

медицинской. Согласно законодательству, лечение военнослужащих, протезирование, получение лекарств и оздоровления в специализированных учреждениях происходит бесплатно. Законом предусмотрено, что после окончания основного курса лечения ветераны антитеррористической операции могут пройти бесплатный оздоровительный и профилактический курс в санатории, или получить компенсацию за него. Как считают специалисты, послевоенные симптомы, со временем имеют особенность усиливаться, поэтому все комбатанты требуют восстановления психологических резервов организма. Ведь первичный стресс, полученный во время боевых действий, усиливается вторичным, который возникает после возвращения домой. Главным учреждением в общей структуре медицинских учреждений по организации медицинской помощи ветеранам есть госпиталь в с. Цибли, деятельность которого находится под патронатом Президента Украины. Перечень санаторно-курортных учреждений для участников АТО и лиц с инвалидностью насчитывает 85 заведений, среди которых 8 расположены в Полтавской области.

Ключевые слова: вторичная медицинская помощь, участники боевых действий, санаторно-курортное лечение, участники АТО.

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In accordance with the law, treatment of military personnel, prosthetics, medication and rehabilitation in specialized institutions are free of charge. The law stipulates that after the end of the basic course of treatment, veterans of the anti-terrorist operation can undergo a free health-improving and preventive course in the sanatorium, or receive compensation for it. According to experts, post-war symptoms tend to intensify over time, so all combatants need to restore the body's psychological reserves. After all, the primary stress received during the combat actions is exacerbated by the secondary stress that occurs after returning home. The main institution in the general structure of medical institutions for the organization of medical assistance to veterans is a hospital in the village Tsybli, whose activity is under the patronage of the President of Ukraine. The list of sanatorium-and-spa institutions for ATO participants and persons with disabilities includes 85 institutions, among which 8 are located in the Poltava region.

Keywords: secondary medical care, combat veterans, sanatorium-and-spa treatment, participants of the anti-terrorist operation.

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N.O. Gevkaliuk, V.R. Machogan

I. Horbachevsky Ternopil National Medical University, Ternopil

FEATURES OF THE ALVEOLAR BONE MUCOUS MEMBRANE CELLULAR COMPOSITION RESTRUCTURING IN CASE OF PREMATURE LOSS OF TEETH

e-mail: gevkalyuk@tdmu.edu.ua

The fundamental work of orthopedic dentistry is devoted to solving the problems of increasing the functional effectiveness of prostheses in patients with partial and complete loss of teeth, however, in case of adverse anatomical and physiological conditions prosthetics of toothless jaws with laminar removable dentures is not always effective and requires prediction. The article provides a detailed description of the study of the cellular composition of smears-scrapings of cytograms of the alveolar processes of patients with premature loss of teeth, makes it possible to predict atrophic processes and complications associated with correction.

Key words: cell, atrophy, prosthetics, gum, partial adentia.

The work is a fragment of the research project "The study of metabolic homeostasis of the body in diseases of the organs of the oral cavity in people of different ages and the optimization of their treatment and prevention", state registration number 0116U004146 and "Pathogenetic features of complex treatment of periodontal tissue diseases on the background of concomitant somatic diseases", state registration number 0119U002430.

A significant part of humanity at a certain stage of life is faced with the need to restore dentitions with removable dentures. The need for removable prosthetics ranges from 5% (between the ages of 20 and 40) to 80% in the older age groups [9, 12]. At the same time, a serious problem in prosthetics of such patients is the insufficient functional activity of the salivary glands, the essence of which is a violation of the adaptation processes and an increase in the time of getting used to removable dentures [12, 14]. Two mechanisms of reducing adaptation to prostheses with dry oral mucosa are considered: violation of oral homeostasis and delayed keratinization of the mucous membrane of the prosthetic bed [13].

It is known that homeostasis of the oral cavity is determined by many factors, primarily the functional activity of the salivary glands, the composition of the oral fluid, the condition of the mucous membrane [8]. In this case, homeostasis disorders during prosthetics of patients with hyposalivation should be considered as an interrelated process: on the one hand, hyposalivation causes insufficient mediator activity of protective mechanisms and dry mucous membranes, and on the other hand, the prosthesis itself reduces the function of the salivary glands. The prevalence of hyposalivation in the adult population is quite high: from 10% at a young age to 40% at the age of 50-65 years [12]. The etiology is diverse. The latter leads to the fact that people especially in old age, suffer from intolerance to removable dentures and

need additional prognostic research methods at the stage of prosthetics and measures to correct the functional activity of the salivary glands [15].

It has been established that most often early loss of teeth is caused by periodontal tissue diseases that arose against the background of pathology of the endocrine, cardiovascular, digestive system, etc. [5, 6, 10]. More than 60% of these patients require prosthetics with full removable laminar dentures. Modern literature data show that the prevalence of generalized periodontitis among the population of Ukraine is 80%, and in people older than 40 years pathological changes in periodontal tissues are found, which is subsequently a leading cause of early loss of teeth [7, 8]. This problem further requires a professional approach with an adequate selection of orthopedic design with maximum restoration of masticatory effectiveness.

The fundamental work of orthopedic dentistry is devoted to solving the problems of increasing the functional effectiveness of prostheses in patients with complete loss of teeth however, in the case of adverse anatomical and physiological conditions prosthetics of the toothless jaws with full removable laminar dentures is not always effective. Thus, the study of the cellular composition of the gums of the edentulous jaws will make it possible to predict atrophic processes and complications associated with the correction of prostheses.

The purpose of the study was to characterize the cellular composition of the mucous membrane of the alveolar bone in patients with premature loss of teeth.

Materials and methods. A cytological study of the alveolar ridge was carried out by collecting material from patients by scraping. Subsequently, the collected material was transferred to a sterile glass slide and smears were dried with open air for 2–3 min, followed by coloring of the obtained material according to the Romanovsky – Giemsa method.

The number of epithelial cells and the degree of their maturation in five fields of vision were counted. The criteria for assessing the cytological picture were the following quantitative and qualitative indicators:

- type cells and their ratio in the product;
- presence and number of cells with signs of destruction;
- the presence of cells and the intensity of microbial contamination;
- presence and number of connective tissue cells (erythrocytes and leukocytes);
- the presence of cells with signs of irritation;
- the presence of cytoplasmic inclusions;
- intensity of cytoplasm and nucleus staining;
- the degree of severity and clarity of the contours of the cytoplasm and nucleus;
- tinctorial properties and characteristics of the nucleus and the conservation of intranuclear structures.

Indicators were calculated per 100 epitheliocytes. The obtained absolute values were recorded in the study results.

Quantitative indicators of epithelial cells were determined by counting cellular elements in 5 fields of view, while the number was recorded in absolute numbers and average values were determined. The latter were used in determining the percentage of various classes of epithelial cells to establish the norm, taking into account age and gender. Analysis of cytograms was carried out using a microscope "Micros-50" (Austria), using a magnification of 1000.

Microscopic and morphological analysis of qualitative parameters was carried out taking into account the maturation of cells of the stratified squamous epithelium in normal conditions and with changes in periodontal tissues.

Results of the study and their discussion. The results of a cytological study assessed the degree of maturation of the stratified squamous epithelium of the alveolar process in the region of missing teeth, which made it possible to ascertain the presence of single basal, parabasal, intermediate and surface cells, and in the areas to be keratinized - corneous scales.

The single parabasal cells were mostly oval in shape and of relatively small size. The cytoplasm is slightly basophilic, forms elongated areas, vesicular nucleus with fine scattered chromatin. Intermediate epitheliocytes are characterized by a number of differences and, by cytological organization, reflect regional features of the anatomic region.

Cell shape is mostly irregular, cytoplasm is weakly basophilic, rarely eosinophilic, with well-rounded or oval nuclei. Chromatin condensation is lower compared to identical class of buccal epithelial cells. The plasmolemma of cells has numerous wrapped edges, the shape of the cells is usually elongated. In the cytoplasm of intermediate gingival epithelial cells, normal glycogen is mostly absent or its quantity

is determined, which confirms a number of scientific claims about the role of glycogen as an energy source or plastic material for the synthesis of keratogialin protein.

This explains its intensive cost, and, as a consequence, difficulties in histochemical identification in areas of the oral mucosa in which the epithelium is subject to keratinization, namely in the gums. This is confirmed by the results of the experiments of precursors [2], studies using as a dye NST-test with a coloring mixture of Schiff reagent and iodic acid. At the same time, the cytoplasm of epithelial cells is characterized by a lack of color during the SJC reaction, which indicates the absence of Niiglycogen, while the nuclei are hyperchromic and NST granules are preserved.

The obtained own data and cytochemical features [2] comprehensively characterize the cytological affiliation of this class of cells and confirm the phased keratinization of this anatomical region. In this case, surface eosinophilic cells on cytological preparations had a hexagonal or rectangular shape, eosinophilic filaments or single eosinophilic granules were visualized in the cytoplasm. Depending on the configuration of plasmolemma, the nucleus was oval or ovoid. In some cells, the nucleus is shrunken, with filamentous structures having a clearer configuration. Azur-positive (basophilic) epitheliocytes were visualized along with eosinophilic surface cells. The latter had a pronounced plasmolemma, which was characterized by a usuated surface. The nucleus of the basophilic epitheliocytes is rounded cytoplasm is characterized by the presence of small azure-positive granules containing glycogenic inclusions. Unlike superficial eosinophilic cells in the cytoplasm, filamentous structures are clearly expressed. In single cells, they are located around the nucleus, and in others - between its apical and basal margin. In those cases when the perinuclear arrangement of tonofilaments is determined, azure-positive inclusions are found in individual sections of the cytoplasm. At the same time, intermediate basophilic (azure-positive) cells, in contrast to surface ones, have a different form of plasmolemma - from polygonal to spindle-shaped and eccentrically located nucleus and, according to V. L. Bykov correspond to parabasal cells. The latter is a prognostic indicator of the development of the atrophic process in the epithelium of the alveolar process. The data obtained are completely consistent with the results of the work of contemporaries regarding the peculiarities of the alteration of the mucous membrane of the alveolar process under conditions of premature loss of teeth (fig. 1).

Along with basophilic azure-positive surface epithelial cells, in the examined patient population in norm there are constantly observed surface eosinophilic epithelial cells, a characteristic feature of which, unlike basophilic cells, is the presence in the cytoplasm of different sizes of eosinophilic granules, which are diffusely arranged around the nucleus, which occupies a concentric arrangement relative to the cytoplasm, or at one of the poles of the cytoplasm with an eccentric arrangement of the nucleus. The cytoplasm of these cells prevails over the nucleus content. Individual cells having an eccentrically located nucleus contain homogeneous eosinophilic masses throughout the cytoplasm. It is obvious that the different content of both eosinophilic granules and homogeneous eosinophilic structures cause the main process of keratinization of epitheliocytes, which is characterized in superficial cells by the appearance of the horny substance keratogialin. It is the latter that has the property of eosin staining, and therefore this position, the presence and eccentric location of this substance should be regarded as phenomena of physiological keratinization of the gums (fig. 2).

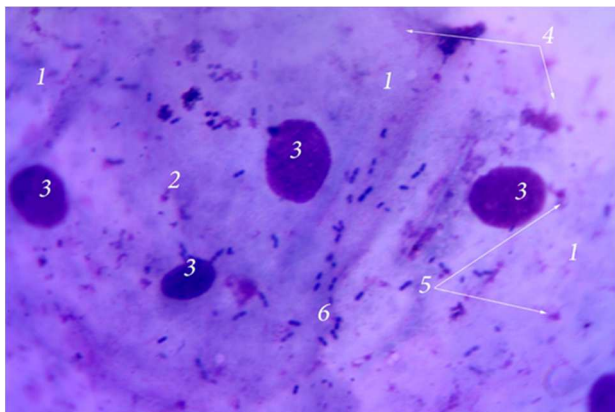


Fig. 1. Cytogram of the mucous membrane of the alveolar process. Romanovsky – Giemsa coloring. Coll.: Ob. x 100, approx. x 10: 1. intermediate epitheliocyte; 2. superficial epitheliocyte; 3. cell nucleus; 4. weakly basophilic cytoplasm; 5. single azure-positive granules; 6. microflora.

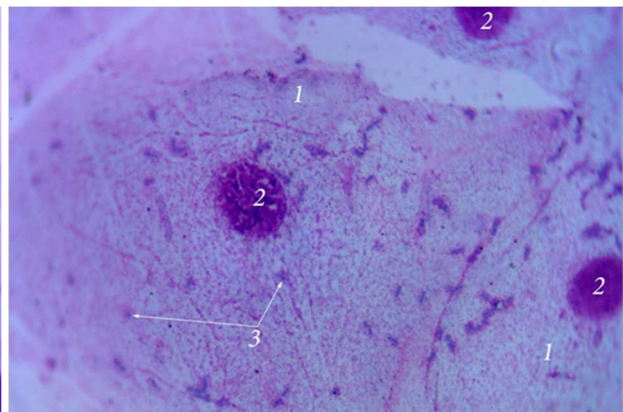


Fig. 2. Cytogram of the mucous membrane of the alveolar process. Romanovsky – Giemsa coloring. Coll.: Ob. x 100, approx. x 10: 1. superficial epitheliocyte; 2. cell nucleus; 3. eosinophilic granules.

Therefore, this cytogram indicates a phased process of keratinization, starting with basophilic and eosinophilic surface cells.

It should be noted that in the process of physiological keratinization occur phenomena of parakeratosis in the form of appearance in the cytoplasm of epitheliocytes eosinophilic granules, with the subsequent formation of horny scales.

Of particular interest in the cytogram of the gums of the examined contingent of individuals is the intensity of microbial contamination on the surface as intermediate and superficial epithelial cells. Colonization ability in dynamics creates the prerequisites for attracting prosthetic bed tissues to inflammatory, under the influence of the microbial factor. On the other hand, the penetration of microorganisms leads to the formation in the tissues of a complex of highly active compounds - cytokines, which are able to modify the activity of polymorphonuclear leukocytes and reduce their specific bactericidal properties. Cytokines not only adversely affect periodontal tissues, but also cause further activation of the synthesized cells.

The cytostructure of horny scales in the examined contingent of individuals is stereotypical with respect to horny scales of this anatomical region. The scales predominantly had a hexagonal shape, the cytoplasm is usually weakly basophilic, with a centric arrangement of the contours of the nucleus lost in the process of differentiation of the epithelial cell. The perinuclear space is surrounded by tonofilament inclusions that form a mesh structure. Keratogialin granules are stored. As shown by studies of smear-scraping, along with numerous horny scales found single basophilic azure-positive epithelial cells. Although these cells are normally found relatively infrequently along with eosinophils, it is clear that they should be characterized as reserve cells for further epithelial proliferation.

The peculiarity of the cellular composition of the individuals of this contingent is clear, is the appearance among intermediate epitheliocytes of cells with manifestations of necrobiosis.

They are reduced in size due to a decrease in the volume of the cytoplasm, compared with stereotypical intermediate epithelial cells, the nuclei are partially or completely lysed, sometimes optically in light with scattered chromatin lumps. The cytoplasm has a foamy organization. A feature of cytograms is the presence of segmented white blood cells, some of which are lysed and concentrated along the periphery of epithelial clusters. Also, cells with signs of irritation and dystrophy are indicators of pathological displacement in the characterization of cytograms of the gingival epithelium under conditions of premature tooth loss.

The qualitative cellular composition of cytograms indicates possible directions for further pathomorphological changes in the oral mucosa towards atrophy.

As a result of our cytological studies we can see a clear tendency to atrophy and its progression, depending on the period of teeth extraction. It is possible to increase the pathogenicity of the oral flora in this patient population due to the activation of opportunistic microorganisms, in the future it can lead to an increase in the intensity of the carious process and its complications, as well as a decrease in the functional activity of large salivary glands and promote active adhesion of the pathogenic flora.

The results of our studies coincide with the studies of V. Bykov [1], regarding ideas about the structure of the cellular composition of the oral mucosa and are closely interwoven with the developments of Hasiuk N.V. and Eroshenko G.A., which, based on the study of the cellular composition and the results of histological examination, prove that in the process of chronic inflammatory process in the gums increases the number of parabasal cells containing glycogen [2, 3, 4].

The results are consistent with the data of Vander Potten G. J, Brand H. S, Schols JM, de Baat C., and Karimbux NY, Saraiya VM, Elangovan S, who consider the mucosal epithelial cells as factors that constitutively express, and when activated, they increase the secretion of pro-inflammatory cytokines, chemokines, growth, differentiation and hematopoietic factors, endothelin and other peptide mediators, inhibitors of pro-inflammatory agents, cytokine receptors, molecules of the main histocompatibility complex and intercellular interactions. The given cytospecific properties provide the possibility of interaction and cooperation of epithelial cells with "professional" inducers and effectors of inflammation and immunity. This is due to the fact that, being targeted by exogenous and endogenous factors, epithelial cells are able to change their functional status, including in the formation of vicious circles that support chronic pathology in the oral mucosa system [15].

Conclusion

The indicated characteristic cytological picture of gum epithelial cells smear-scrapings can be used for diagnostic and prognostic assessment at the stage of prosthetics for patients with loss of teeth, and the dynamics of changes in the oral cavity at the stage of getting used to removable laminar dentures and checking the effectiveness of the treatment and preventive measures and ways to correct them.

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Реферати

**ОСОБЛИВОСТІ ПЕРЕБУДОВИ КЛІТИННОГО
СКЛАДУ СЛИЗОВОЇ ОБОЛОНКИ
АЛЬВЕОЛЯРНОГО ВІДРОСТКА
ЗА УМОВИ ПЕРЕДЧАСНОЇ ВТРАТИ ЗУБІВ
Гевкалюк Н.О., Мачоган В.Р.**

Вирішенню питань підвищення функціональної ефективності протезів у пацієнтів із частковою та повною втратою зубів присвячені фундаментальні роботи ортопедичної стоматології, однак у випадку несприятливих анатомо-фізіологічних умов, протезування беззубих щелеп пластинковими знімними протезами не завжди є ефективним та потребує прогнозування. В статті наведена детальна характеристика дослідження клітинного складу мазків-зішкрябів цитогам альвеолярних відростків пацієнтів із передчасною втратою зубів, що дає можливість прогнозування атрофічних процесів і ускладнень, пов'язаних з корекцією.

Ключові слова: клітина, атрофія, протезування, ясна, часткова адентія.

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**ОСОБЕННОСТИ ПЕРЕСТРОЙКИ КЛЕТЧНОГО
СОСТАВА СЛИЗИСТОЙ ОБОЛОЧКИ
АЛЬВЕОЛЯРНОГО ОТРОСТКА
ПРИ ПРЕЖДЕВРЕМЕННОЙ ПОТЕРЕ ЗУБОВ
Гевкалюк Н.А., Мачоган В.Р.**

Решению вопросов повышения функциональной эффективности протезов у пациентов с частичной и полной потерей зубов посвящены фундаментальные работы ортопедической стоматологии, однако в случае неблагоприятных анатомо-физиологических условий, протезирование беззубых челюстей пластиночными съемными протезами не всегда является эффективным и требует прогнозирования. В статье приведена подробная характеристика исследования клеточного состава мазков-соскобов цитогам альвеолярных отростков пациентов с преждевременной потерей зубов, что дает возможность прогнозирования атрофических процессов и осложнений, связанных с коррекцией.

Ключевые слова: клетка, атрофия, протезирование, конечно, частичная адентия.

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