



**MODERN VIEWS ON DENTAL, IMMUNO-MICROBIOLOGICAL
ASPECTS OF ORAL MUCOSA DAMAGE IN CHILDREN OF SMALL
SCHOOL AGE**

(Literature Review)

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Abstract

The article presents information about the immuno-microbiological changes in the oral cavity of children who underwent surgery for soft tissue injuries of the oral cavity at the age of small school, the levels of occurrence and treatment of dental diseases in them.

Keywords: oral soft tissue, injury, caries, gingivitis, periodontitis, treatment

Introduction

The oral cavity is called a mirror that reflects the general state of the body. It represents the initial section of the gastrointestinal tract (GI), where food is mechanically processed and the food pellet is formed. Like all parts of the OIT, the oral cavity has a mucous membrane, which is covered with a multi-layered flat epithelium [Galiullina E.F., 2006; Vlkova V. 2012].

It is known that the mucous membrane performs many functions, the main of which are protection, sensitivity, absorption and plastic functions. It is a unique selective semi-permeable barrier and has a high permeability for simultaneous absorption of various substances and drugs, but at the same time it is not considered permeable for most microorganisms [Babanina S.M. and raw materials. 2011].

The oral mucosa (OSH) contains a large number of receptors that are sensitive to various stimuli. It is considered a unique strong reflexogenic field and has a direct effect on the function of various departments in OIT [Kamilov, Kh.P. 2009; Kunin A.A. 2013].

According to the structure, it is possible to distinguish the epithelium, personal plate and submucosa base in OSHQ, where the thickness of these layers is different in different areas. There is no muscle plate between the private layer and the submucosal layer in the structure of OBSHQ, which is the main aspect that differs from the structure of other mucous layers in the body [Grigoryan A.A. 2013, Kolesnik K.A. 2019, Lutckaya IK 2014].





In the mucous membrane, the thickest epithelial layer is present on the hard palate, tongue and gums. The personal plate is most expressed on the lips, tongue and gums. The submucosal base is well expressed in the permeable layers and the bottom of the oral cavity [Dmitrieva L.A., Velijanina O.V. 2012].

Normally, the OSHQ is not rough and consists of basal and spinous layers on the lips, lungs, and soft palate. In pathological processes in the hard palate and gums, the epithelium can become roughened, so granular and hard layers appear in its structure [Gajva S.I., 2014].

The barrier properties of the mucous membrane are manifested in several processes: regeneration, cell differentiation and desquamation [Kamilov, Kh.P. 2009; Kunin A.A. 2013].

There are nerve fibers in the mucous membrane of the oral cavity, lips, lungs. It is associated with the central nervous system (CNS) and includes the trigeminal, vagus, facial, and glossopharyngeal nerves, afferent efferent fibers. Nerve fibers in the suction layer of the connective tissue plate form sub-epithelial bundles [Isanina S.V. 2020]. This package from networks free and encapsulated nerve fibers harvest will be of innervation above defined to himself special features mouth space mucus on the floor different injuries when observed expression pain syndrome surface to come explains [Dmitrieva L.A., 2012, Isanina S.V. 2020].

Mouth space mucus on the floor blood supply too one row to himself to properties has : blood carrier veins fenestrated to the epithelium , lung capillaries continuously to layer have Veins arterial flow marrow repeats . Lymphatic system of OSHQ binder tissue of teats at the ends starting lymphatic capillaries with manifestation will be They are blood carriers from the way go to the lymph since and bottom jaw lymph nodes through take goes and lymph nodes harvest does [Dmitrieva L.A., 2012, Isanina S.V. 2020 Kamilov Kh.P. , 2009].

So by doing blood with supply , innervation, lymph flow complicated structure in exchange for the OSHQ standard and in pathological conditions stimuli belonging to different species , they are antigenic stimulation answer reactions wide to the spectrum has [Mikhailovskaya V.P. and goods 2009].

The mucous membrane of the oral cavity is resistant to the effects of various mechanical, chemical and thermal factors. High regenerator ability , as well as infection relatively tolerance to him special is considered However the world according to total 3-5% of the population of the USSR different diseases occurs [Langle R.P. , 2010].

A as J. A. (2009) in the screening method take went to , ОБИИК 's inflammation diseases available , outpatient dental in treatment 15 years old and from him big 20333



people aged man participation reached studies the most a lot candidiasis (18.1%), chronic recurring aphthous stomatitis (15.7%), higher leukoplakia in frequency (11.6%) and geographical language (8.4%); more red flat Iron (1.85 %) stone that it is fixed confirmed [Levitsky A.P., 2008].

Gajva S. I. and h ammual . [2014] gave slightly different numbers of this pathology: among 468 patients in the Vladimir region, 4.8% had a diagnosis of red flat iron, 6.3% had leukoplakia, 3.6% had candidiasis, 5.1% had aphthous stomatitis, Geographic tongue was diagnosed in 2.8% and traumatic stomatitis in 2.3%.

According to the results of examination of 278 patients with OSHQ, Kharitonova M.P. and cargo. (2012) in 14.5% of cases, scarlet fever, 6.2% of leukoplakia, 4.5% of dysbiosis, 6.9% of aphthous stomatitis, 3.8% of traumatic stomatitis, 1.4% of lip diseases, In 1.4% of patients, it was detected a scaly ulcer, in 2.2% of salivary gland diseases, in 0.7% of herpetic stomatitis, and in 1.4% of tumors.

The cited statistical figures indicate the high prevalence of diseases in OSHQ, the presence of many nosological forms of them, as well as the need for timely and correct diagnosis, as well as the selection of monad etiological, pathogenetic and symptomatic treatment methods [Ulitsky S.B. 2008; Dmitrieva L.A., 2013].

As mentioned above, the mucous membrane of the mouth, which comes into contact with the external environment, is exposed to various effects that go beyond the physiological parameters. Both functional and structural changes occur under the influence of strong stimuli [Gileva O.S. 2017].

Ioranishvali A.K. [2012] classification distinguishes types of injuries: mechanical, physical, chemical and combined. The clinical presentation of different types of OBUTSh (traumatic stomatitis) depends on the duration and strength of exposure to the agent that damages the mucous membrane of the oral cavity, as well as on the general reactivity of the organism and local conditions [Kiseleva E.A., 2011].

Various injuries are divided into acute and chronic according to the mechanism of action and the nature of the course [Kamilov Kh.P. 2009; Kiseleva E.A., 2011]. Acute injury is caused by a single exposure to a short-term strong stimulus (injury from foreign bodies made of glass, plastic, bone, etc.), while chronic injury is associated with a weak but long-lasting stimulus (poor filling of teeth, caused by plate prosthesis injury, tooth defects in caries, etc.).

Paleri V. et al. [2010] studies show that ulcers are called "acute" if they persist for less than three weeks, and "chronic" if they persist for more than three weeks. Wounds of a traumatic nature can hide or appear as more serious diseases, therefore, for healing, the injurious agents should be identified and eliminated [Galiullina E.F., 2016].



Acute injuries are characterized by local defects of the mucous membrane of the oral cavity, which are manifested by bleeding in the injured area, swelling and pain, which increases during speech and eating [Delektorskaya V.V., 2013].

All injuries on the mucous membrane are manifested by secondary morphological elements: erosion and ulcers. Erosion is a small surface defect within the epithelial layer, the connective tissue base adjacent to the process is not involved [Dmitrieva L.A., 2012, Gileva O.S., 2017]. A wound is considered a deeper defect of the mucous membrane, spreading beyond the border of the epithelial layer to the adjacent tissues. Scar tissue consists of the bottom and edges of the wound, which usually contain granulation tissue with a tendency to scar. In any wound defects, there is a possibility of inflammation in the area of its bottom and edges, failure of reparative functions to varying degrees. When pathogenic microorganisms enter the wound, secondary infection can occur, which, in turn, can create conditions for long-term non-healing of the wound. Ulcers in OSHQ are formed as a result of any type of injury or against the background of autoimmune infectious diseases. Unlike erosions, due to the deeper nature of the defect, wound healing results in the formation of connective tissue. On the surface of erosion and wounds, dehydrated exudate, that is, the upper layer, is sometimes formed [De Rossi SS 2014 .].

It is a painful issue for not only dentists, but also doctors of other specialties, and it is considered an important part of OSHQ. The mucous membrane of the oral cavity and the red border of the lips, which are under the constant influence of external and internal factors, are the places where various diseases appear [Oleynik O.I., 2015; Aas JA 2015].

To date, there is no universally recognized, unified classification of OSA diseases, which can be explained not only by the lack of accurate knowledge of its etiology and pathogenesis, but also by the impossibility of systematizing many of the well-known diseases of this group according to a single, common sign for all diseases [Dmitrieva L.A., 2013; Krahl D. 2008].

Today, it was proposed in 1984 and compiled by etiological and pathogenetic factors, Borovsky E.V. and Mashkilleyson AL's classification has received the most recognition: traumatic injury as a result of injury, radiation, adverse conditions, exposure to chemicals; infectious diseases; allergic and toxic-allergic diseases; diseases with an autoimmune component of pathogenesis; skin-mucous reaction - red flat iron; changes in OShQ and KKG in exogenous intoxications; changes of OSHQ and KKG in pathologies of various organs; Congenital and genetic diseases in OSHQ; anticancer derivatives, positive quality and negative quality new derivatives.





The scheme of examination of children with traumatic stomatitis and OSH damage consists of traditional examination methods in OSH inflammatory diseases and consists of two stages [Dedova L.N., 2009 Sevbitov A.V. 2016; Zhang L., 2012]. The questionnaire consists of determining the complaints, the anamnesis of this disease and the patient's life anamnesis. The examination begins with a general examination of the patient, followed by an examination of the oral cavity, followed by palpation. By palpation, it is possible to evaluate the consistency, excitability, pain response, presence or absence of fluctuation, size and borders of the lesion. There are types of palpation, superficial and deep, outside and inside the mouth. Palpation begins from the side opposite to the site of injury (comparative palpation), mono- and bimanual palpation is distinguished [Babanina S.A.. 2011; Guakerzi, A. 2012].

Methods of additional research in children with traumatic stomatitis and traumatic lesions of OSHQ include the following specialized and laboratory research methods: general analysis of blood and glucose, general analysis of urine, allergological examination to detect bacterial allergies, skin samples with bacterial allergens, neutrophils in traumatic stomatitis the percentage of injury is higher than 10%, x-ray study of teeth, immunological study of blood to determine the foci of chronic infection, which is considered to be the cause of the body's susceptibility to the microbial factor. When there is a feeling of pain and discomfort in sick children, as well as a fear of oncology risk, it is necessary for the dentist to develop and study new methods of correct therapy of the consequences of injuries on the oral mucosa.

Application of a local wounding agent is considered a prerequisite for the treatment of oral cavity mucosal injuries [Grigoryan A.A., 2013, Saxena S., 2011]. In addition, in order to increase the effectiveness of the treatment, it is necessary to treat the wounds and the oral cavity with antiseptic solutions [Momen-Beitollahi J., 2010]. When there are necrotic tissues, they are removed mechanically under anesthesia or proteolytic enzymes are used. Infection non- erosion and wounds epithelialization enhancer preparations with with again is processed [Velijanina O.V. , 2013].

Anesthetizing OBSHQ for pain reliever structural to the part have anesthetic solution , mal h ams the name of the year . Such preparations include lidocaine, 2% solution of trimecaine , 5% ointment of piromecaine .

Proteolytic enzymes phagocytosis causes , bacteriostatic properties has hyaluronidase extinguishes , bacterial to toxins destructive effect comes and tissues regeneration increases . Traumatic erosion or the wound cleaning and him washing for solutions in the form of trypsin, chymotrypsin, chymopsin , deoxyribonuclease used [Velijanina O.V. , 2013, Kazarina L.N. , 2013, De Rossi SS , 2014].



Antiseptic again work secondary infection eliminate reach for take will go Antiseptic solutions as 0.06% solution of chlorhexidine , 0.25% solution of chloramine , 1% solution of hydrogen oxide , " Metrogyl "Denta " and " Mundizal " , " Tantum Verde" gels used [C uerkulov I.F. and cargo. 2019].

Mouth mucus on the floor injuries of treatment final stage epithelialization stir up is counted . This is it group of drugs effect epithelialization acceleration , mucus on the floor exchange processes to improve directed . For this purpose, vitamin A i and his synthetic analogues - retinoids and carotenoids used [Kang , JG , 2006, Yan , X. , 2008].

Pathological furnaces epithelialization acceleration for A vitamin i oil solution applications , karatolin , namatak oil is also effective . Succinate dehydrogenase v a cytochromoxidase of enzymes activation due to in tissues oxygen of utilization to increase in the blood unesterified fat of acids quantity to decrease take coming " Solcoseryl " from the drug to use dedicated in works (calves from the blood deproteinized extract), it damaged in tissues regeneration acceleration for successful used about data given . Epithelization stimulus for is poly unsaturated fat acids based on drugs are also effective [. Jia G , etc al . 2018].

Man mouth emptiness unique ecological is a system , in it microorganisms lives constant microflora harvest does This is the microflora of the mouth of emptiness normal homeostasis in storage plays an important role , immune system formation and development provides . Pathogen microorganisms by this of microflora to the violation reason will be

Mouth space mucus to the floor different factors effect does : mouth mucus floor anatomical and physiological condition ; pH, temperature , oxidation-reduction level mouth in the blanks processes ; mouth of liquid secretion and composition ; of the teeth h tool ; saliva break up level , chewing and swallow functions ; breast hygiene level of the body nonspecific resistance status

Each of the above factors affects the damage to the mucous membrane of the oral cavity. The qualitative and quantitative composition of various microflora helps to maintain the balance between the oral cavity and microbes. Various anomalies and defects of the teeth, caries processes, pathological periodontal pockets, badly worn prostheses lead to an increase in the number of microorganisms in the oral microflora. There are about 400 different strains of microorganisms in the oral cavity. Anaerobic microorganisms make up the main part of it (3/4 of all bacteria). Conditionally pathogenic microflora of the oral cavity also includes those in the mouth.

The number of bacteria in oral fluid is 43 million. from 5.5 billion varies up to 1 ml (average - 750 million 1 ml), plaque and gingival sulcus 200 billion per 1 g sample.



cell, 500 billion in 1 mg of plaque material. cell is present. With the development of gingivitis, the number of bacteria increases from 10 to 20 times. In this, gram-positive representatives of bacteria predominate, with a simultaneous increase in the number of bonds, there are forms of change of cocci to gram-negative anaerobes and cocci microflora to the rod form. Microflora is more diverse (*Fusobacterium spp*, *Bacteroides spp*, *Haemophilus influenzae*, *Campylobacter spp* and others accounted for 45%). Bacilli with Grammusbat microflora, mainly *Actinomyces naeslundii*, *Actinomyces viscus*, *Actinomyces israelii* accounted for 25%).

According to researchers, the leading etiological factor in inflammatory diseases is the periodontal tissue, the microflora of the dental plaque on the tooth surface, the areas of the gingival cavity (gram-positive and gram-negative cocci, bacilli and *Spirocheta*, *Bacteroides melaninogenicus*, *Actinomuces viscosus*, *Actinomuces naeslundii*). Inflammation in periodontal tissues occurs when the surfaces of the gums and teeth are colonized by facultative anaerobic bacteria.

Today, it has been proven that the body's immune system is in an integral relationship with all systems and organs, the activity of specific and non-specific protective factors, changes in general and local immune factors are of diagnostic and prognostic importance. Cellular and humoral immunity undergoes changes in many pathological conditions, including OSH. During inflammation, the concentration of the main proteins of humoral immunity - immunoglobulins (sIgA, IgA, IgM, IgG) in the oral fluid increases [Rabinovich I.M. 2012.].

Thus, when suffering from OBIuTSh, there is a change in the content of lysozyme, sIgA, IgA, IgM, IgG in the oral fluid, the titer of IgA, IgG depends on the level of oral cavity hygiene [Revyuk Yu.V. 2014].

Microbiocenosis based on evolution created ecological is an event . Mouth in the void microorganisms collection has been system known one in the biotope is available will be Quality and amount composition microorganisms known for one biotope relatively is stable . Such relative stability microorganisms adaptation with in the course of evolution developed in the biotope of life certain conditions connection will be Many authors consider the oral cavity as a biological system. Not only the level of microflora, but also the condition of balanced oral fluid and mucous membrane are included in the microbiocenosis of the internal environment of the mouth. There are various substances in the oral cavity, the types of microbes that are usually balanced depend on the condition of the body and the factor that harms it. It is known that normal flora is for microorganism " biological barrier ", pathogenic flora growth prevention takes [Kharitonova M.P. 2012.].



From this except this proven food digestion making , metabolism, vitamins synthesis in processes participation is enough In general when , mouth in the void up to 300 - 400 types of microorganisms types determined . Mouth empty i g'i of microbiocenosis main structural from the parts one mouth is a liquid . In it to himself special didn't happen of factors content of the organism resistance his to microbes against features determines [Sedneva Ya.Yu., Pashkova G.S. 2018].

Mouth of liquid features and of the body status between dependence learning some somatic in diseases of saliva content changes it was determined . Inflammation processes note done traumatic stomatitis quality and quantitative changes with together comes , mouth of liquid nonspecific and secretary protection indicators will change . It is known that the main etiological factor of the development of OBITS depends on the microbes assigned by many researchers [Jia G, et al. 2018].

The study of the pathogenic properties of microorganisms living in the oral cavity revealed three main factors: survival in the biotope environment, invasiveness and production of lytic enzymes. Bacteria through the membrane cell to vacuoles , then and enters the cytoplasm . It is carried out by penetration of microorganisms through the cell membrane. This reason creates a multi-link chain of the exacerbation of traumatic stomatitis [Sedneva Ya.Yu., Pashkova G.S. 2018].

Lately, the concept of cytokines has been widely used in medical sciences, destructive processes appear in periodontal tissues, which confirm the immunological aspect of the development of inflammation. In the development of the immune response, cytokines play the role of mediators of intercellular interactions. When studying the spectrum of cytokines in patients with chronic traumatic processes, inflammation of the periodontal and mucous membranes, a 4-fold increase in the content of IL-1 (anti-inflammatory cytokine) in the periodontal pocket compared to healthy donors, and the level of cytokine IL-4 (anti-inflammatory cytokine) in patients in children was comparable to healthy people. in Aganda is much lower [Jarczak, J. 2013].

Pathological changes, changes in the composition and properties of microflora, disrupting its functions with the development of OBYUTSh. Disruption of the normal balance in the oral microflora is called dysbacteriosis of microorganisms. Microbiocenoses of different biotopes of the body represented by dysbacteriosis, anaerobes - aerobes, changes in infrastructure relations of populations, changes in the abundance and composition of microbial species in different biotopes; is a change in their metabolic folly. Taking into account disturbances in the normal balance of microorganisms as dysbacteriosis in the etiology and pathogenesis of many pathological conditions, inflammatory diseases are an important etiological factor and pathogenetic connection in many [V.P. Mikhaylovskaya et al. 2009].





Thus, a detailed study of the clinical and immunological aspects of oral mucosal lesions, clarifying the pathogenetic features of the disease based on them, and recommending ways to increase the effectiveness of treatment are still relevant and necessary today.

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