

# Epidemiology and Etiology of Prosthetic Stomatitis

Hojimuradov Burkhan Ravshanovich  
Assistant Department of Orthopedic Dentistry  
Samarkand State Medical University Samarkand, Uzbekistan.



## Abstract

Prosthetic stomatitis is a widespread disease in people who use dentures. According to some studies, prosthetic stomatitis affects up to two thirds and even more people using full removable dentures. Despite the frequency of occurrence, prosthetic stomatitis is most often asymptomatic, and only a small proportion of patients experience pain, itching or burning, and the disease is primarily diagnosed during examination as the presence of a focus of inflammation or swelling in the mucous membrane area adjacent to the denture.

## Keywords:

## Introduction

Denture materials can contribute to the colonization of bacteria and yeast fungi to varying degrees, thereby favoring the development of prosthetic stomatitis.



Prosthetic stomatitis develops more often in those people wearing dentures who do not take care of the oral cavity properly. This disease also occurs in diabetics and people taking steroid medications (through an inhaler or orally). Taking some antibiotics can also lead to the development of prosthetic stomatitis. Many people believe that taking certain antibiotics, especially long-term ones, contributes to repeated infections. Prosthetic stomatitis is a common

inflammation of the mucous membrane covered by the prosthesis, which is caused by yeast-like fungi of the genus *Candida*. *Candida albicans* is considered the most common cause of prosthetic stomatitis. This happens under removable dentures due to several causal and contributing factors. If left untreated, this disease can lead to fatal systemic candida infections. Candidiasis stomatitis associated with dentures, clinically described in the literature, is a localized or generalized inflammation of the oral mucosa in connection with a removable prosthesis. During this inflammatory process, *Candida* biofilms and the patient's immune response play an essential role. Among the microorganisms of this mixed biofilm, the *Candida* species easily reproduces and turns from a saprophyte into an opportunistic pathogen. In this situation, the presence of a prosthesis plays an important role. In particular, *Candida albicans* is able to affect the body's innate immune system to cause infection. In addition, elderly people with adentia who wear dentures may experience an imbalance and a decrease in the diversity of the oral microflora. This descriptive review is aimed at the manifestation of prosthetic stomatitis in patients who wear dentures and, in particular, the involvement of *Candida albicans* sp. associated with this pathology. The term "prosthetic stomatitis" is a collective concept and corresponds to the name "diseases of the oral mucosa caused by removable dentures".

With the development of prosthetic stomatitis, the mucous membrane under the prosthesis becomes hyperemic, edematous, and painful. Inflammation of the mucous membrane under the prosthesis may be focal or diffuse. Some foci have all the signs of catarrhal inflammation, while in others, erosion and hyperplastic growths in the form of small villous fungal polyps are observed against the background of edematous epithelium. Spot hemorrhages are possible on the inflamed mucous membrane. Diffuse inflammation is characterized by similar signs, but occupies the entire space of the prosthetic bed, exactly coinciding with its boundaries. The mucous membrane looks cherry-red, loosened, edematous. In the distal third of the hard palate, the foci of inflammation may become rough due to loosening of the epithelium.

## CAUSES OF STOMATITIS:

- Unfair or irregular oral hygiene
- Poor-quality care for a removable prosthesis,
- Attempts at self-correction or repair of the prosthesis
- Injuries to the oral mucosa
- Weakened immunity, the presence of immunodeficiency.

## Goal

The purpose of the review was to provide updated information on the epidemiology and etiology of prosthetic stomatitis, as well as on the potential role of dentures in the development of the disease.

## Materials and Methods

To find information about the epidemiology and etiology of prosthetic stomatitis, as well as the potential role of denture materials in the development of the disease, a literature search was conducted in the PubMed electronic database, dating back to November 2023.

## Results

The prevalence of prosthetic stomatitis among denture users varies from 15% to over 70%. Apparently, the spread of prevalence rates was influenced by conducting a study among different population samples. The incidence of prosthetic stomatitis was higher among women and the elderly. The etiological factors of prosthetic stomatitis include poor hygiene of dentures, constant wearing of removable dentures, wearing dentures at night, accumulation of plaque, as well as contamination of the surface of dentures with representatives of bacterial microflora and yeast fungi. In addition, poorly fitted dentures can cause injury to the mucous membrane. All of these factors increase the ability of *Candida albicans* to colonize both dentures and the surface of the oral mucosa. The development of new materials for dentures is aimed at reducing the formation of biofilms on their surface, thereby reducing the colonization of bacteria and yeast fungi and, with proper care of dentures, helping to reduce the risk of prosthetic stomatitis.

## Conclusions

To reduce the risk of prosthetic stomatitis, high-quality manufacturing of dentures is required, informing and educating patients on the rules of care for the removable structure, as well as regular preventive examinations to assess the quality of the fit and functioning of the prosthesis.

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