



Batig V.M.

SIMULATION OF EXPERIMENTAL PERIODONTITIS USING PATHOGEN SOLUTIONS

*Department of Therapeutic Dentistry
Bukovinian State Medical University*

According to the literature in the development of periodontal disease an important place is occupied by the endogenous microflora of the oral cavity. This microflora also has a significant pathogenic effect on the nervous system of the oral cavity. The pathogenic action of bacteria is realized due to toxins, among which the most active was lipopolysaccharide.

The aim of this series of studies was to determine the possibility of reproduction of experimental periodontitis by injection into the gums of solutions of the following pathogens: LPS, hyaluronidase and trypsin. The drugs were used in the form of solutions of 0.9% NaCl LPS (1 mg / ml), hyaluronidase (2 mg / ml) and trypsin (5 mg / ml), which were injected into the gums in the molar area in an amount of 0.2 ml per rat.

A periodontal study of neuromodulators was performed on white Wistar rats (45 rats in total). After 30 days, rats were euthanized under thiopental anesthesia (20 mg / kg) by total cardiac bleeding. The mucous membrane was isolated, in the homogenate of which the level of biochemical markers of inflammation was determined: elastase activity and malonic dialdehyde content, urease activity (bacterial contamination index), lysozyme activity (indicator of nonspecific immunity), antioxidant enzyme activity.

Previous experiments have shown that significant pathological manifestations of pathogens are detected after 3 hours. The activity of the proteolytic enzyme elastase was chosen as an indicator of inflammation.

The results of a comparative study of the effect of three pathogens (LPS, hyaluronidase and trypsin) on the activity of elastase in different tissues (gums, tooth pulp, serum and gastric mucosa). From the obtained data it is seen that hyaluronidase has the greatest pro-inflammatory effect. After recalculating the magnitude of the increase in elastase activity per 1 mg of pathogen, it was found that hyaluronidase is more effective when acting on the gums, tooth pulp and serum.

The results of this series of experiments became the basis for the use of the hyaluronidase model of experimental periodontitis. The proinflammatory activity of hyaluronidase exceeds the proteolytic enzyme trypsin and even intestinal endotoxin lipopolysaccharide.

Bernik N.V.

INFECTIOUS-INFLAMMATORY COMPLICATIONS IN THE ORAL CAVITY AFTER ORAL SURGERY

*Department of Surgical Dentistry and Maxillofacial Surgery
Bukovinian State Medical University*

Disorders of quantitative and qualitative microscopic flora content, that is, microbe biotic community of the oral cavity and colonization with pathogenic microorganisms, cause inhibition of the body immune reactivity, promote occurrence of infectious-inflammatory complications, and become one of the important reasons of their development.

Objective of the work is to study the mechanisms of development of infectious-inflammatory complications in the oral cavity after oral surgery in order to improve their treatment and prevention. 81 patients, aged from 20 to 65, were examined. They were prepared for out-patient surgery in the oral cavity and distributed into three groups according to the types of surgery performed: the 1st group included 27 patients waiting for dental implants, the 2nd group - 28 patients with retention and dystopia of the third lower molar, the 3rd group - 26 patients with radicular cystogranuloma. Before surgery all the patients underwent examination of their immune status in the oral cavity by means of flow cytometry with monoclonal antibodies on the laser cytofluorometer Epics XL-MCL (Coulter, France), microscopic flora of the mucous membrane in the area to insert dental implant and other surgeries in the oral cavity. Isolated cultures of bacteria were identified in order to examine their quantitative and qualitative content.



The results of the investigations demonstrated that alternations of microbial background were found in all the three groups of patients prepared for out-patient surgery in the oral cavity. The following stabilizing and periodontal pathogenic flora was found: *Prevotella intermedia* (2,0+0,19; 5,7+0,21; 3,7+0,20), *Fusobacterium* spp (2,7+0,20; 5,6+0,19; B 4,6+0,20) respectively. Moreover, *Actinomyces* spp. (3,7+0,21) were found in patients from the 2nd group with retention and dystopia of the third lower molar.

Examination of microbe biotic community in the oral cavity demonstrate periodontal pathogenic flora available, which determined the necessity to initiate pre-surgical antibiotic preventive therapy of possible infectious-inflammatory complications in case of out-patient dental surgery. Investigation of the immune status in the groups of the study found decreased immune reactivity of the body in 58,1% of patients and normal immune reactivity - in 40,9% of patients. Examination of the absolute and relative amount of T-lymphocytes, T-helpers, T-suppressors and immune regulating index (IRI) in patients prepared for oral surgery found statistically reliable difference of parameters in the groups with decreased immune reactivity of the body and normal immune reactivity. The content of CD3 was 57,6+3,5 and 69,4+1,8; CD - 29,2+1,4 and 41,9+1,2; CD8 - 31,9+2,3 and 30,2+2,9; CD4/CD8 - 1,1+0,1 and 1,52+0, respectively. The levels of immunoglobulins A, M, G did not differ. The results of the study performed are indicative of the fact that patients with decreased immune reactivity of the body prepared for oral surgery in addition to antibiotics in order to prevent infectious-inflammatory complications before surgery should take immunotropic medications as well.

Periodontal pathogenic flora and decreased immune reactivity are determining factors promoting development of infectious-inflammatory complications in the oral cavity in patients prepared for out-patient dental surgery. In addition to antibiotic prevention of infectious-inflammatory complications before surgery in the oral cavity the drugs with immunotropic effect should be prescribed for patients prepared for out-patient dental surgery.

Dmytrenko R.R.

MORPHOGENES OF THE BONES OF SKULL BASE AT AN EARLY PERIOD OF HUMAN ONTOGENESIS

*Department of surgical dentistry and maxillofacial surgery
Bukovinian state medical university*

The aim is to find out the chronological sequence of appearance of germs and peculiarities of development of bones of the skull base at an early period of human ontogenesis.

17 series of consecutive histological sections of specimens of embryos and prefetuses aged from 4 till 12 weeks of intrauterine development (IUD) using a complex methods of morphological examination (anthropometry, morphometry, histological sections, three-dimensional computer reconstruction) were studied.

Chondrification of the ectomeningeal capsule begins in the 7th week of IUD (prefetuses 14.0-16.0 mm of parieto-coccygeal length (PCL)) and there are 3 pairs of cartilaginous sources of the bones of the skull base: parachordal cartilage (behind the pituitary gland); pituitary cartilage (on both sides of the pituitary gland); prechordal cartilage (in front of the pituitary gland) are defined. The bones of the skull base are formed as a result of endochondral osteogenesis, while most skull bones are characterized by membranous osteogenesis. At the 8th week of IUD chondrocranium is defined as a holistic structure, continuous with the anlage of the skull, so the morphogenesis of some skull bones is both cartilaginous and membranous. The first of the cartilaginous anlages of the skull base was found parachordal cartilage behind the pituitary gland. Pituitary cartilages are formed around the rudiment of the pituitary gland. Laterally, the centers of chondrification occur in the anlage of orbitosphenoidal cartilages, which are the sources of the development of small alars of the sphenoid bone. The alar-sphenoidal cartilages are the sources of the large alars of the sphenoid bone. The anterolateral process of the orbitosphenoidal cartilage occurs near the orbital part of the anlage of the frontal bone. At the 7th weeks of IUD, the skull base contains separate foci of