advisability of including a dental examination in this category of patients after their clinical recovery [1-3]. Extremely severe acute respiratory infection caused by SARS-CoV-2 coronavirus. The SARS-CoV-2 virus is distinguished by its ability to infect various organs both through direct infection and through the body's immune response. This disease downstream can occur both in mild and severe form. One of the frequent complications is the development of viral pneumonia. Coronavirus can also infect the oral mucosa. The pathogenic agent enters the body due to angiotensin-converting enzyme 2, which is localized both on the surface of the alveoli and lung structures, and on the epithelial cells of the oral cavity, where it begins to actively multiply [5]. In connection with the spread of a new coronavirus

infection, the number of diseases of the mucous membrane of the oral cavity is steadily growing [4-6].

Keywords

Coronavirus, candidiasis, halitosis, xerostomia manifestations of coronavirus infection in the oral cavity.

Introduction

To draw the attention of doctors to the manifestation of dental diseases in patients who have undergone COVID-19 in order to implement a detailed etiopathogenetic approach to the treatment of pathologies of the oral mucosa.

Research material and method

On the basis of the Department of Dentistry of the Teaching University Geomedi within the framework of the advisory council on diseases of the oral mucosa, reception was held 19 patients (12 girls and 7 boys) who suffered from COVID-19, aged 5 to 15 years, with pathology of the oral cavity.

Stomatological examination of patients was carried out according to the general scheme, including examination of the mucous membrane of the oral cavity (color, humidity, presence and localization of lesion elements) and assessment of the condition of the teeth (lack of oral hygiene, presence of dental deposits, presence and quality of orthopedic structures). Laboratory methods included interpretation

According to the results of the examination, complex pathogenetic and etiotropic treatment was prescribed to the patients, taking into account the principles of the individual approach. Sanitation of the oral cavity with professional hygiene was recommended to patients.

Results and discussion

The observed patients complained of various rashes, defects, appearance of plaques, cracks in the oral cavity. From the anamnesis, it turned out that the patients had previously had a coronavirus infection. At the same time, a clear boundary was not noted regarding the time of occurrence of certain pathological elements in the oral cavity, whether they formed during the height of the COVID-19 disease or appeared after treatment. Unfortunately, it is not possible to examine patients during the height of the disease, due to the high risk of infection, since the virus is transmitted by airborne droplets. There is also a lack of statistical observations regarding the fact whether dental disease is the primary symptom of a coronavirus infection or should it be considered as a secondary manifestation on the background of infection or medication.

The majority of patients (97%), in the first place, noted bad breath, probably due to impaired taste and olfactory sensitivity. It should be noted that violations smell and taste are absolute and relative.

Due to the spread of a new coronavirus infection, the number of diseases of the oral mucosa caused by COVID-19 is steadily increasing.

It is known that coronavirus infection leads to temporary impairment of taste and smell sensitivity [1]. All patients noted the restoration of taste at various times after recovery, while 25% of patients reported a decrease in their sense of smell after recovery.

Candidiasis was diagnosed in 61% of patients after bacteriological examination. Fungi of the genus *Candida* are normally present in 40–60% of people and are opportunistic pathogens [3]. An increase in CFU over 10^3 – 10^4 degrees leads to clinical candidiasis with characteristic symptoms. There is no evidence base that is the primary factor in the development of candidiasis: COVID-19 or taking antibacterial drugs (for pneumonia). Patients complained of burning, soreness, change in taste, odor.

Erythematous rash in patients varied in appearance. In the latter case, millimeter-sized petechiae without erythema were noted on the hard palate against the background of a non-inflamed

mucosa. Also, this patient noted the appearance of petechiae before the height of the COVID-19 disease, which excludes the reaction of the mucosa to drugs, the viral etiology is probably the root cause of the foundation and development of different pathologies.

In patients with coronavirus problems, leftovers in oral cavity is CRAS (chronic recurrent aphthous stomatitis). Diagnosis of this pathology does not cause difficulties. It can be assumed that the etiological factor in the development of the disease is a violation of cellular and humoral immunity, both local and general. The leading factor of etiopathogenesis is the modulation of the cross-immune reaction, as a result of which aphthae are formed in the oral cavity. It should be noted that 100% of patients had periodontal disease. Depending on the age of the patient, the severity of coronavirus.

References

1. Belotserkovskaya Yu. G., Romanovskikh A. G., Smirnov I. P. COVID-19: New Coronavirus Respiratory Infection: New Data on Epidemiology, Clinical Course, and Case Management. *Consilium Medicum*, 2020, No. 3, pp. 12–20. (In Russian; abstract in English).
2. Vakhrushina E. V. immunocorrective therapy of patients with recurrent aphthous stomatitis: author. dis. cand. honey. Clinical and laboratory substantiation of immunocorrective therapy in patients with recurrent aphthous stomatitis: Abstract of the thesis. Moscow,
3. Lavrovskaya Ya. A., Romanenko I. G., Lavrovskaya O. M., Pridatko I. S. Candidiasis of the oral mucosa with dysbiotic changes. *Therapeutic Journal*, 2017, No. 1, p. 3, pp. 27–30. (in Russian; abstract in English).
4. Morozova S. V., Meitel I. Yu. Xerostomia: causes and methods of correction. *Medical Council*, 2016, No. 1, p. 1, pp. 124–128. (In Russian; abstract in English).
5. Nikiforov V. V., Suranova T. G., Mironov A. Yu., Zabozaev F. G. - New coronavirus infection (COVID-19): etiology, epidemiology, clinic, diagnosis, treatment and prevention]. Moscow, 2020. 48 p. (In Russ.; abstr. in Engl.).
6. Ushakov R. V., Eliseeva N. B., Polevaya N. P. and others. Modern methods of diagnosis, elimination and prevention of halitosis: Moscow, 2016, 81 p.