

# CIINICS AND DIAGNOSTIC OF PERIODONTAL DISEASES

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# Classification of periodontal diseases N.F. Danilevskiy(1994)

- I. Inflammatory diseases
- 1. Papillitis, gingivitis
- 2. Localized periodontitis

Primary Secondary Primary

- II. Dystrophic-inflammatory diseases and dystrophic diseases
- 1. Generalized periodontitis
- 2. Periodontosis
- III. Progressive idiopahic diseases
- IV. Productive processis(parodontomas)

Non-malignant and malignant

Papillitis – inflammatory diseases one or two interdental papilla (primary or secondary)

Classification of papillitis (by Danilevskiy N.F., 1958)

- 1. Catarrhal (acute, chronic)
- 2. Hypertrophic (with subacute course, chronic, with symptoms gemoragy)
- 3. Atrophic
- 4. Ulcerous



#### **Papillitis**

#### Complains



Discomfort, mild pain, heaviness, itching in a specific area of the dentition during eating, the ingestion of food in contact with residues interdentium, application of hygiene, bleeding by mechanical stimulation.

Aching pain in the problem region, which increased at night (ulcerative papillitis)

#### Anamnesis of disease

Determined etiology.

The presence action of the causative factors (physical, chemical, biological) to the region of the papilla.

Anamnesis of life

Determined etiology.

The presence of somatic disorders, neuroregulation of the secondary process

**Papillitis** 

Objective status(general)

Primary

General status without change

## Secondary

May be changes of general status, which specific for present somatic pathology

**Papillitis** 

Objective local status

Absence reaction of regional lymphatic nodes

- CHANGE OF:
- color (arterial
- or venous hyperemia)
- shape
- consistence
- sensitivity papillae during palpation

PRESENCE
OF GINGIVAL
POCKET



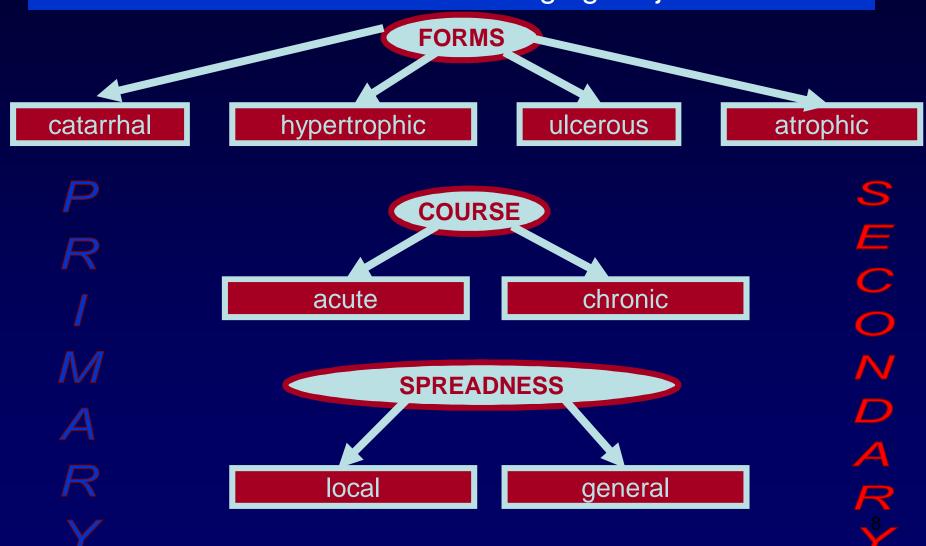
Papillitis

Objective local status



Presence of illness factors

Gingivitis – inflammation of the gum (primary and secondary) without destruction of dento-gingival junction



**Gingivitis** 

Complains

Painfullness of the gum,

discomfort in the gums

Bad breath

#### Bleeding of the gum:

- during brushing
- during bite hard food
- spontaneous

#### Gingivitis

#### **Complains**

By the general status (malaise, headache, fever, skin rash ...)

Increased the bleeding

Burning, fullness in the gums

 $\Theta$ 

Aesthetic defect in proliferation gums

C

Pain in gum
Difficult during
eating

Putrid smell from the mouth

By the general status (malaise, headache, fever)



a

**Gingivitis** 

#### Anamnesis of diseases

- The beginning of illness— imperceptible or associated with the action of pathogenic factors
- 1. Supragingival tooth deposits
- 2. Not good fabricated fills, orthopedic and orthodontics constructions
- 3. Acute margins of the tooth, carious cavity
- 4. Mechanical, thermal, chemical, radiation trauma
- 5. Extreme mechanical load on tooth
- 6. Anomalies and deformations of the bite, dental arch, tooth
- 7. Anomalies of soft tissues of oral cavity
- 8. Small vestibulum of oral cavity

- I. Stress and psychoemotional tension
- II. Diseases of inner organs
- III. Intoxications (infections, chemical)



#### Inflammatory diseases of periodontium Gingivitis

**Anamnesis of diseases** 

- Communication signs of disease to the general non-specific symptoms (for secondary)
- Previous treatment (when, where, efficiency) (important for chronic process, especially secondary)
  - seasonality (for catarrhal, ulcerous)



Gingivitis

Anamnesis of life

- Style of life
- Previous diseases, injury, operations
- Inner diseases
- Allergic anamnesis
- Bad habits
- Taken drugs in the past and present

For primary – without features, for secondary - weighed down



Gingivitis

General objective status



May be change of general status by ulcerous gingivitis medium and hard level (if present intoxication)

## Secondary

May be changes of general status which specific for present inner pathology

**Gingivitis** 

#### Local objective status

- On palpation of lymph nodes maxillofacial changes are present by:
- expressed acute catarrhal gingivitis,
- ulcerous (primary) gingivitis
- secondary gingivitis (if these symptom specific for somatic pathology)
  - Size
  - consistence
  - connection with the skin
  - connection between nodes
  - painfulness

**Gingivitis** 

Local objective status



**CHANGES:** 

Acute catarrhal

- color (arterial or venous hyperemia),
- form,
- consistence,
- sensitivity of the gum
- PRESENT GINGIVAL POCKETS
- PRESENT OF HALITOSIS
- ABSENT PATHOLOGICAL MOBILLITY OF THE TOOTH
- SUPRAGINGIVAL DENTAL PLAQUE

**Gingivitis** 

Local objective status

## Formaline probe(C.Parma, 1960)

Determining the integrity of dentogingival connection (5 mml 40% formaline, 20 ml glycerine, 175 ml of water)

A – gingival sulcus in normal condition, during probing penetration in epithelium max. – 2mm.

B – gingival pocket with gingivitis. Loose of epithelium connection is absent

C – gingival pocket with gingivitis by edema, loose of epithelium connection is absent



Probing of gingival sulcus





**Gingivtis** 

Index estimation the condition of gingiva

#### Index of degree inflammation in gum

- PMA (1960)
- Sillness-Loe (1963)
- Russel (1956)
- Ramfjord (1974)
- SBi gum bleeding (1958)
- PBI papillae bleeding(1977)
- probe Shiller-Pisarev



#### Index of degree destruction of periodontal tissues

- Ramfjord (1959),
- Sandler-Stahl (1957),
- Miller gum recession(1985)

**Gingivitis** 

Hygiene condition of oral cavity





- Green-Vermillion (1964),
- Sillness-Loe (1962)
- HYG interdental hygienic index (Rateitchak, 1989)
- by Fedorova-Volodkina

**Gingivitis** 

Additional methods



Gingivitis

Additional methods

**Probe Roterrs** 

Determination of tissue saturation with ascorbic acid (2,6-dichlorophenolindophenol - paint Tilemans)

Biochemical analysis of blood

Clinical analysis of venous blood

Cytomorphometry

Probe of Yasinovsky

Activity of the inflammatory process, the state of local immune mediated.

**Gingivitis** 

Additional (functional) methods

- Reoparodontography
- Laser Doppler flowmetry
- High-frequency ultrasound
- Doppler
- Capillaroscopy, contact biomicroscopy
- Probe of Kulagenko

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✓ Ultrasonic ehoosteometriya

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✓ Densitometry (X-ray, ultrasound)

V E S S E L S

**Gingivitis** 

Additional (microbiological) methods

#### General catarrhal gingivatis

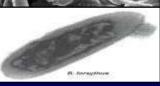
staphylococcal infection– chronic activation with frequent exacerbations



Enterobacter spp.

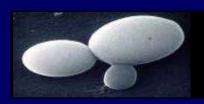


Pseudomonas aeruginosae



Bacteroides forsithus

Assiociants fungi Candida with Staph. and strept. – current active chronic inflammation



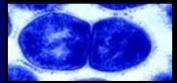
Candida albicans

streptococcal infection– lingering inflammation



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Streptococcus sanguis
Streptococcus mutans

Streptococcus haemoliticus

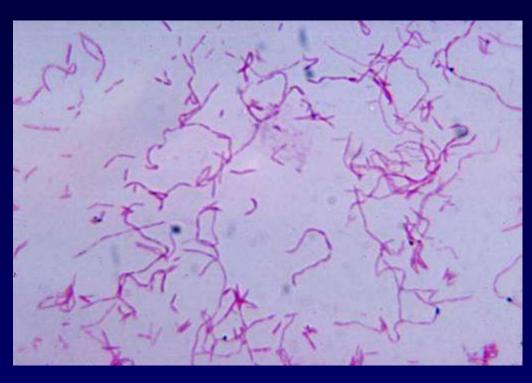
Peptostreptococcus micros

Streptococcus intermedia

**Gingivitis** 

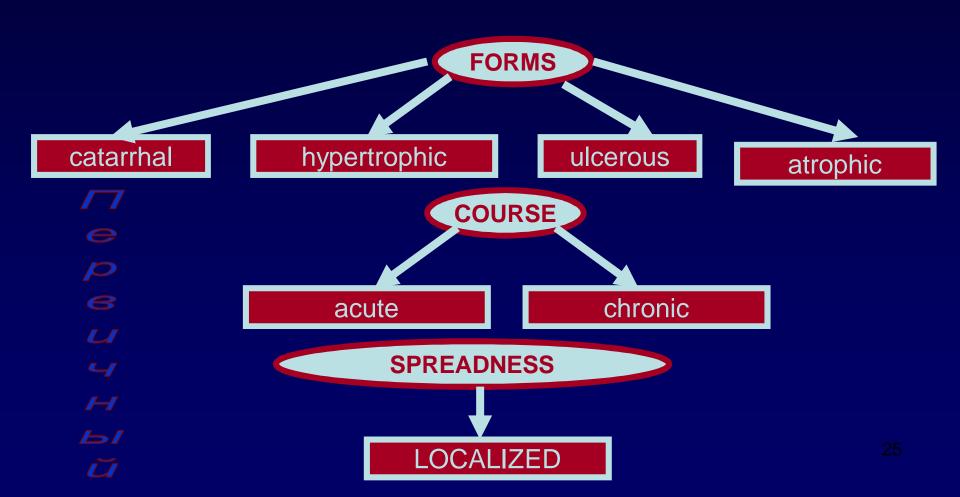
Additional (microbiological) methods

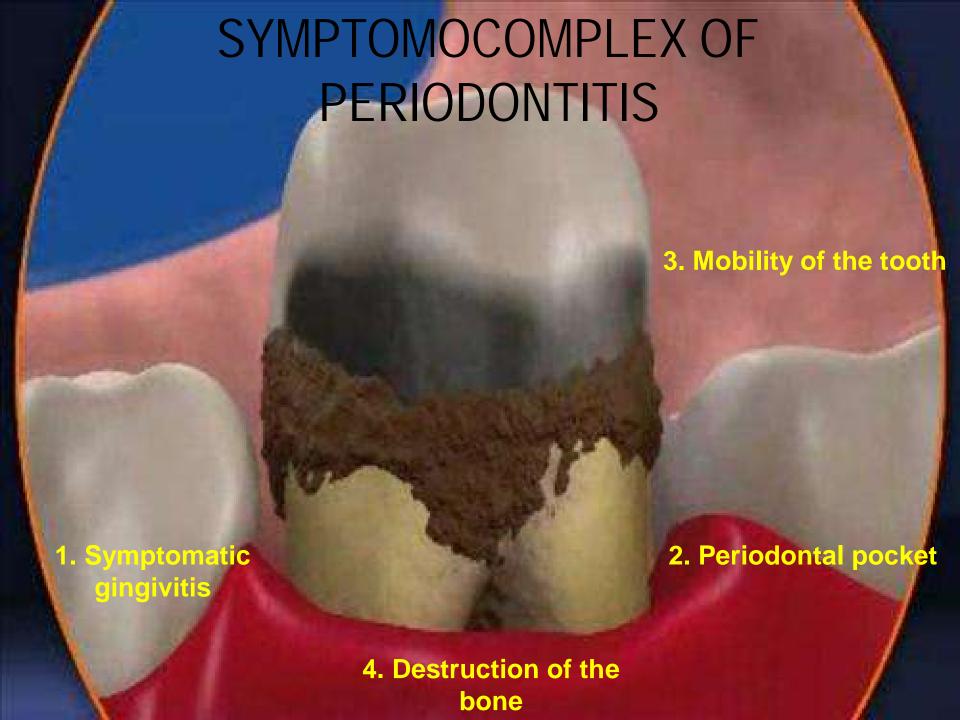
## Ulcero-necrotic (Vensan)



fusiform bacillus spirochete Vincent

Localized periodontitis — inflammation-dystrophic diseases of periodontal tissues (primary) with destroyed of tooth-gingival junction in one sextant of the





#### Inflammatory diseases of periodontium Localized periodontitis

Complains

1. Symptomatic gingivitis

Gum painless,

Discomfort in the gum

Bad breath

#### Bleeding of the gum:

- during brushing
- by bite hard food
- spontaneus



## Inflammatory diseases of periodontium Localized periodontitis

**Complains** 

Aesthetic defect at lowering the gums and teeth dysposition

High sensitive of the tooth to temperature, chemical and mechanical irritation factors

Tooth mobility

#### Localized periodontitis

#### Anamnesis of disease

- Start of disease imperceptible or associated with the action of pathogenic factors
  - Dental calculus
  - Not good fabricated fillings, orthopedic and orthodontic construction
  - Acute margins of the tooth, carious cavity
  - Mechanical, thermal, radial, chemical trauma
  - Extreme mechanical load on tooth 5.
  - Anomalies and deformations of the bite, dentition and tooth.
  - Anomalies of soft tissues in oral cavity
  - Extreme mechanical load on tooth 8.
- Previous treatment (when, where, effect) chronic process )
  - Seasonality

(important for



#### Localized periodontitis

Anamnesis of life

- Style of life
- Previous diseases, trauma, operations
- Present diseases
- Allergy anamnesis
- Bad habits
- Used drugs in past and present time

Without features



Localized periodontitis

Objective general status

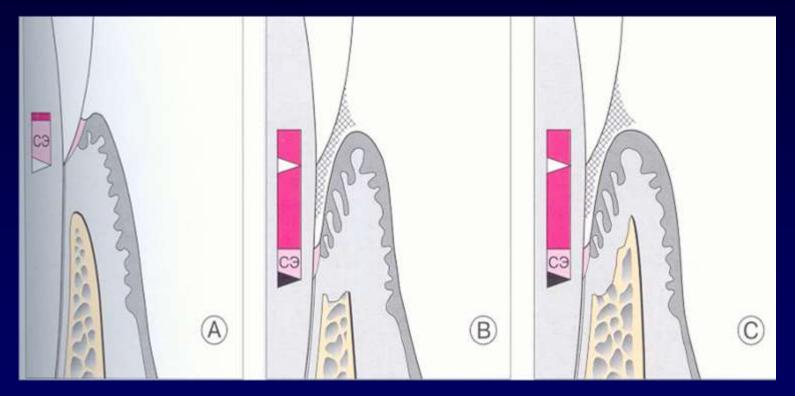
WITHOUT FEATURES

Local objective status

- ABSENCE REACTIONS OF REGIONAL LYMPH NODES (in chronic process)
- PRESENCE OF SYMPTOMATHIC GINGIVATIS (objective status is the correspondce of form of the gingivitis)
- APPEARR OF PERIODONTAL POCKETS (depth is correspondee of severity)
- APPEAR OF PATHOLOGICAL MOBILITY OF THE TOOTH

#### Localized periodontitis

#### DIAGNOSTIC OF PERIODONTAL POCKETS



A – gingival sulcus in norm, apical region of CE is localized on the level of cementum-enamel border

B – Suprabone pocket, loose of connection, proliferation of epithelium of pocket. On the bottom of pocket – remains of CE.

C – intrabone pockets

Localized periodontitis

#### DIAGNOSTIC OF PERIODONTAL POCKETS





Pocket depth (PD) – the distance from the gingival margin to the point where the probe stops (imprecise measurement)

Clinical level of connection (CLC) – the distance from cementum-enamel border to the point where the probe stop (precise measurement)

#### Localized periodontitis

#### DIAGNOSTIC OF PERIODONTAL POCKETS





#### Loose of attachment (connection)

I degree – loose till 3,5 mm II degree – loose 4-5 mm III degree – loose over 5 mm

Localized periodontitis

DIAGNOSTIC STATIC OF THE TOOTH

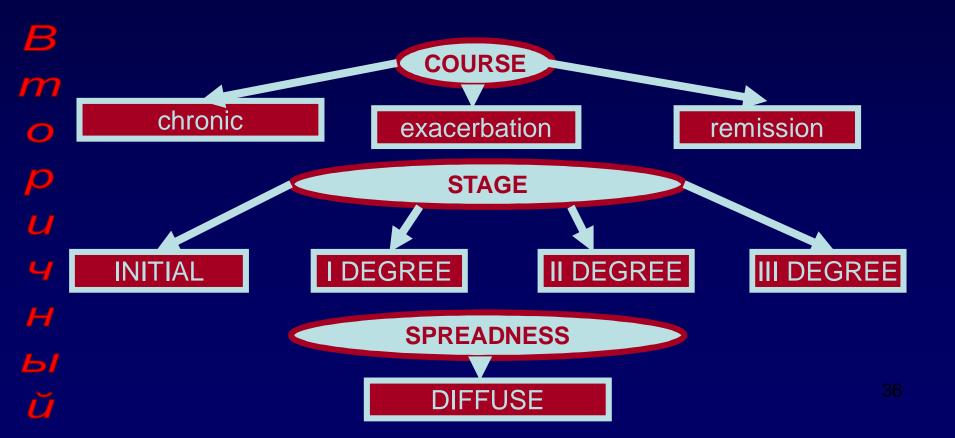


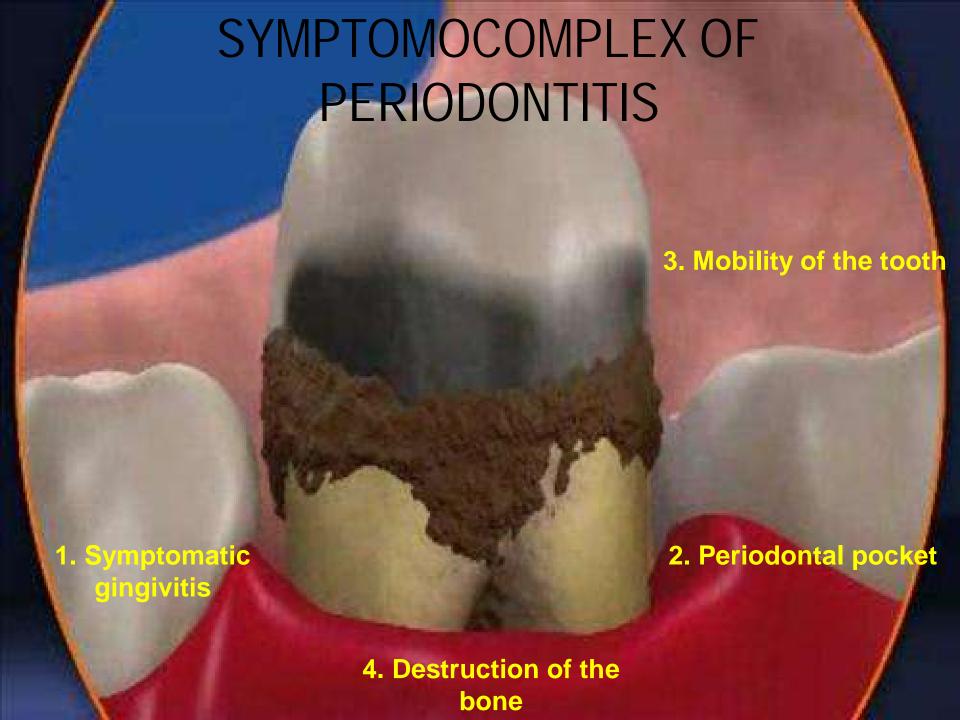
#### PATHOLOGICAL MOBILITY

I stage of periodontitis—I level of tooth mobility
II stage of periodontitis—I, II level of tooth mobility
III stage of periodontitis—I-III level of tooth mobility

# Inflammatory-dystrophic diseases of periodontium

Generalized periodontitis - inflammatory-dystrophic diseases of periodontal tissues (secondary) with destroyed of tooth-gingival junction





## Inflammatory-dystrophic diseases of the periodontium Generalized periodontitis

Complains

1. Symptomatic gingivitis

Gum painless,

Discomfort in the gum

**Bad breath** 

#### Bleeding of the gum:

- during brushing
- by bite hard food
- spontaneus

#### **Generalized Periodontitis**

Complains

Aesthetic defect at lowering the gums and teeth nomination

High tooth sensitive to temperature, chemical, mechanical factors

Tooth mobility

#### Generalized periodontitis

Complain

Loose of the tooth

The formation of heavy deposits on teeth

Change position of the tooth, diction

#### Generalized periodontitis

Complains at exacerbation

Pain in the gum during brushing, eating

Increased gum bleeding

The appearance of the gum swelling

Appearance of ulcerous on the gum

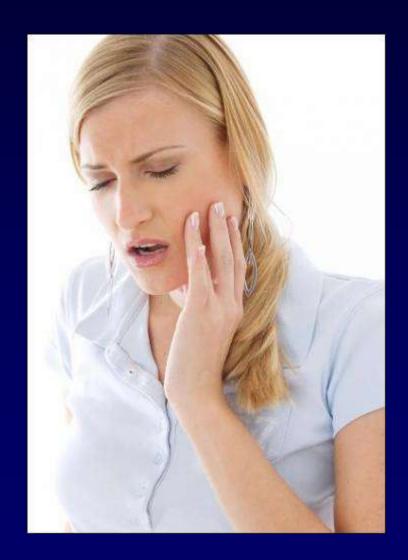
#### Generalized periodontitis

#### Complain at remission



Aesthetic defect at lowering the gums and teeth nomination

High tooth sensitive to temperature, chemical, mechanical factors



#### Generalized periodontitis

Anamnesis of diseases

- Start of diseases— imperceptible or associated with the action of pathogenic factors:
  - Social
  - Biological
  - physical
  - Chemical
  - Cosmic-planetary
- Connection appear signs of diseases with general nonspecific symptoms of somatic pathology
- Previous treatment (when, where, effect)
- Seasonality



#### Generalized periodontitis

Anamnesis of life

Style of life
Heredity (especially for women)
Profession (place of work)
Previous diseases, trauma, operations
Present diseases
Allergic anamnesis
Bad habits
Used drugs in past and present

weighed



#### Generalized periosontitis

General objective status

May be changes of general status, which specific for present somatic pathology

Local objective status

ABSENCE REACTION OF REIONAL LYMPH NODES (at chronic process, remission)

SYMPTOMATIC GINGIVATIS (objective status corresponds form of gingivitis

PRESENCE OF PERIODONTAL POCKET (depth corresponds heavy)

PATHOLOGICAL TOOTH MOBILITY

#### Generalized periodontitis

Index estimation the condition of gingiva

#### Index of degree inflammation in g

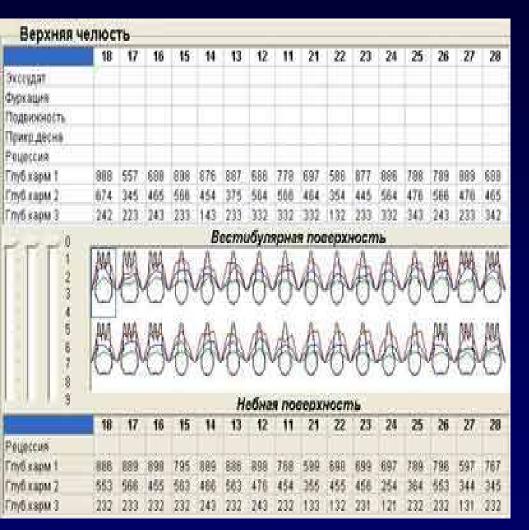
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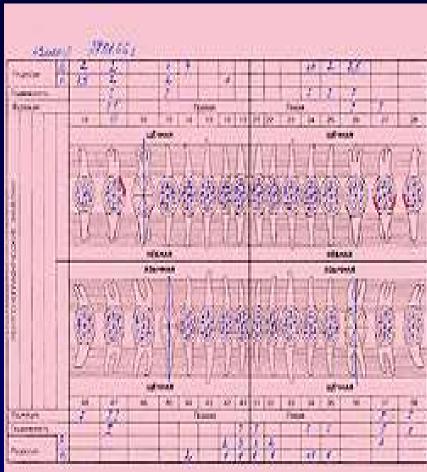


#### Index of degree the destruction of periodontium

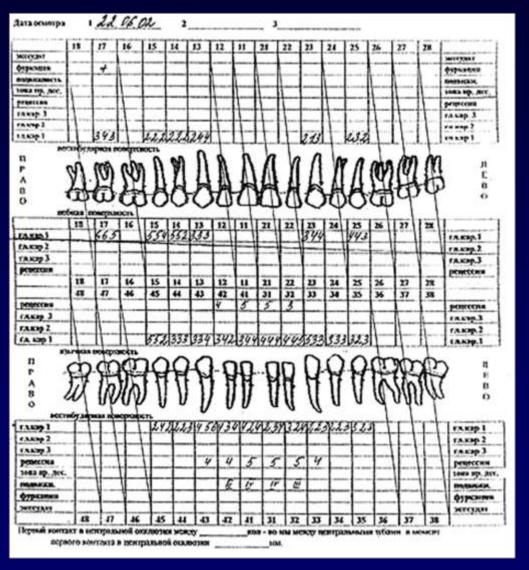
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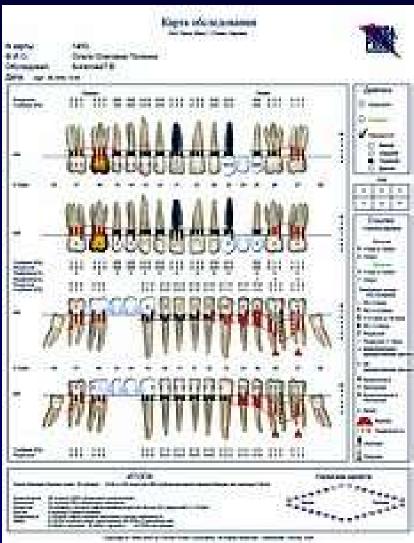
## Write of periodontogramm





## Write of periodontogramm





#### Generalized periodontitis

Additional methods



Bone tissues of periodontium in normal

#### Generalized periodontitis



#### Generalized periodontitis



#### Generalized periodontitis



#### Generalize periodontitis

Additional methods

**Probe of Rotter** 

Hypovitaminosis of vitamin C

Biochemical analysis of blood

Clinical analysis of venous blood

The severity of the changes appropriate to the type of somatic disease

Cytomorphometry

Probe of Yasinovsky

#### Generalized periodontitis

Additional methods

Estimate of mineral metabolism and hormones regulation of calcium

- Number of calcium, magnesium, phosphorus, serum
- parathyroid hormone
- calcitonine
- calcitriolum
- Lime acid
- Free oxyproline

Changes in bone metabolism markers of bone formation and resorption

bone alkaline
osphatase
osteocalcinum
Dezoxypyridinoline

#### Generalized periodontitis

Additional (functional) methods

- Reoparodontography
- Laser Doppler flowmetry
- High-frequency ultrasound
- Doppler
- Capillaroscopy, contact biomicroscopy
- Probe of Kulagenko

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✓ Ultrasonic ehoosteometriya

N

✓ Densitometry (X-ray, ultrasound)

V E S S E L S

## Inflammatory-dystrophic diseases of the periodontium Generalized periodontitis

Additional (microbiological methods)

## I, II degree with small exudation from PP

Anaerobic microflora with

dominated of peptostreptokokkov

(Peptostreptococcus sp., Porfiromonas sp.,
Actinomyces sp., Fusobacterium sp.)

## III degree with big exudation from PP

The predominance of aerobic coccal flora and facultative anaerobic associacion

(Strept. pyogenes, mitis, Staph. aureus, Strept. Epidermidis)

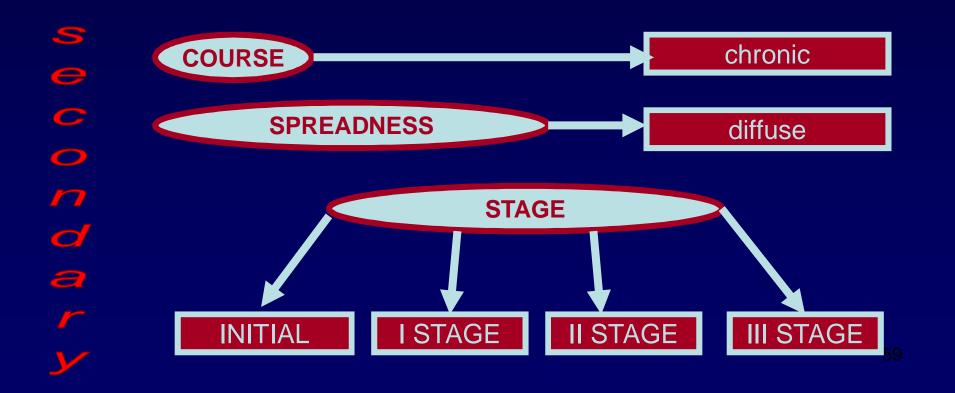
# Regularities clinical periodontal changes in somatic diseases

- Generalized character of inflammatorydystrophic process in periodontium
- The severity of generalized periodontitis determined by the severity of somatic pathology
- Severe clinical generalized periodontitis (subjective and objective)
- Faster progression of periodontal disease

# Regularities clinical periodontal changes in somatic diseases

- Frequent exacerbation of the process in the periodontium, which correlate with exacerbation of somatic pathology
- Increasingly acute periodontal disease precede exacerbations of somatic disease
- The inefficiency of 'traditional' treatments
- The low level of oral hygiene

Periodontosis – the diseases of periodontal tissues (secondary) which characterizes by primary dystrophic changes which have general increase of alveolar part of the bone and have gum recession without inflammatory process c



#### **Periodontosis**

Complains

Itching, burning, "aches" in different parts of the jaw

Hypersensitivity of the teeth, the appearance of defects on the tooth

Aesthetic defects by lowering gums (II degree)

Mobility and dislocation of the tooth (III degree)

#### Periodontosis

#### Anamnesis of diseases

- Start of disease— imperceptible or associated with the action of pathogenic factors:
  - Social
  - physical
  - Biological
  - Cosmic-planetary
- Connection appear the signs of diseases with general nonspecific symptoms of somatic pathology
- Previous treatment (When, where, effect)
- Seasonality (not typical)



Periodontosis

Anamnesis of life

- Style of life
- Heredity
- Profession, place of work
- Previous diseases, trauma, operations
- Present diseases (cardiovascular diseases)
- Allergic anamnesis
- Bad habits
- Used drugs in past and present



#### Periodontosis

General objective status

May be changes of general status, which typical for present somatic pathology

Local objective status

- ABSENCE REACTION OF REGIONAL LYMPHATIC NODES
- ABSENCE INFLAMMATION OF THE GUM (pallor, density, thickening)
- PRESENT GUM RECESSION
- PRESENT NON-CARIOUS DEFECTS
- PATHOLOGICAL TOOTH MOBILITY (IN II, III degree)
- PRESENT SUPRAGINGIVAL DENTAL CALCulus (in II, III degree)

#### Periodontosis

Index estimation gum condition

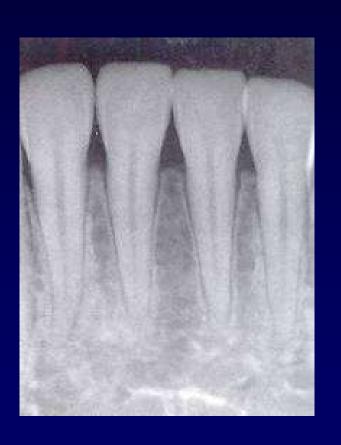
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- Probe Shillarev-Pisarev

#### Index of degree the destruction of periodontium

- Ramfjord (1959),
- Sandler-Stahl (1957),
- Miller gum recession(1985)

Periodontosis





## Dystrophic diseases of periodontium Periodontosis

Additional methods

**Probe of Rotter** 

Hypovitaminosis of vitamin C

Biochemical analysis of blood

Clinical analysis of venous blood

The severity of the changes appropriate to the type of somatic disease

Cytomorphometry

Probe of Yasinovsky

Microbiological diagnostic

Periodontosis

Additional methods

Estimate of mineral metabolism and hormones regulation of calcium

- Number of calcium, magnesium, phosphorus, serum
- parathyroid hormone
- calcitonine
- calcitriolum
- Lime acid
- Free oxyproline

Changes in bone metabolism markers of bone formation and resorption

bone alkaline osphatase osteocalcinum Dezoxypyridinoline

#### Dystrophic diseases of periodontium Periodontosis

#### Additional (functional) methods

- Reoparodontography
- Laser Doppler flowmetry
- High-frequency ultrasound
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✓ Ultrasonic ehoosteometriya

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✓ Densitometry (X-ray, ultrasound)

VESSELS

### Idiopathic progressive periodontal disease

Generalized loss of periodontal tissue (secondary) with progressive bone lysis

- Diseases of blood
- 2. Histiocytosis X
- 3. Diseases associated with impaired metabolism
- 4. Periodontal lesions in immunodeficient states
- 5. Periodontal lesions in congenital diseases

## Idiopathic progressive periodontal disease

Generalized loss of periodontal tissue (secondary) with progressive bone lysis

- Occur most often in young children, progresses through puberty. May occur in adults
- Aggressive type of periodontal tissue lysis is accompanied by loss of teeth for 2-3 years
- The clinical picture is similar to the exacerbation of generalized periodontitis
- Problem of periodontal tissue of both jaws

### Idiopathic progressive periodontal disease

Generalized loss of periodontal tissue (secondary) with progressive bone lysis

- The disease occurs with damage to internal organs and the corresponding changes in laboratory parameters
- Characteristic X-ray a tendency to funnel-shaped type of bone resorption of the alveolar process, osteoporosis, bone
- Radiographic bone changes ahead clinical
- Resistant to conservative treatment

## Idiopathic progressive periodontal diseases

# 3. Diseases associated with impaired metabolism

Type 1 diabetes (insulin-dependent)

- V anaerobic flora in the gingival econiche
- Aggressive course of periodontitis with abscess formati
- Pronounced suppuration of the pockets
- V granulation tissue in pockets
- Significant loss of periodontal tissue in a short period

+

- Xerostomia
- Halitosis
- Erosion of enamel, wade-shade defects
- High intensive of caries
- Catarrhal stomatitis
- Candidosis of oral cavity

## Idiopathic progressive periodontal diseases

3. Diseases associated with impaired metabolism

#### Type 2 diabetes (non-insulin dependent)

compensated form of diabetes

<u>latent way</u>

Prevalent aerobic microorganisms in gingival

noncompensated form of diabetes

<u>Progreessive way</u>

A mixed aerobic-anaerobic microflora in gingival

High speed and number of mineralized dental plaque form

## Parodontomy

Productive processes in periodontal tissues (nonmalignant and malignant)

Epulis – hearth proliferation of connective tissue on the gums or in the thickness of the jaw



