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Inhaber: Marina Kisiliuk
Tel.: + 49 51519191533
Fax.:+ 49 5151 919 2560
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Chefredakeur/Editor-in-chief:
Marina Kisiliuk
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Fochuk P.,
Vice-rector (science and international cooperation), Inorganic Chemistry Department, Yu. Fed'kovych Chernivtsi National University, Chernivtsi, Ukraine
Kasiyanchuk M.,
Department of Prosthetic Dentistry, Higher State Educational Institution of Ukraine "Bukovinian State Medical University", Private Specialized Medical Practice, Chernivtsi, Ukraine
Kasiyanchuk R.,
Department of Molecular Genetics and Biotechnology, Yu. Fed'kovych Chernivtsi National University, Private Specialized Medical Practice, Chernivtsi, Ukraine
Kramer B.
Private Specialized Medical Practice, Meppen, Germany

MORPHOLOGICAL BACKGROUND SAVING OPPORTUNITIES FOR ADAPTIVE SOFT TISSUE TO THE SECOND STAGE OF DENTAL IMPLANTATION

Abstract. *Morphological analysis of clinical and anatomical structures pryimplantatnyh zones after dental implantation compared with neutral zones with a detailed study of soft tissue in the area of the periosteum. Established efficacy own methods of conservation of tested material in a clinical setting (patent №40621). Grounded account of morphological features of alveolar bone structure of the jaw to preserve soft tissue adaptive capacity in the second phase of dental implantation.*
Key words: *dental implants, implants-gingival pocket, teeth-gingival pocket, protetyka gingival tissues.*

Introduction. According to the literature loss or change architectonics anatomical structures in the area at Mucosa periosteum, periosteal injury is commonplace (J. Zoeller, 2006, 2015; R. Ewers, M. Nevins, 2016) A significant loss of tissue volume required more complex surgical intervention, and sometimes additional tissue augmentation and sufficiently high qualification of doctor [1-3]. Atrophic changes of anatomical structures found in 30-35% of cases [3-6]. Although prosthetic rehabilitation patients to date in 86.1% of cases of tooth loss appropriate use of dental implants of different options, but the use of standardized methods on implant does not always meet patients [2-5]. The use of internal bone dental implants not in all cases lead to sustainable success guaranteed. Unsatisfactory results according to various authors range from 7 to 50% (Zoeller J., 20013, Pyuryk VP Prots GB, 2008; Buser D., 2007; Ewers R. 2016 and others.). There are diagnostic tests as success criteria (risk) dental implant to some extent subjective, and are used to finding already peryimplantatnoyi progression of bone loss or are outdated (OV Pavlenko, 2015). Formation pryimplantatnyh gingival tissue is considered by scientists in terms depending on the surface structure implantatnyh components and compared with the intact tooth-gingival structure (tooth-gingival cleft) [5-7]. But the difficulty of diagnosis morphology of tissue structures in medical practice in specific clinical situations leads to the introduction of new diagnostic techniques [7-10]. Therefore, the scientist is an urgent search for alternative known methods of diagnosis (examination) protetyky and gingival structures in terms atrophy and remodeling of bone and gingival tissue jaws, with no security of commonly accepted approach to the problem [2, 10]. For practitioners topical analysis of known knowledge of anatomy, morphology, physiology and biology surrounding implant tissue structures, search for clues to the processes of healing tissue adaptation and operation of artificial supports in the mouth (Zoeller J., 2013,2015; Pyuryk VP ., Prots G. et al. 2008; Buser D., 2007, 2016, 2014,. 2003).

We believe that the dental clinic one way to optimize diagnostic methods at Mucosa-periosteal injury is the use and improvement of morphological and visualizing techniques, which will open new opportunities improving the quality of patients [3, 7, 10].

Objective: in connection with the above objective of this research is to study morphological features of alveolar bone structure of the jaw to preserve soft tissue adaptive capacity in the second phase of dental implantation. Proposal mode imaging in clinical research and method of saving the test material for possible use of research results in dentistry.

Material and methods. To achieve this goal we have developed, implemented and patented in Ukraine, (Pat. Number 97953), the applicant Bukovina State Medical University) own method of preserving tissues (Figure 1) obtained in terms of dental medical practice through the use of containers as polymeric capsules antydeformatsiynymy tubular shape with edges of chemically inert sterile internal environment [16-19].

In order to monitor structures in the anatomical features of the test site in the skeleton Mucosa-periosteal injury, we used one of visualizing techniques - radioviziohrafiyu on the basis of a single crystal of Cd (Zn) What (Fig. 2) [16-19].

Fig. 1. Container antydeformatsiynymy tubular shape with edges of chemically inert sterile internal environment

Fig. 2. Experimental version of the sensor viziohrafa (Based on single crystal Cd (Zn) Te)

In the study sample was 42 patients after surgery, which examined during 2011-2016 years at the Private Specialized Medical Practice, Chernivtsi, Ukraine and Private Specialized Medical Practice, Meppen, Germany. Man-woman ratio amounted to 1:2, the average age of patients 43,0 ± 4,7 years. Used deskryptyv¬nyy study design with the requirements of biomedical ethics (informed consent). Patients were divided into 2 groups: the group I (10 patients) included patients who performed the operation (root implant). To the second group included 10 patients who performed tissue augmentation in the area of alveolar bone in the area of intact teeth. Patients in both groups were examined by standard procedures. The criteria of exclusion, poor oral hygiene, diabetes, Allergic status, blood diseases, cancer.

We analyzed radioviziohrafichni photos (42 clinical cases) after the dental implants will continue with detailed histological study of bone and soft tissue in the periosteum. Cloth material prepared forced surgery. Histological preparations were produced in the department of forensic histology at the regional bureau of forensic medical examination in. Chernovtsy (Head. Prof. Bachinskiy VT). Histological samples were positioned in marginally-apical direction, fixed, zafarbovuvaly hematoxylin-eosin.

Based on Department: of Chemistry, of Molecular Genetics and Biotechnology Yu. Fed'kovych Chernivtsi National University, of Prosthetic Dentistry Bukovinian State Medical University conducted a clinical and morphological analysis of anatomical structures pryimplantatnyh zones after dental implantation compared with neutral zones with a detailed study of soft tissue in the area of dental periosteum after implantation. We analyzed 42 histo-morphological tissue slices drugs in implant-gum and tooth-gingival pockets (fissur); In the projection retynovanyh teeth and tissue sections in the absence of dental germs; projections of cells lost teeth.

Results and discussion. The results of comparative study of the efficacy of the method of preservation and examination of tissue obtained in terms of dental medical practice we found: The total number of observations - 42. The effectiveness of innovation is 93.33%: -

optimization of the diagnostic process; - The adoption of rational tactics surgery; - Reduction in the incidence of complications; - Reducing energy consumption; - No additional costs for specialized equipment sterilization, storage and disposal of materials; positive motivation dentist for the histological examination.

In the clinical part, examining the effectiveness bioprotetychnoho approach in addressing acquired bone defects and analysis of experimental shots radioviziohrafichnyh sensor we installed in 34 cases out of 42 higher diagnostic efficiency of the proposed method of visualizing tissues in the periosteum.

In this case, traced the fine structure of tissues not visible with standard method radioviziohrafiyi and slit-like defects in areas adjacent to the implant (Fig. 3).

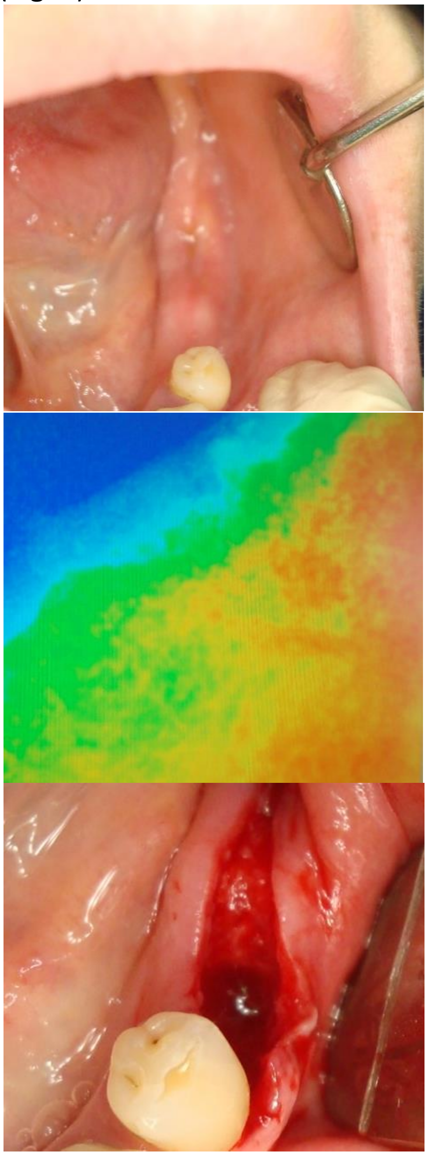

Fig. 3. Clinical example radioviziohrafichnoho monitoring of the state of bone and soft tissue in the area of obtaining material for morphological analysis.

In the study of anatomical specimens in 22 (73%) cases after dental implantation, we observed the presence of wedge-shaped defects affect by different degrees. all cases 100%, we observed the presence of implants, gingival pockets *, with varying degrees of their affect. Implant gingival pocket * covered circular implant with no uniform deepening, with different densities adjacent to the implant. Clinical statistics prompted us to conduct morphological studies.

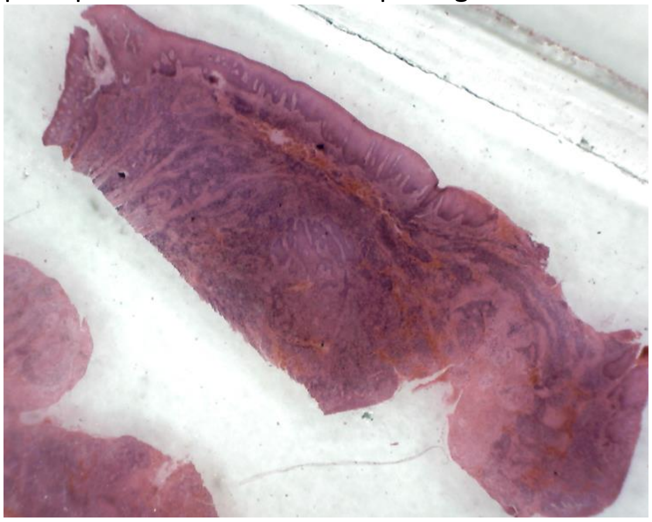

Fig. 4. The cut tissue in the area of implants, gingival pockets;

Histological examination of soft tissues in the alveolar bone in the jaws pryimplantatniy area we saw: the test section in marginally-apical direction adjacent connective basis throughout includes chronic inflammatory infiltrate with the presence of plasma cells. Collagen fibers are swollen, focal-homogenized. Existing large hemorrhage with hemosiderin deposition, a hotbed of granulation tissue. Smaller arteries, arterioles full-fledged. There sclerosis of the arteries and arterioles of intimal thickening, swelling subintimalnyh departments hiperelastozom, razvoloknennyam media, swelling, focal desquamation of the endothelium. Severe perivascular sclerosis and narrowing of the blood vessels. The lumen of some vessels obliterovanyy. In the nerve fibers marked vacuolization and fragmentation. Covering squamous epithelium with a picture of pseudo epitelioznoyi hyperplasia, focal desquamation. There germination of stratified squamous epithelium In the adjoining connective tissue with its loosening (Fig. 4). We have seen that in the test section of the soft tissue areas of the tooth - gingival pockets in marginally-apical direction: in the adjacent connective basis squamous epithelium with focal desquamation. Collagen fibers are swollen, focal homogenized. Existing large hemorrhage with hemosiderin deposition, a hotbed of granulation tissue. Smaller arteries, arterioles full-fledged. There sclerosis of the arteries and arterioles of intimal thickening, swelling subintimalnyh departments hiperelastozom, razvoloknennyam media, swelling, focal desquamation of the endothelium. Severe perivascular sclerosis and narrowing of the blood vessels. The lumen of some vessels obliterovanyy. In the nerve fibers marked vacuolization and fragmentation (Fig. 5).

The cut derived from the field of alveolar bone in the jaws adjacent tooth and implant placement represented: sometimes mature, and sometimes not mature connective tissue, almost all along existing cracks - like capillaries of intimal thickening; marked focal clusters of red blood cells. Partly visible focal infiltrates of plasma, lymphoid, histiocytic cells. A separate area of observe osteoid tissue (Fig. 6).

Morphological analysis of drugs: slices of tissue in the area of the tooth-gingival and implant-gingival pockets confirming their similarity (Fig. 4-6).

Histological examination of sections of soft tissues in the alveolar bone in the jaws projections former cells of the roots of teeth (Fig. 3): available fibrous bands, including connective tissue. This is consistent with the results of observations of other researchers and not relevant in the present.

Histological examination of sections of soft tissue in the projections retenovanyh teeth and

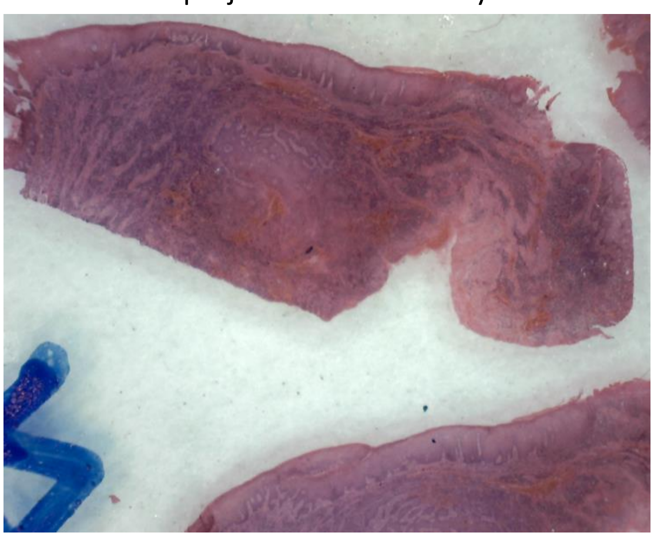

Fig. 5. The cut tissue in the area of the tooth-gingival pocket

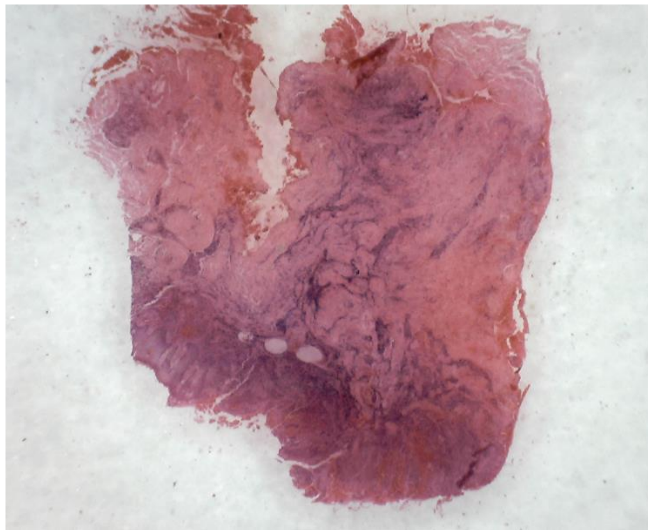

Fig. 6. The cut tissue from the area adjacent tooth and implant placement

adjacent zones morphological differences are not differentiated. This is also consistent with the results of observations of other researchers and not relevant in the present.

Conclusions. 1. The implants-gingival pocket, teeth-gingival pocket is post traumatic anatomical and functional structures and morphologically similar.

2. The intact soft tissue alveolar bone jaws are not differentiated specific morphological structures forming the tooth-gingival slot (intact anatomical and physiological formation).

3. Viziohrafichnyy method study of thin bone structures segment in combination with histological examination makes it possible to adequately assess the impact of trauma or surgery in size and nature of defect acquired and the need for a differentiated approach to the diagnosis of reparative capacity of tissues in the treatment area.

4. Proposed containers to preserve biological tissues under conditions appropriate dental medical practice is environmentally and socially conditioned by means of medical service.

Prospects for research. The study of morphological features of alveolar bone structure of the jaw to preserve soft tissue adaptive capacity in the second phase of dental implantation leads to the development of improved methods of forming anatomical structures for similarity to the physiological process of tooth eruption and methods of service osteointehrovanyh implants.

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