



**Stomatology: in 2 books. —
Book 2: textbook (IV a. I.)**

In the textbook, main problems of dental service, therapeutic and surgical dentistry are elucidated. Sections of the textbook correspond to the curriculum and program of training in the internship on the specialty of "Stomatology". Basic principles of delivering dental care for population, clinical picture, methods of diagnosis and treatment of hard dental tissues, perio-dontal tissues and mucous membrane of the oral cavity are stated. Problems of clinical picture, diagnosis and treatment of surgical pathology of the maxillofacial area are considered.  Text of the textbook is accompanied by rich original illustrative material.  It is intended for interns-stomatologists of faculties of post-diploma education, students of the Master's course, post-graduates, resident physicians, doctors-stomatologists.

STOMATOLOGY

TEXTBOOK

IN 2 BOOKS

BOOK
2

Edited by
Professor **M.M. ROZHKO**

APPROVED by
the Ministry of Health of Ukraine
as a textbook for doctors
attending postgraduate education
establishments (faculties) of the
Ministry of Health of Ukraine
specialising in dentistry

Kyiv
AUS Medicine Publishing
2018

UDC 616.3
LBC 56.6ya73
S81

*Approved by the Ministry of Health of Ukraine as a textbook
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(letter No. 08.1-30/30226, 23 November 2016)*

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S81 **Stomatology** : textbook : in 2 books. Book 2 / M.M. Rozhko, I.I. Kyrylenko, O.H. Denysenko et al. ; edited by M.M. Rozhko. — Kyiv : AUS Medicine Publishing, 2018. — 960 p. ; color edition.
ISBN 978-617-505-674-5

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CONTENTS

Preface.	12
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PART 1. THERAPEUTIC DENTISTRY

Chapter 1. MODERN METHODS AND MATERIALS FOR DENTAL FILLING	13
Dental filling quality criteria	14
Indications for the use of traditional cements	17
Modern dental cements: basic properties, requirements, indications for use	19
Materials for bandages and temporary fillings	23
Insulating liner materials	24
Zinc-phosphate cement	24
Polycarboxylate cement	25
Glass ionomer cement	26
Insulating varnishes	33
Permanent filling (restorative) materials	34
Classification and properties of composite filling (restorative) materials	40
Macrofilled composites	41
Microfilled composites	42
Minifilled composites	45
Hybrid composites	46
Universal microhybrid composites	47
Flowable composites	57
Packable composites	60
Compomers	61
Sandwich technique	64
Chapter 2. DENTAL CARIES	70
Etiology and pathogenesis of dental caries	71
Modern concept of caries etiology	71
The modern view on the pathogenesis of dental caries	72
Classification of dental caries	74

CONTENTS

Pathological anatomy of dental caries	76
The clinical picture of caries	78
The course of non-traditional (specific) forms of caries	80
Diagnostics of caries	81
Treatment of caries	85
Basic principles of caries treatment.	88
Principles and techniques of carious cavity preparation	92
Medical treatment of carious cavities	96
Filling of carious cavities	97
Technology of rational filling of contact surfaces of teeth	102
Tactics of the dentist in treatment of various clinical forms of caries . . .	103
Chapter 3. DISEASES OF TOOTH PULP	106
Pulpitis: etiology, pathogenesis, pathomorphology, classification, general symptoms	108
Clinical picture, pathological anatomy, diagnosis and differential diagnosis of acute pulpitis	114
Clinical picture, pathological anatomy, diagnosis and differential diagnosis of chronic pulpitis	120
Treatment of pulpitis. Principles of treatment. Biological methods	128
Variations of pastes for biological treatment of pulpitis	133
Surgical methods of pulpitis treatment. Vital extirpation of pulp	138
Devital extirpation and amputation	141
Mistakes and complications in treatment of pulpitis, their prevention and elimination	146
Chapter 4. PERIODONTAL DISEASES	156
Anatomical, histological and functional characteristics of periodontium structure	156
Periodontitis: etiology, pathogenesis and classification	163
Clinical picture, pathological anatomy, diagnostics and differential diagnostics of acute periodontitis	167
Chronic periodontitis	173
Differential diagnostics of chronic periodontitis.	179
Methods of periodontitis treatment	183
The main stages of periodontitis treatment	184
Surgical methods of periodontitis treatment	211
Errors during diagnostics of periodontitis	213

Errors in the stages of periodontitis treatment	214
Late complications after periodontitis treatment.	218
Remote results in periodontitis treatment	219
Chapter 5. PERIODONTAL TISSUES DISEASES	220
Systematics and epidemiology	220
Periodontium: clinical anatomy, physiology, functions, age changes. . .	220
Etiology and pathogenesis of periodontal tissue diseases.	225
Classification of periodontal tissue diseases	233
Classification of periodontal diseases by M.F. Danylevskiy (1994)	234
Periodontal semiotics (basic terms) by who (1990)	235
Methods of examination of patients with periodontal tissues pathology.	
Criteria of establishment and formulation of diagnosis	236
Hygiene and periodontal indexes, method of conducting and scheme of calculation.	240
Main periodontal indexes	243
Clinical diagnosis in periodontology	246
Clinical picture and diagnosis of periodontal diseases	249
Clinical picture, diagnosis, differential diagnosis of inflammatory periodontal diseases	249
Clinical picture and diagnosis of gingivitis	250
Clinical picture and diagnosis of catarrhal gingivitis	250
Clinical picture and diagnosis of hypertrophic gingivitis	251
Clinical picture and diagnosis of ulcerative gingivitis.	252
Clinical picture and diagnosis of atrophic gingivitis	255
Clinical picture and diagnosis of localized periodontitis.	256
Clinical picture, diagnosis and differential diagnosis of atrophic and inflammatory periodontal diseases	258
Differential diagnosis of generalized periodontitis.	265
Clinical picture, diagnosis and differential diagnosis of periodontosis . . .	266
Clinical picture, diagnosis and differential diagnosis of idiopathic diseases.	269
Productive processes, periodontomas.	270
Treatment of periodontal tissue diseases	271
Principles of complex treatment of periodontal disease.	271
Local treatment of periodontal tissue diseases and medications for removal of dental plaque	280
Methods of manual removal of dental plaques.	283

CONTENTS

Medication means for dental plaque removal	298
Medicamental treatment of periodontal tissues diseases	300
Treatment of chronic catarrhal gingivitis	303
Treatment of hypertrophic gingivitis	305
Treatment of ulcerative gingivitis	308
Treatment of dystrophic and inflammatory periodontal diseases	311
Treatment of periodontosis	325
Surgical treatment of periodontal tissue diseases	327
Modern means for surgical treatment of periodontal and bone pockets. Method of directed tissue regeneration	331
Prosthetic and orthodontic treatment of periodontal diseases	335
Variants of prosthetic treatment of degenerative and inflammatory periodontal diseases	335
Physiotherapeutic treatment of periodontal diseases	340
Results of treatment of periodontal tissue diseases	343
Prevention of periodontal tissue diseases	346
Oral hygiene training. Care items and facilities for individual oral hygiene	356
Oral hygiene training	356
Items for oral cavity care. Methods of teeth cleaning with different hygiene items	357
Items of individual oral cavity hygiene	362
Use of chewing gums	369
 Chapter 6. DISEASES OF MUCOUS MEMBRANE OF THE ORAL CAVITY. CLASSIFICATION	 373
Traumatic injuries of the mucous membrane of the oral cavity	375
Mechanical trauma	376
Physical trauma	378
Chemical trauma	387
Leukoplakia	390
Infectious diseases of the mucous membrane of the oral cavity	399
Viral injuries	399
Treatment of viral lesions of the mucous membrane of the oral cavity	407
Changes in the mucous membrane of the oral cavity in acute infectious diseases	411
Prevention of HIV-infection in personnel of dental institutions	428

Bacterial infections	429
Mycotic conditions	447
Diseases of lips	452
Cheilitis	452
Chronic lip fissure	465
Granulomatous miescher's macrocheilitis.	466
Meige trophedema	466
Syndrome of Rossolimo—Melkersson—Rosenthal.	467
Diseases of the tongue (glossitis)	469
Desquamative glossitis	470
Hairy tongue	472
Rhomboid glossitis	474
Folded tongue	475
Precancerous conditions of the mucous membrane of the oral cavity and vermilion border of the lips	476
Bowen's disease	478
Warty precancerous condition	480
Limited precancerous hyperkeratosis of the vermilion border of the lips	482
Manganotti's abrasive precancerous cheilitis	484
Manifestations of allergic conditions on the mucous membrane of the oral cavity.	486
Drug allergy.	486
Cellular tests	490
Chronic recurrent aphthous stomatitis	494
Behcet's syndrome	499
Multiform exudative erythema	500
Dermatoses caused by autoimmune components.	507
Pemphigus	507
Lichen planus	513
Lupus erythematosus	519
Changes in the mucous membrane of the oral cavity against the background of exogenous intoxications	524
Mercurial stomatitis	524
Lead stomatitis	526
Bismuthic stomatitis.	527
Changes in the mucous membrane of the oral cavity against the background of the diseases of the body organs and systems	528

CONTENTS

Diseases of gastrointestinal tract	528
Kidney diseases	531
Cardiovascular pathology	532
Lesions of the mucous membrane of the oral cavity in patients with endocrine disorders	535
Changes in the mucous membrane of the oral cavity in hypo- and avitaminoses	542
Changes in the mucous membrane of the oral cavity in diseases of the blood-forming organs	548
Leukemias	549
 PART 2. ORAL AND MAXILLOFACIAL SURGERY 	
Chapter 7. ORGANIZATION OF SURGICAL DENTAL CARE FOR POPULATION IN POLICLINIC	567
Requirements for surgical dental offices and staff list	567
Operations that are carried out in offices of dental surgery	568
Documentation in department of surgical dentistry	569
 Chapter 8. EXAMINATION OF PATIENT WITH SURGICAL PATHOLOGY OF MAXILLOFACIAL AREA	 575
Clarification of complaints	575
Collecting the anamnesis	576
Examination by physical methods	577
Additional methods of examination	587
Radiography. Equipment and devices. Radiovisiography	588
 Chapter 9. TYPES OF ANESTHESIA IN MAXILLOFACIAL AREA.	 598
General features of anesthesia in maxillofacial area	598
Endotracheal anesthesia	600
Neuroleptanalgesia	603
Types of local anesthesia	604
Application anesthesia	604
Infiltration anesthesia	606
Conduction anesthesia	608
Topographic-anatomical backgrounds of conduction anesthesia of the trigeminal nerve branches	609
The bone foramina (target points) and related types of conduction anesthesia	611

Conduction anesthesia of upper jaw	612
Conduction anesthesia of lower jaw	621
Complications during anesthesia	631
Local complications during anesthesia	631
Common complications of local anesthesia	637
Allergic reactions	643
Practical recommendations on prevention of the allergic conditions . . .	646
Advices for doctors beginners	647
Chapter 10. TOOTH EXTRACTION	649
Indications and contraindications for removal of permanent teeth	649
Contraindications for teeth removal	650
Preparation for tooth extraction	650
Method of tooth extraction	651
Forceps and elevators for tooth extraction	652
Methods of forceps holding	654
Steps of tooth extraction	656
Dislocation of tooth (luxation or rotation)	658
The extraction of a tooth from its alveolus (traction)	659
Features of removing separate groups of teeth	660
Complications that occur during and after tooth extraction	666
Complications that occur during surgical interventions	687
Chapter 11. SURGICAL ASPECTS OF IMPLANTOLOGY	694
Dental implantation	694
Surgical stage of treatment	703
Methods of prosthetic treatment	719
Chapter 12. ODONTOGENIC INFLAMMATORY DISEASES OF THE MAXILLOFACIAL AREA	724
Methods of surgical treatment of periodontitis	724
Periostitis	731
Lymphadenitis	734
Osteomyelitis of jaws	736
Abscesses and phlegmons	741
Abscesses and phlegmons of tissues adjacent to the upper jaw . . .	742
Abscesses and phlegmons of tissues adjacent to the lower jaw . . .	748
Complications of the inflammatory diseases of maxillofacial area	754

CONTENTS

Thrombophlebitis of facial veins. Thrombosis of cavernous sinus.	754
Mediastinitis	756
Sepsis	757
Chapter 13. DISEASES OF PERMANENT TEETH ERUPTION	760
Pericoronitis	760
Chapter 14. ODONTOGENIC MAXILLARY SINUS INFLAMMATION (MAXILLARY SINUSITIS)	768
Chapter 15. INFLAMMATORY DISEASES AND TRAUMATIC INJURIES OF SALIVARY GLANDS	781
Acute sialoadenitis	781
Chronic sialoadenitis.	790
Syndromes with lesions of salivary glands	801
Injury of salivary glands. Salivary fistulas.	804
Chapter 16. INFECTIOUS INFLAMMATORY PROCESSES OF MAXILLOFACIAL AREA	809
Actinomycosis	809
Tuberculosis	812
Syphilis	814
Furuncles and carbuncles.	817
Erysipelas	823
Anthrax	824
Noma	825
Chapter 17. TRAUMATIC INJURY OF MAXILLOFACIAL AREA.	828
Bruise	828
Fractures of the mandible	836
Prosthetic treatment of mandible fractures	842
Fractures of the upper jaw, zygomatic bone, nasal bones	844
Emergency medical service in case of maxillofacial trauma	849
Chapter 18. NEUROPATHIC OROFACIAL PAIN DISORDERS.	857
Neuralgia of nerves of face and jaws	858
Paralysis and paresis of facial muscles.	864
Chapter 19. DISEASES OF TEMPOROMANDIBULAR JOINT	866
Dislocations.	866
Arthritis	868

Osteoarthroses of temporomandibular joint	868
Contracture	869
Ankyloses of temporomandibular joint	870
Chapter 20. SURGICAL TECHNIQUES IN COMPLEX TREATMENT OF PERIODONTITIS	873
Indications and contraindications to operations	873
Preoperative preparation.	876
Conservative treatment.	876
Types of surgical intervention.	877
Chapter 21. BENIGN TUMORS AND TUMOR-LIKE NEOPLASMS OF MAXILLOFACIAL AREA. ODONTOGENIC CYSTS	883
Benign tumors and tumor-like formations of soft tissues and mucous membrane of the oral cavity, face and neck.	884
Benign tumors of salivary glands	887
Benign tumors of the facial skeleton.	888
Tumor-like formations and dysplastic processes	892
Chapter 22. RESTORATIVE AND RECONSTRUCTIVE SURGERY OF THE FACE AND JAWS	894
Features of patients' examination with maxillofacial defects and deformations and patients, who require aesthetic and cosmetic surgeries	894
Methodology of examination of patients with jaw deformations	895
Some information on anthropometry of face and nose	896
Acquired defects and deformations of face	902
Defects and deformations of the nose, eyebrows, eyelids	905
Acquired deformations of facial skeleton	910
TESTS.	914
REFERENCES	954

PREFACE

The reform of postgraduate education is a part of the national reform of medical education. For its implementation a modern system of high-quality medical service should be provided. Transition to dentists of general practice training requires creation of a modern high informative textbook on this specialty.

The first publication of the Dentistry textbook creates the necessary conditions for a effective and efficient educational process of intern dentist training. The second edition of the Dentistry textbook is a logical continuation of the first one, which should contribute to further reform of postgraduate education and should provide each intern doctor with reliable methodological and scientific basis for mastering the internship program.

The second book covers in detail the organizational issues of dental service; therapeutic dentistry and oral and maxillofacial surgery materials; the material required for dentists during organization and functioning of dental offices, departments, clinics; the principles of staff ratio formation; the method of determining the dentist and dental technician workload; accounting documentation forms; the methods of evaluating the effectiveness of dental schools.

The questions of differential diagnosis in dental diseases, new treatment techniques and materials are considered in detail in the chapter of preventive dentistry. Particular attention is paid to the clinical presentation, treatment and prevention of oral mucosa diseases as independent manifestations of certain pathological conditions.

The chapter of oral and maxillofacial surgery presents problems which dentists face every day in their practice. The problems of anesthesia, tooth extraction and complications for each type of surgery, as well as the main measures in case of traumatic injuries of the maxillo-facial areas, emergency conditions in dental surgery clinic are considered in particular.

The accent is put on new methods of treatment in clinical oral and maxillofacial surgery, and new drugs used in certain cases.



CHAPTER 5

PERIODONTAL TISSUES DISEASES

SYSTEMATICS AND EPIDEMIOLOGY

According to the epidemiological researches, periodontal diseases are rather common among the population. According to WHO (1990), based on a population survey of 53 countries, the highest level of periodontal diseases was observed in people aged 35—44 years (65 to 98 %) and 15—19 years (55 to 89 %), and 80 % of children of the globe were diagnosed with gingivitis (L.A. Dmitrieva, 2003).

In 3 % of children aged 12, the diagnosis of periodontitis of moderate severity was established, and in the age of 15—16 years already in 12—18 % deep periodontal pockets (4—5 mm) were found. It was established that at the age of 16—19 76.6 % of the population are affected with periodontal tissue diseases, at the age of 20—90 %, and at 33—44, according to E. Borowski (1985), periodontitis affects 100 % of the population. Generalized periodontitis in adults is observed in 90—95 % of people with periodontal tissues diseases. Parodontosis is about 4—5 % of periodontal diseases. In adults, catarrhal gingivitis develops infrequently and only before 30 years; usually this is periodontitis (G.M. Barer, T.I. Lemetska, 1996). Among all types of gingivitis in 90 % of patients, the catarrhal gingivitis is diagnosed.

For Ukraine, the issue of periodontal diseases is also relevant. The frequency of these diseases in people before 40 years is 50—60 %, and in adults over 40 years — is 100 % (V.V. Povorozniuk, P.S. Flies, 2001). According to other authors (M.F. Danilevsky and co-author, 2002), the average for Ukraine is the incidence of periodontal diseases among those, who applied at the age of 15—35, is 74 %. M.F. Danilevsky and A.V. Borisenko (1995) noted that the loss of teeth because of periodontitis was observed 4—6 times more frequently than in caries and its complications. The results of a complex clinical laboratory examination of inhabitants of Precarpathian region, the high incidence of generalized periodontitis — 94.77 % (T.D. Pavlyuk, 2000) was found out.

Periodontal diseases often develop on the background of concomitant diseases: digestive disorders, metabolism, cardiovascular and endocrine disorders, sensitization and infection of the body, etc., and affect the psycho-emotional state of the patients.

PERIODONTIUM:

CLINICAL ANATOMY, PHYSIOLOGY, FUNCTIONS, AGE CHANGES

Periodontium — is a complex of tissues that cover the tooth and are closely related genetically, morphologically and functionally. This morphological functional complex includes gums with periosteum, the bone tissue of the alveolus, periodontium and tooth tissues. The embryonic relationship is indicated by the fact that all

CHAPTER 5. PERIODONTAL TISSUES DISEASES

periodontal tissues (except for gums) are developed from connective tissue that surrounds the dental germ, and have a common circulation. Physiological connection is manifested in the fixing function of periodontal tissues, pathological — that the pathological processes that occur in some periodontal tissues, usually, spread rapidly to others. Periodontium is more functional, physiological and pathological concept than anatomical. One of the important components of periodontium are gums.

Gums — are the mucous membrane that covers the alveolar process of the upper jaw and the alveolar part of the lower jaw and embraces the teeth in the area of their necks. Physiologically, the gums are divided into free and attached. From a clinical point of view, gums have the marginal part (part of gums that in the cervical area is adhered to the tooth).

Dense fit of the gums to necks is ensured by turgor due to the interstitial pressure caused by macromolecular interfibrillary substance.

Gingival sulcus (dental gingival sulcus, gingival fissure, sulcus gingivalis) — a slit-like space between the surface of the tooth and gingival margin (depth from 1—1.5 to 2 mm). Here, a **gingival fluid** is formed — exudate located below capillaries, that stands out due to increased vascular tissue permeability. It contains single leukocytes, desquamated epithelial cells, a set of enzymes and proteins has a protective function due to the immune properties and phagocytic activity. The amount of gingival fluid is negligible and increases in the case of mechanical irritation and inflammation, medicinal substances are quickly excreted through it.

Gingival groove — is the line of separation between free and attached gingiva, by the level of its location roughly corresponds to the bottom of gingival sulcus (fig. 1).

Histologically, gums consist of stratified squamous epithelium and lamina of mucous membrane, and the submucosal layer is not expressed. There are epithelium of the oral cavity (laminated squamous), sulcular epithelium (intermediate between stratified squamous epithelium and connective) and connective epithelium (epithelium of attachment).

Epithelial attachment is presented in several rows of elongated cells, placed parallel to the tooth surface that are quickly renewed (every 4—8 days) that testifies to their regenerative abilities. The mechanism of attachment is not

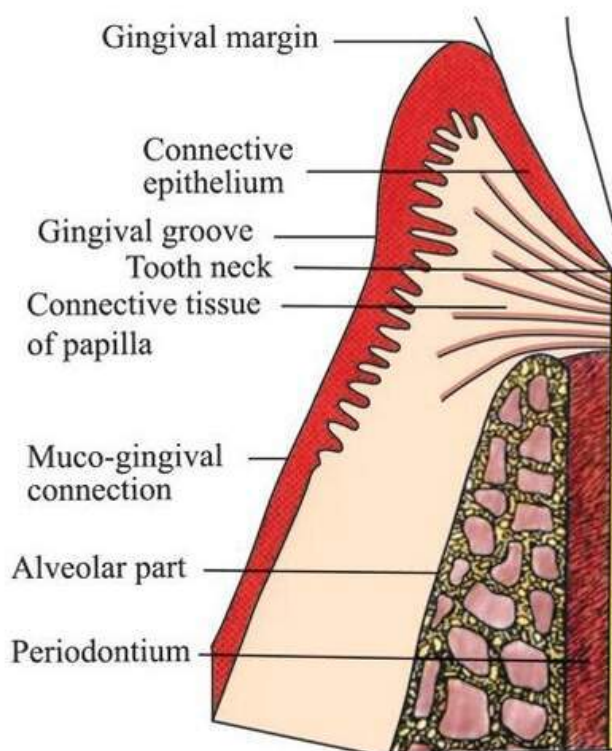


Fig. 1. Schematic representation of the edging (marginal) parodontium

THERAPEUTIC DENTISTRY

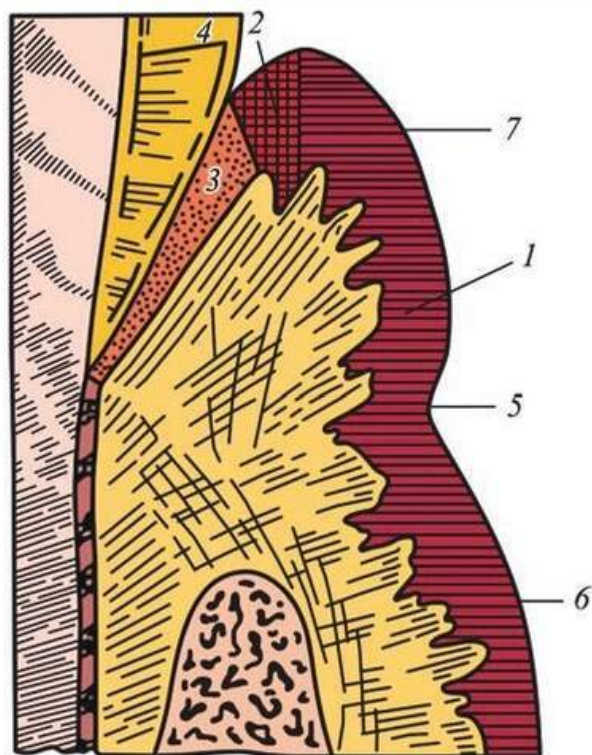


Fig. 2. Histological structure of gums:
 1 — epithelium of the oral cavity (squamous stratified); 2 — sulcular epithelium (transitional, intermediate between stratified squamous and junctional epithelium); 3 — junctional (attachment epithelium) — simple — a few rows of elongated cells; 4 — enamel; 5 — gingival groove; 6 — attached gingiva; 7 — gingival margin

(60—70 %) and organic matter (30—40 %, the basic component — collagen) and is divided into alveolar process of the upper jaw and alveolar part of the mandible. They consist of external and internal cortical plates in the form of the dense line and a spongy bone located between them.

There is a yellow bone marrow between trabeculae. The cortical plate of the alveolus is penetrated with numerous canals, through which blood vessels and nerves pass. It is much thinner on the upper jaw than on the lower one. The cortical plate ends at a distance of 1—2 mm from the cement enamel border towards the apex of the tooth roots. Inter-alveolar septa in the area of incisors and canines have the shape of a pyramid, in the area of premolars and molars — are often flattened. The external cortical layer of alveolar processes of the upper jaw and along the front teeth of the lower jaw on the vestibular side is thinner than on the oral one. Osteoporosis in case of periodontal diseases is quickly detected in the group of front teeth, because

understood. The superficial cells of connective epithelium have multiple desmosomes and are connected with apatite crystals of the dental surface through a thin granular layer of organic matrix (fig. 2).

Periodontium — is one more component of paradontium. It is presented by dense connective tissue that fills the space between the tooth alveolus and root cement that is a periodontal gap, and cellular elements of loose connective tissue (macrophages, fibroblasts, osteoblasts, plasma and mast cells, leukocytes and cementocytes); there are blood vessels and nerves. Periodontium — is the ligamentous apparatus of the tooth, has dental gingival, interdental and dental-alveolar fibers.

The component of periodontium is also a cement that covers the dental root from the enamel border to the apex. In the cervical part of the root is placed acellular or primary cement, the rest of the root is covered by secondary cement. By its structure and chemical composition, it is very similar to bone.

The bone structure of periodontium is composed of mineral salts and water

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