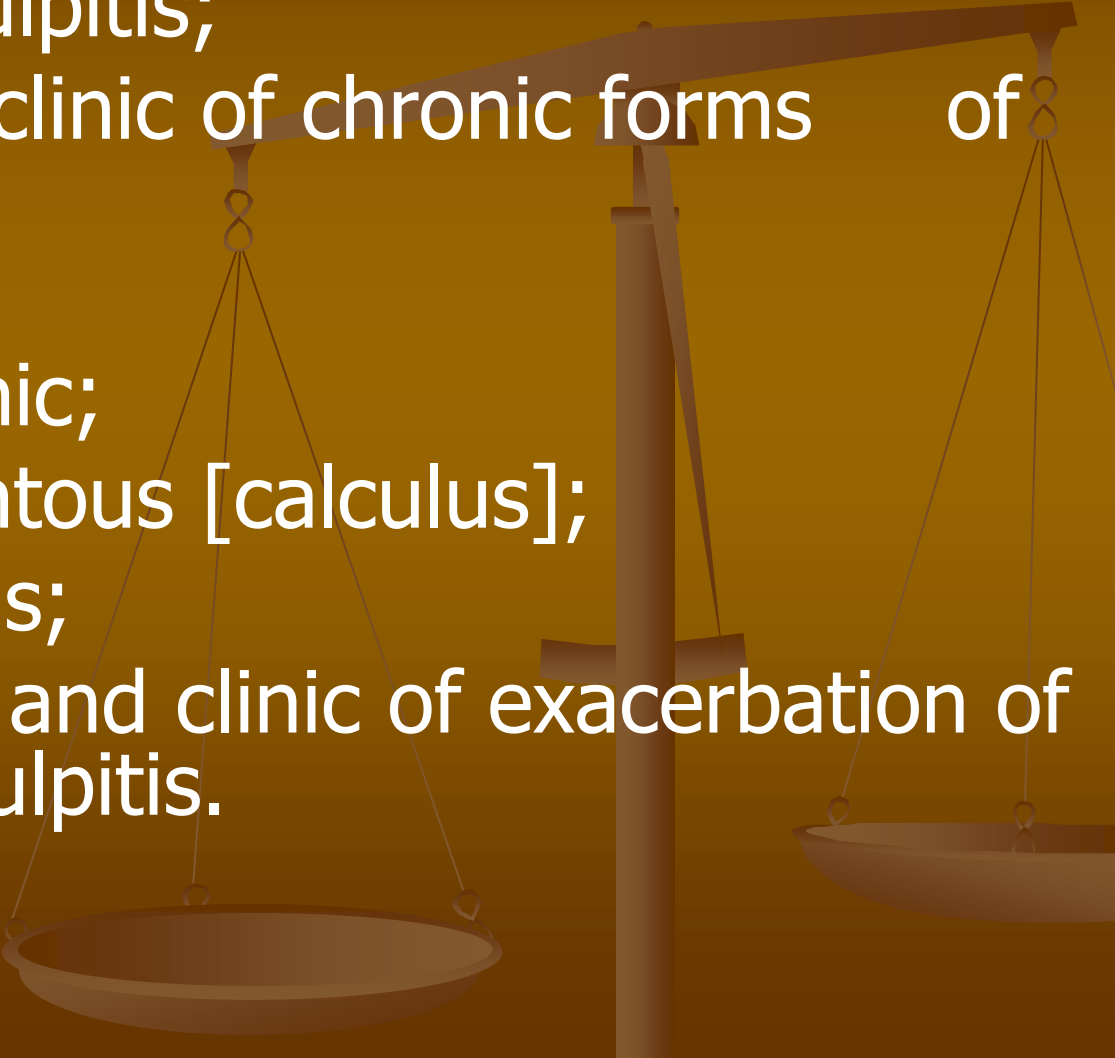


# PULPITIS (Part second)

Lecture for 3-rd year students  
of international faculty

The lecturer: PhD in Medical Sciences,  
Associate Professor  
Marchenko Iryna Yaroslavovna

# PLAN OF LECTURE

1. Classification of pulpitis;
  2. Pathomorphology, clinic of chronic forms of pulpitis:
    - fibrous;
    - hypertrophic;
    - concrementous [calculus];
    - gangrenous;
  3. Pathomorphology and clinic of exacerbation of chronic forms of pulpitis.
- 

# A pulpitis is inflammation of tooth pulp.

2. Pulp (pulpa dentis) – connective tissue formation, filling the cavity of tooth (pulp chamber).

**Morphologically consists of:**

cells

Odontoblasts

Fibroblasts

Stellate cells

Macrophage

fibers

collagenic

reticular

(argirofilic)

intercellular substance

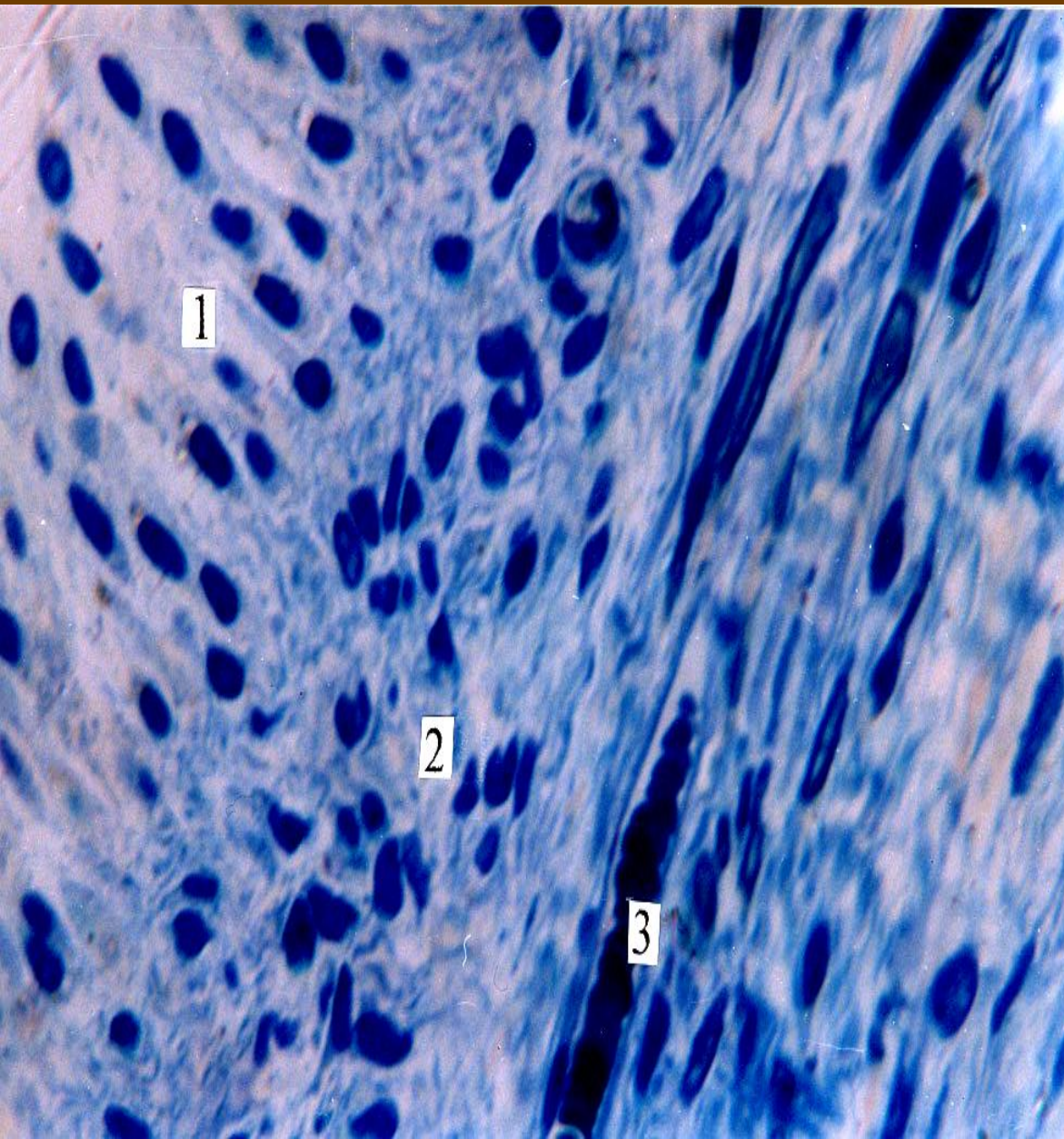
glycosaminoglycans,

is **abundantly pierced**

by blood vessels, nerves

3 layers: 1. Odontoblastic;  
2. Subodontoblastic;  
3. Central.

# Layer-specific cellular structure of pulp

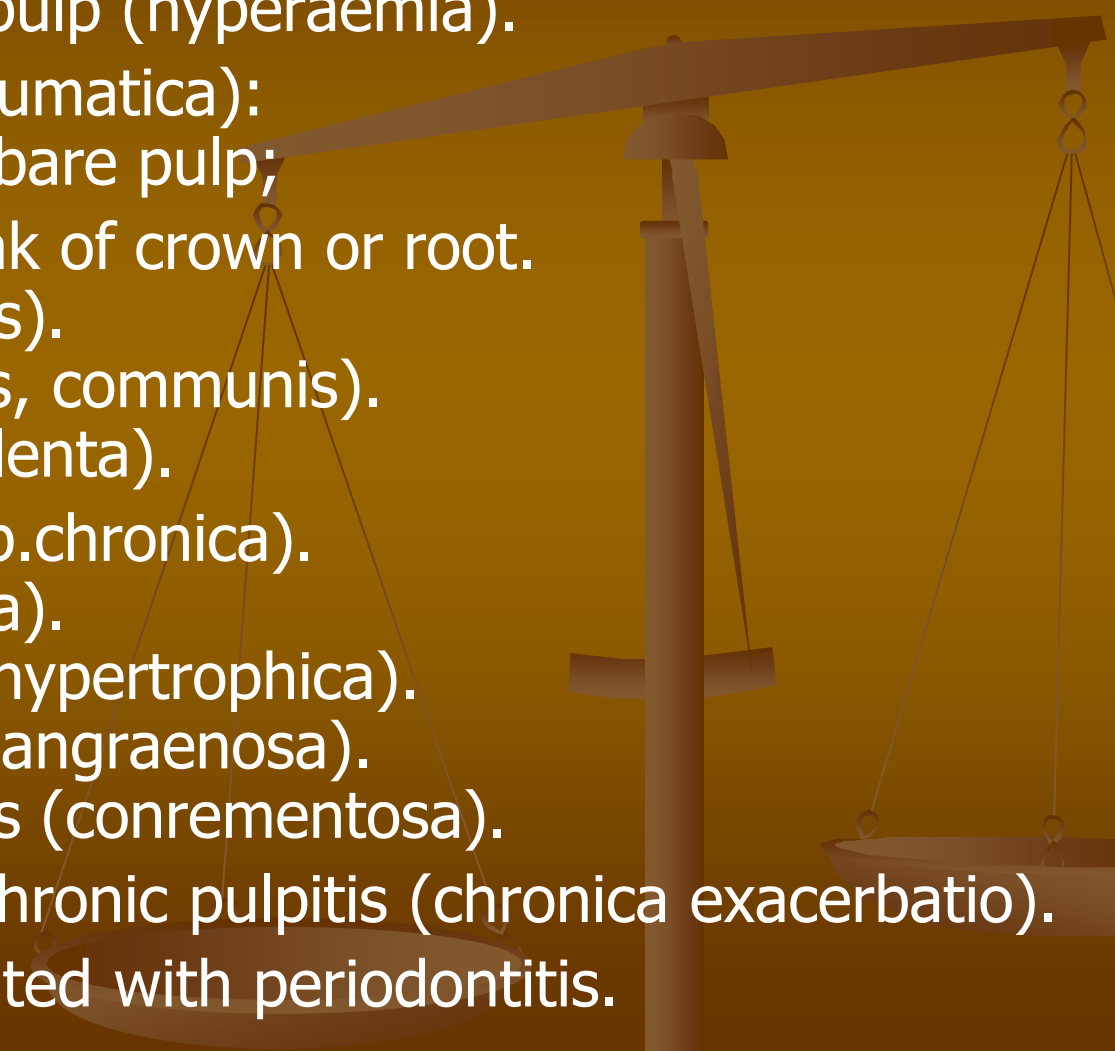


1. Odontoblastic layer (Odontoblasts);
2. Subodontoblastic layer (stellate pulpocytes);
3. Central layer (fibroblasts).



# Classification of pulpitis

by E.S.Yavorskaya, L.I.Urbanovich (Kiev, 1964)

- 
- I. Acute pulpitis (acuta).
    - 1. Hyperemia of pulp (hyperaemia).
    - 2. Traumatic (traumatica):
      - a) by chance bare pulp;
      - b) at the break of crown or root.
    - 3. Partial (partialis).
    - 4. Diffuse (totalis, communis).
    - 5. Purulent (purulenta).
  - II. Chronic pulpitis (p.chronica).
    - 1. Fibrous (fibrosa).
    - 2. Hypertrophic (hypertrophica).
    - 3. Gangrenous (gangraenosa).
    - 4. Concrementous (concrementosa).
  - III. Exacerbation of chronic pulpitis (chronica exacerbatio).
  - IV. Pulpitis, complicated with periodontitis.

# Classification of pulpitis of our chair

## **Acute pulpitis (acuta).**

1. Traumatic (traumatica):
  - a) at preparing (without or with denudation of pulp);
  - b) at the break of crown or root.
2. Hyperemia of pulp (hyperaemia).
3. Partial (partialis).
4. General (communis).
5. Purulent (purulenta).

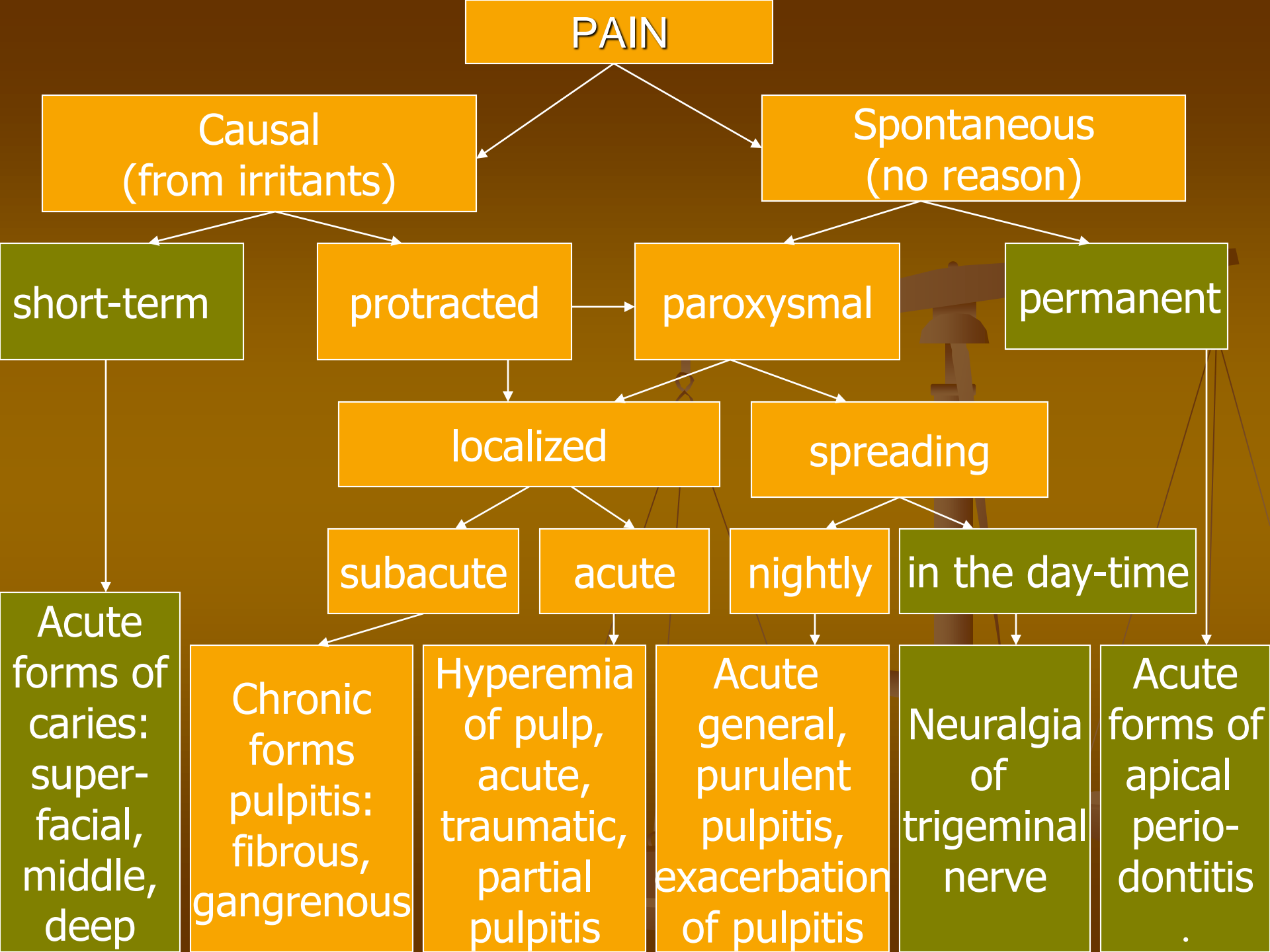
## **II. Chronic pulpitis (p.chronica).**

1. Fibrous (simplex).
2. Hypertrophic (hypertrophica).
3. Gangrenous (gangraenosa).
4. Concrementous (concrementosa).
5. Root (radicis dentis).

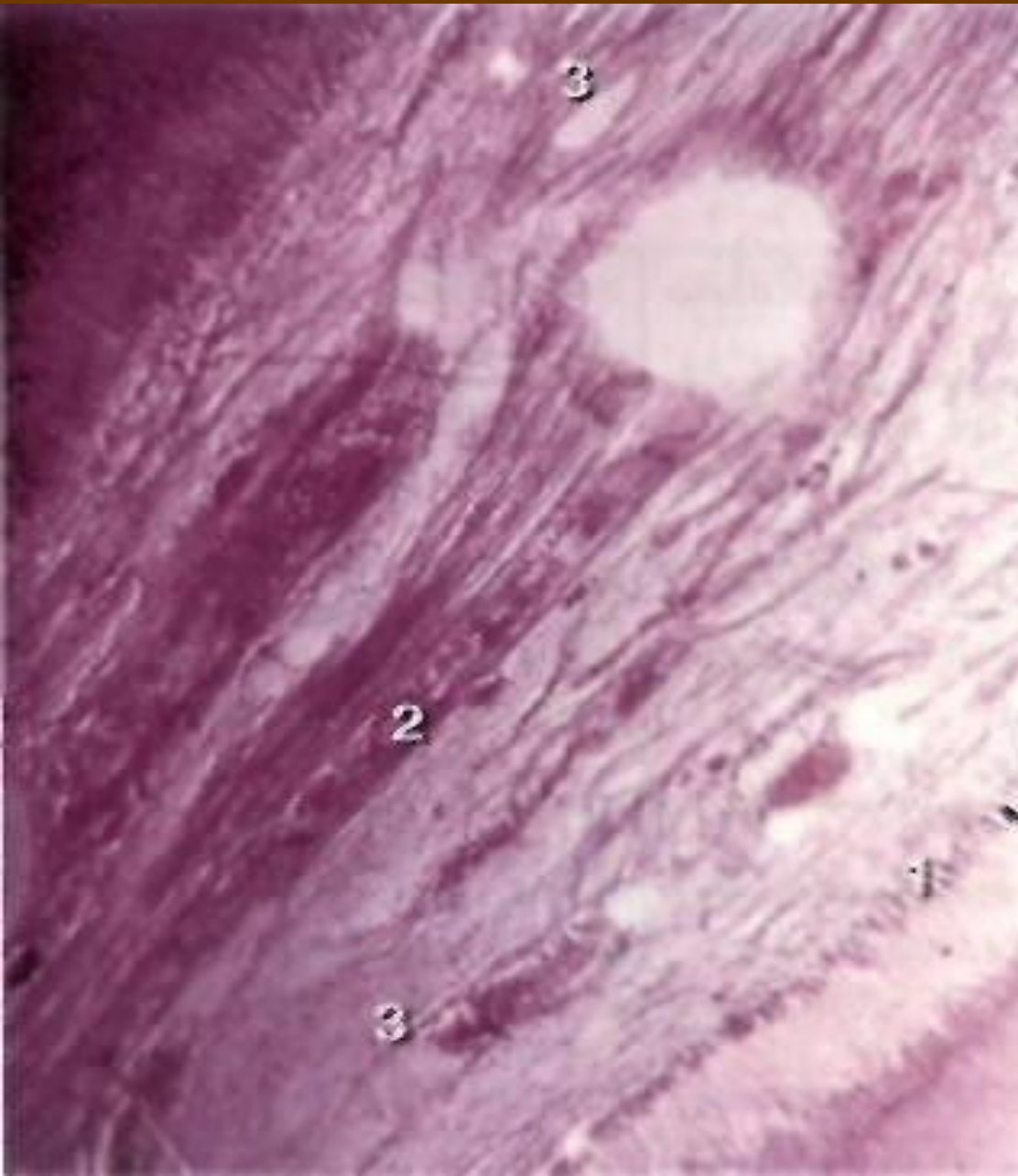
## **III. Exacerbation of chronic pulpitis (chronica exacerbatio).**

## **IV. Necrosis and gangrene of pulp (gangraena et necrosis pulpa).**

## **V. Atrophy of pulp (atrophia pulpa).**



# Chronic fibrous pulpitis



1. Depletion of cellular composition of pulp; Thinning of odontoblastic layers and diminishing of their amount;
2. Excrescence of collagenic fibers of connecting tissue;
3. Gyalinoz of vessels' walls and collagenic fibers.



# Clinic of chronic fibrous pulpitis

**COMPLAINTS** : aching protracted pain from all types of irritants, arising up in transition from a warm apartment in cold and vice versa, pain at sucking from a tooth (if the cavity of tooth is unsealed, a carious cavity is on masticator surface).

**ANAMNESIS** : sharp spontaneous paroxysmal nightly pain which lasted a few days, and then stopped itself or after providing of the first aid (dissection of cavity of tooth); At initially chronic inflammation, a patient can specify on performing of earlier preparing of tooth under a crown, overheat at preparing of car/cav, imposition of filling.

**OBJECTIVELY** : At survey – deep carious cavity or filling;

Probing – the dentine of bottom and walls is softened or dense, pigmented, after removing of which carious cavity is connected with pulp chamber in area of horn of pulp in 70% of cases. Pulp is acutely painful, bleeds. In 30% cases a connecting is not present, but in area of thinning of bottom is acute pain. Percussion (vertical and horizontal) – painless.

Palpation in area of root apex projection - painless.

Thermal diagnostic– painful, pain does not disappear for a long time.

EOD (ETD) – 30 - 40 mA

# Chronic hypertrophic pulpitis



1. Excrescence of granulation tissue - young connecting tissue, with a lot of thin-walled vessels, but with poor innervation;
2. In process of maturing (ripening) of tissue a multi-layered flat epithelium overgrows on its surface (polypus of pulp);
1. On the surface of excrescence disintegration of granulation tissue, leucocytes infiltration is possible.

# Clinic of chronic hypertrophic pulpitis

More frequent meets at persons of young age and children.

**COMPLAINTS** : aching pain at meal of hard food, cleaning of teeth, «sucking» from a tooth (mechanical irritant), bleeding, presence of excrescence - «proud flesh».

**ANAMNESIS** : in the past - acute spontaneous paroxysmal nightly pain, then - protracted aching pain from all types of irritants.

**OBJECTIVELY** : Examination – deep carious cavity, filled with tumor-like excrescence with cyanotic-red color;

Probing – insignificant pain at the surface of excrescence, causes bleeding, but deep probing is painful (in area of ostium of root canal). Outlining by probe round a polypus it is possible to make sure in his connection with pulp (determination of «area of growth»), but not with gum (at hypertrophic papillitis);

Percussion (vertical and horizontal) – painless;

Palpation in area of root apex projection - painless.

Thermal diagnostic – weakly painful, lasts for a some times after finishing of irritant action;

■ EOD – 20-40 mA; X-ray diagnostic: changes are not present or insignificant expansion of periodontal space.



# Chronic gangrenous pulpitis

Develops from an acute purulent or chronic fibrous pulpitis.



1. Crown pulp in a state of gangrenous disintegration, has the appearance of non-structured grainy mass with plenty of colonies of microorganisms, crystals of fat acids, bloody enzyme (hemosiderin)
2. Odontoblasts and collagenic fibers are dystrophic changed;
3. Nearer to the root ostium on a border with disintegration is a line of demarcation from granulated tissue;
4. Root pulp in a state of chronic fibrous inflammation.

# Clinic of chronic gangrenous pulpitis

COMPLAINTS: aching protracted pain from thermal irritants (peculiarly from the hot) , sense of awkwardness (heaviness) in a tooth, bad smell.

ANAMNESIS: in the past - acute spontaneous paroxysmal nightly pain which lasted 3- 5 days, and then stopped itself or after providing of the first aid (dissection of tooth cavity); Or the protracted aching pain from all types of irritants.

OBJECTIVELY : Examination - tooth is changed in a color (greyish tint), deep carious cavity or filling;

Probing - the dentine of bottom and walls is softened or dense, intensively pigmented. In many cases car/cav is widely connected with tooth cavity. Pulp in a state of disintegration, dirty-grey color, painless, has a strong gangrenous smell. There is pain and bleeding at the deep probing (in the ostium of root canals).

Percussion vertical -sensitive, horizontal – painless.

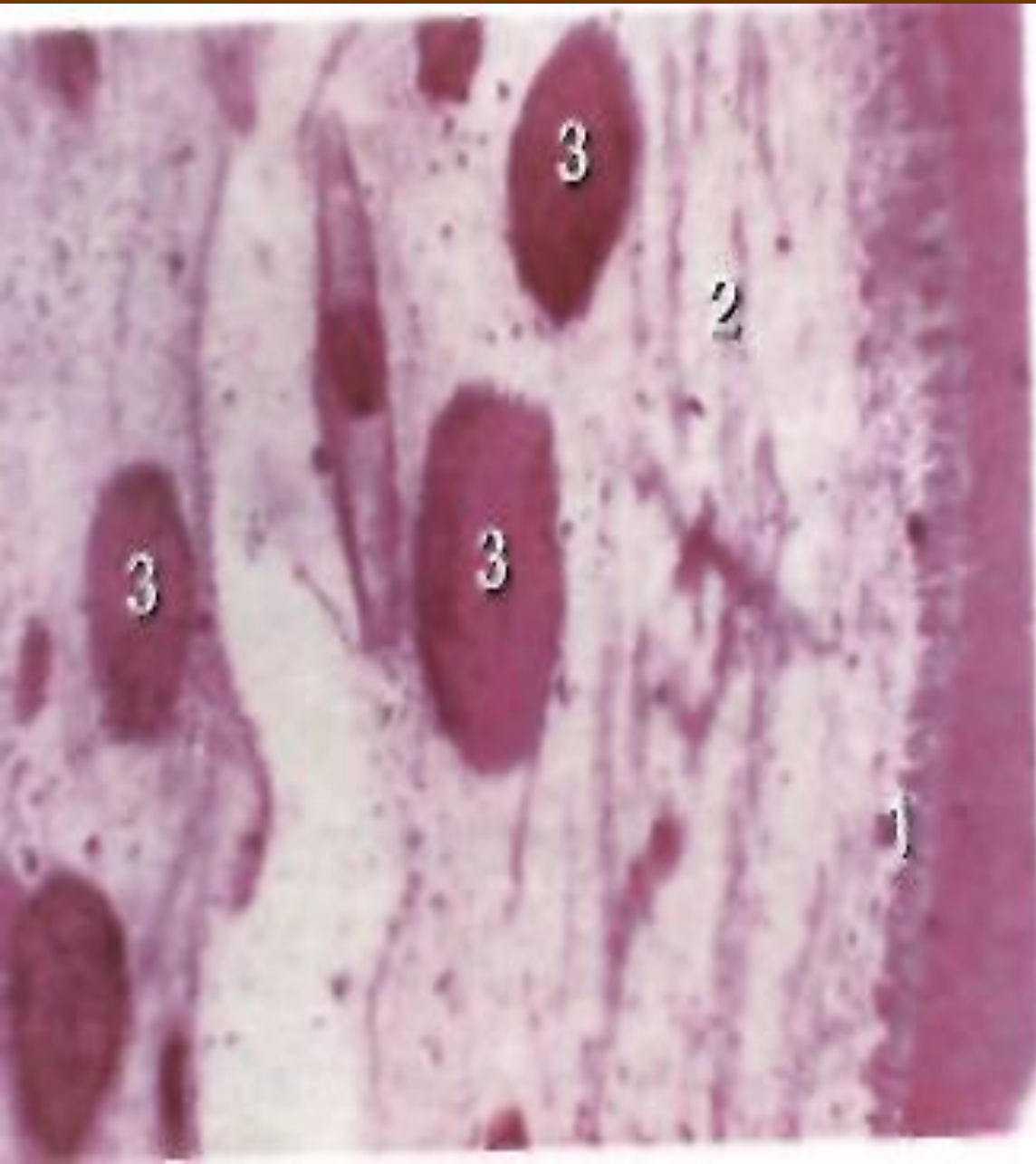
Palpation in area of root apex projection - painless.

Thermal diagnostic : protracted pain appears from hot. EOD: 60-80 mA

X-ray diagnostic : expansion and deformation of periodontal space.

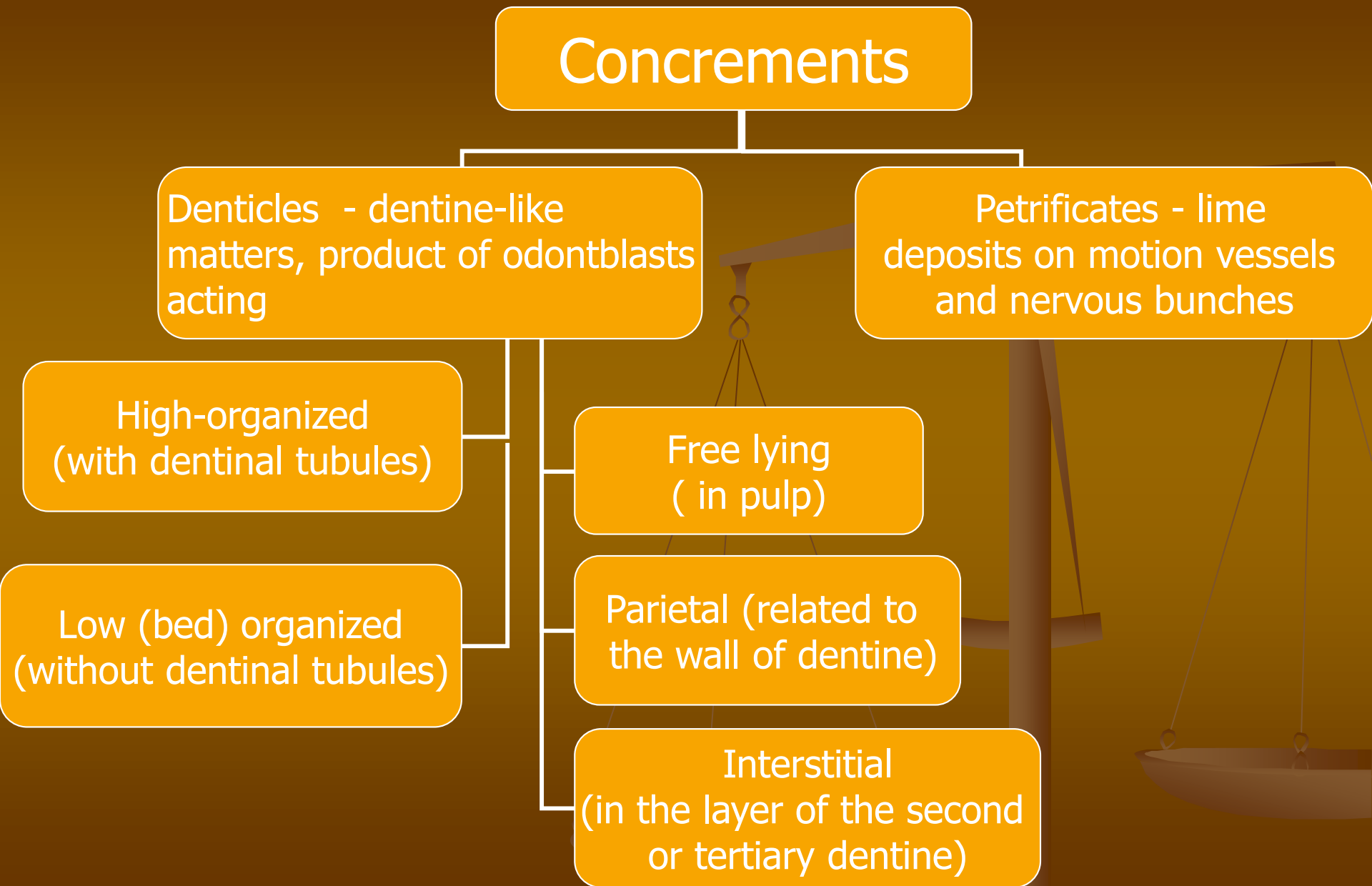


# Chronic concrementous [calculus] pulpitis



- Odontoblasts are vacuolated;
- Tissue of pulp in a state of different degree of dystrophy;
- Concrements or petrificates of different form;
- Gyalinoz of vessels walls and collagenic fibers;
- Root pulp in a state of chronic fibrous inflammation.

# Chronic concrementous [calculus] pulpitis



# Clinic of chronic concrementous [calculus] pulpitis

**COMPLAINTS:** paroxysmal shooting on motion the branches of trigeminal nerve pain which arises up at the sharp moving of body (at getting up on an airplane, lift, jumps in height, on step, at shaking). It flows without symptoms very often, can be discovered by chance at the roentgenologic inspection of nearby teeth.

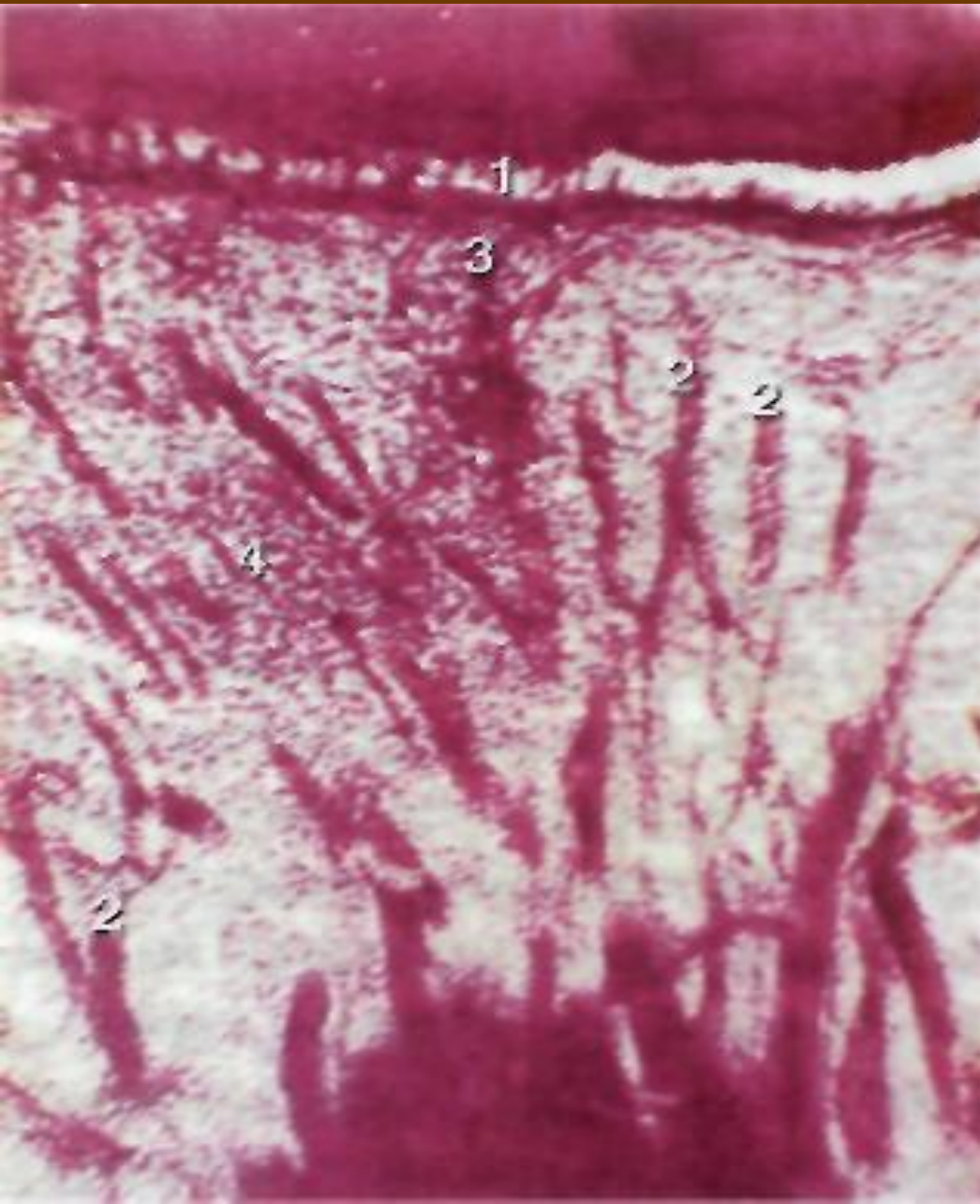
**ANAMNESIS:** a tooth is before treated with the use of odontotropic pastes or not treated with the presence of large cavity.

**OBJECTIVELY :** Examination: tooth with the erased occlusal surface, deep carious cavity or filling; Probing - at presence of cavity - a dentine is dense, pigmented. The cavity of tooth is not unsealed or unsealed in point of area of pulp horn . Probing is painless or sensitive or painfull. Percussion (vertical and horiz.) – painless, can provoke a twinge. Palpation in area of root apex projection - painless.

Thermal diagnostic : weak pain or painless. EOD - in a norm or it is insignificantly increased; X-ray diagnostic : denticles (dentine-like matters of different forms) are in the tooth cavity.



# Exacerbation of chronic forms of pulpitis



1. Reticular dystrophy of odontoblasts which lie under the substitutional (tertiary) dentine;
2. Dilatation of vessels;
3. Edema of tissue;
4. Leucocytes infiltration;
5. Diapedesis of red corpuscles.
6. Production of exudation.

# Clinic of exacerbation of chronic forms of pulpitis

**COMPLAINTS:** acute, spontaneous, spreading on motion of respective branches of trigeminal nerve pain. Attacks last from 1-2 hours to almost uninterrupted, intermissions from 2-3 hours or almost absent. Pain increases at night. Any irritants can provoke a twinge.

**ANAMNESIS:** twinges are disturbed during 2-3 days, duration them increase gradually, and «light intervals» became shorter. Before such attacks have been already, but stopped independently or after providing of the first aid.

**OBJECTIVELY :** Examination - a deep carious cavity, filled by tailings of food or filling material. A tooth can be changed in a color (peculiarly at exacerbation of gangrenous pulpitis).

Probing – car/cav is connected with tooth pulp, acute pain in a perforation point or at the deep probing. Percussion vertical – sensitive, horizontal – painless; Palpation - painless.

Thermal diagnostic - provokes a twinge. EOD - 60-80 mA.

X-ray diagnostic: expansion, deformation of periodontal space.



# Clinic of chronic root pulpitis (condition after partial removing of pulp, residual pulpitis)

Is caused by cariosity of root of tooth (caries of cement) or after the partial removing of pulp as a result of treatment.

COMPLAINTS: aching pain from all types of irritants.

ANAMNESIS: some time ago treatment of pulpitis was carried out under anesthesia or by method of vital or devital amputation, combined method (remaining pulpitis).

OBJECTIVELY : Examination: a deep carious cavity is located in cement and dentine of root, connected with the root canal of tooth or filling on a masticator surface; Probing - at presence of root caries - the dentine of bottom and walls is softened or dense, pigmented, there is connection with root canal of tooth. Pulp is acutely painful, poorly bleeds. Percussion – painless. Palpation in area of root apex projection - painless.

Thermal diagnostic - painful, pain does not disappear for a long time. EOD - 60-80 mA



Bene dignoscitur – bene curatur



Right diagnosing – right treating!

# THANK'S FOR ATTENTION!

