



CHANGES IN THE ORAL CAVITY DURING INFLAMMATORY PROCESSES OF THE MUCOUS MEMBRANE

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Abstract : *Stomatitis is an inflammatory process on the oral mucosa caused by the immune system's reaction to an irritant from the external environment. It manifests itself as swelling, redness and ulcers on the walls of the mucous membranes. This disease requires immediate treatment. If you delay, you cannot do without antibiotics, stomatitis spreads to healthy tissues. In addition, the patient cannot eat food calmly, he is bothered by a burning sensation, painful sensations when chewing food and talking.*

Key words : *chronic gastroduodenitis, primary inflammation, stomatitis, harmful microorganisms, propolis infusion, swelling, redness, bacteria.*

When the mucous membrane covering the hard and soft palate, lips, gums, cheeks, floor of the mouth, lower and back surface of the tongue becomes inflamed, it is stomatitis. To this day, chronic recurrent aphthous stomatitis remains one of the most common diseases of the oral mucosa in the practice of a dentist. According to the World Health Organization, this pathology affects up to 20% of the population. Patients experience severe pain and burning from a variety of irritants, including during speech, eating, which in turn leads to a decrease in social adaptation. The oral mucosa has a number of features: it is resistant to the effects of physical, thermal and chemical irritants, prevents the introduction of infectious agents, and has increased regenerative capacity.

The prevalence of diseases of the upper gastrointestinal tract in adolescence is high and, according to a number of authors, amounts to 60% to 70% of gastroenterological pathology, including the majority of which is chronic



gastroduodenitis: from 65% to 80% of cases, while *Helicobacter infection pylori* accounts for 80% to 83% of sick adolescents.

It is important to note that the studies conducted suggest that in combination with inflammatory diseases of the gastrointestinal tract, the incidence of recurrent aphthous stomatitis increases to 11.6% and in some cases can reach up to 40-50% of cases. In long-term pathology of the gastrointestinal tract, as a rule, erosive and ulcerative lesions of the gastric mucosa and small intestine develop, which is combined with the appearance of aphthae on the oral mucosa. The phylogenetic unity of the digestive tract suggests that erosive and ulcerative lesions of the oral mucosa are a reflection of inflammatory changes in the underlying parts of the gastrointestinal tract, in particular, the manifestation of recurrent aphthous stomatitis may be one of the first symptoms of exacerbation of chronic gastroduodenitis. Many diseases are united under one term - common and rare, occurring both in adults and . According to statistics, symptoms of stomatitis can be found in every fifth inhabitant of the planet. Therefore, everyone should know about it. This is a generalized name for diseases that affect the mucous membrane, causing ulcers in the mouth of adults and children. The wound may appear on the cheek, palate, throat, gums or lips. The manifestation of the pathology is swelling, redness, single or multiple painful ulcers (aphthae). Generalized stomatitis (affects most of the mouth) is similar to a rash in the form of blisters, yellow sores or white ulcers in the mouth. Sometimes there is a burning sensation in the mouth, dryness due to changes in the composition of saliva (xerotomy). During the disease, taste sensations and sensitivity may change, chewing becomes difficult, and patients with weak immunity are at risk of re-infection. In the general system of providing medical care to patients in dental medical organizations, 17.96% of the total number of those seeking dental care are patients with a complete absence of teeth in one or both jaws. People using dentures often develop candidal stomatitis, especially if patients use a removable denture made of acrylic plastic. According to medical research, 15-30% of people without inflammatory complications have *Candida* fungi on the mucous membrane of the denture bed and the adjacent surface of a complete removable denture. The presence of fungi is



possible in a slightly acidic environment (pH 5.8-6.5), while they produce enzymes and break down proteins, carbohydrates, fats, keratin. This leads to damage to the structure of the prosthetic material, especially acrylic, including due to organic acids such as citric, oxalic, succinic, acetic, lactic, etc. When plastic ages, when its physical and chemical properties change, additional conditions are created for the best development of fungi.

Symptoms

The disease has all the classic signs of local inflammation - the mucous membrane swells, turns red and becomes painful. Because of the pain, it is difficult to eat, brush your teeth and even talk. If there are no other symptoms, doctors diagnose simple, or catarrhal, stomatitis. But often the process does not end there, and against the background of redness, wounds appear - superficial or deep.

General symptoms :

- primary inflammation - white rashes (the top of the ulcer is yellowish) and a red base at the gum;
- secondary changes - red spots, blisters, which over time form aphthae (ulcers);
- burning sensation in the mouth (oral dysesthesia);
- discomfort when chewing or brushing teeth;
- increased sensitivity, bleeding and swelling of the gums;
- profuse salivation;
- plaque on the mucous membrane of the gums, tongue or throat.

Particular attention should be paid to the following symptoms:

- high temperature, up to 38 °C;
- fluid-filled blisters larger than 10 mm;
- eye inflammation;
- change or loss of taste;
- thick, viscous discharge from the wound.



Depending on the size and appearance of the wound, a distinction is made between:

- Superficial rashes. They can be small (up to 1 cm) in the form of flat spots or large plaques (palpable).
- Hollow wounds with transparent contents - vesicles or bullae. Blisters filled with pus.
- Aphthae are small, round ulcers. The wounds are inflamed at the base and have a characteristic grayish exudate.

You have probably noticed small but quite painful ulcers, or aphthae, in the oral cavity - signs of [aphthous stomatitis](#). Aphthae can appear as large or small single elements or rashes, depending on the cause of the inflammation. Finally, stomatitis can be ulcerative. Unlike aphthae, an ulcer affects deeper layers of the mucous membrane, so you can notice that the wound has a bottom and clearly visible edges. The general condition with stomatitis, as a rule, does not suffer. But if the ulcers become deep and appear in large numbers, the body temperature may rise. Then an adult or child complains of general weakness, headaches. The lymph nodes on the neck and under the lower jaw increase in size and become painful. An unpleasant odor from the mouth may appear.

Types of stomatitis . Depending on the course of the disease, stomatitis can be acute or chronic. Acute stomatitis is usually defined as inflammation in the oral cavity that is detected for the first time. When the situation repeats itself over and over again, it may be a case of chronic recurrent stomatitis. As a rule, at first its symptoms are not very pronounced. There may be discomfort and dryness in the mouth, burning. Then an itchy blister or ulcer appears in the oral cavity, which gradually becomes painful. The pain intensifies when chewing hard food, drinking hot drinks and brushing teeth. In severe cases, it does not even allow drinking regular water. Then the wound heals, and the person forgets about the problem for a while.

The causes of inflammation in the oral cavity are not fully understood. Among those known to doctors, the most common are infection, trauma, or allergy.



Sometimes all three of these factors act simultaneously, or [infection](#) is superimposed on allergic or traumatic stomatitis. We will discuss these causes in more detail below.

The oral mucosa is damaged by very hot or rough food, poorly fitting dentures or chipped teeth. Traumatic stomatitis is a common occurrence in those who are used to constantly holding a pen or pencil in their mouth, biting their lips, cheeks or tongue. Signs of inflammation usually disappear within a few days.

Allergic stomatitis can be caused by medications, cosmetics, food products, and acrylic dentures (a type of plastic). Typical manifestations of allergy are redness of the oral mucosa and gums, itching, and burning.

The oral mucosa has different levels of protection against infection - it is resisted by saliva, immune cells, antibodies, enzymes. Various microorganisms take advantage of the weakening of this protection, causing inflammation and ulcers in the mouth.

Stomatitis is a frequent companion of colds and can occur simultaneously with a cold. or after some time. In the second case, the pathogens are most often herpes viruses. These viruses have a feature - they usually enter the body in childhood and remain there. When the immune system is weakened, there is a local injury, hypothermia or overheating, the viruses are activated and cause herpetic stomatitis. In this case, a rash appears in the mouth, consisting of small blisters. They burst, turning into aphthae, but soon heal, leaving no traces.

Bacteria usually worsen the course of stomatitis, which is caused by other reasons - trauma, viral infection or allergy. So, if plaque gets on the ulcer, its healing slows down, which can be used by bacteria that constantly live in the oral cavity. Bacteria play an important, although not the main role in the development of chronic inflammation. There may be few bacteria, but the immune system, which becomes very sensitive to microorganisms, begins to attack not only pathogens, but also healthy cells.

Fungi of the genus *Candida* are present in the oral cavity, which usually cause stomatitis when the immune system is weakened. Children, the elderly, pregnant women and people with diabetes are at risk. Oral candidal lesions often occur if a



person wears dentures or takes antibiotics without consulting a doctor. When infected with fungi of the genus *Candida*, white coatings similar to cottage cheese appear in the oral cavity and on the tongue. Pain when swallowing, burning and an unpleasant taste in the mouth are disturbing. *Candida biofilms albicans* develop in three stages. The first occurs within 1-11 hours: fungi attach to the surface within two hours, microcolonies appear after 3-4 hours to 11 hours. The second stage occurs within 12-30 hours. *Candida biofilms* appear as a bilayer consisting of yeast, germ tubes and young hyphae with an extracellular polymer matrix. The last stage is the maturation process, which occurs within 38-72 hours. Dietary habits can also affect the resistance of fungi in the biofilm to antifungal agents and the formation of biofilm on acrylic surfaces of dentures, promote more active formation of the extracellular matrix and metabolic activity. At the first signs of this disease, it is necessary to promptly [contact a specialist at a dental clinic](#). He will determine the severity of this disease and prescribe the correct treatment. When studying the dynamics of free-radical oxidation and lipid peroxidation in patients with recurrent aphthous stomatitis before treatment, an increase in the intensity of free-radical oxidation, progression of oxidative stress, and excessive accumulation of end products of lipid peroxidation were noted in all groups. After the complex therapy, the greatest positive changes in free-radical oxidation and lipid peroxidation were noted in the group of patients with recurrent aphthous stomatitis who received combined local and systemic treatment with hyaluronic acid-based drugs. If necessary, the doctor will suggest taking tests. There are several important rules for treating stomatitis:

1. It is necessary to change the toothbrush. The old one may contain traces of infection, and the fight against the disease may be ineffective. After the course is over, the previous toothbrush is also disposed of.
2. Rinse your mouth with antiseptic solutions several times a day, up to 6-7 times. This procedure will speed up the body's recovery.
3. Diet. Doctors recommend not to eat foods that irritate the oral mucosa. The best option would be food prepared with low acidity, salt and hot spices. Dishes with solid ingredients are postponed until the symptoms of the disease disappear.



Puree-like consistencies, broths, herbal teas, unsweetened compotes without berries are suitable.

A relevant and effective way to treat stomatitis in an adult on the tongue is the use of modern drugs. Any means for irrigating the throat, having a bactericidal, antiseptic effect, will give a positive effect.

Treatment of stomatitis with folk remedies

Folk remedies are a good addition to the main therapy. In order not to harm your health with home treatment, consult a doctor.

➤ Lubrication of rashes. Applying aloe or Kalanchoe juice with a tampon, lotions with rosehip, sea buckthorn, and tea tree oils.

➤ A decoction of oak bark or chamomile. Heals wounds and aphthae. Dissolve a tablespoon or a bag in a glass of boiling water, then cool and rinse, repeat 4-6 times a day.

➤ Propolis infusion. For rinsing, the alcohol solution is diluted with water 1:1, and can also be applied to ulcers.

➤ Salt/soda solution. Rinsing solution: 1 teaspoon of salt per 200 g of warm water (a pinch of soda).

Home treatment of stomatitis in adults lasts on average from 5 to 10 days. It is very important to stop the inflammatory process at the first stage, to prevent an increase in temperature and other complications.

In addition to local treatment, vitamin therapy is recommended to strengthen the immune system. It is not necessary to buy expensive drugs. Prepare a rosehip decoction, it is a storehouse of useful vitamins and minerals.

To treat mouth ulcers you can use:

- aloe or Kalanchoe juice – helps relieve inflammation;
- garlic – has a powerful bactericidal effect;
- rosehip oil, peach oil, linseed oil – reduce pain, accelerate epithelial regeneration;
- calendula tincture - in diluted form is used to disinfect the oral cavity;



- Chlorophyllipt oil solution is an extract from eucalyptus cones, which has a strong antibacterial effect;
- Boric valesin is a good epithelializing agent.

It is highly not recommended to cauterize wounds with concentrated hydrogen peroxide or brilliant green - this can lead to a burn of the mucous membrane.

The arsenal of home remedies for treating stomatitis in children is not that large. For infants, you can lubricate the wounds with a soda solution. For children over 6 years old, apply compresses of mashed raw vegetables (potatoes, carrots, cabbage). The gruel is wrapped in gauze or bandage and applied to the wound for half an hour.

What to rinse your mouth with for stomatitis?

The following are excellent for rinsing your mouth:

- natural decoctions of medicinal plants - chamomile, sage, succession, yarrow, burdock root;
- strong green tea – contains tannins and anti-inflammatory substances;
- soda solution - one teaspoon per glass of water is enough;
- alcohol tincture of propolis - the same dose per half glass of water;
- antiseptics from the pharmacy - miramistin, chlorhexidine.

In case of severe pain, itching and redness of the mucous membrane, rinsing should be done very often - 5-8 times a day. If the symptoms are minor, 3-4 times is enough. Decoctions should be at room temperature, hot liquid will further injure the mucous membrane.

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