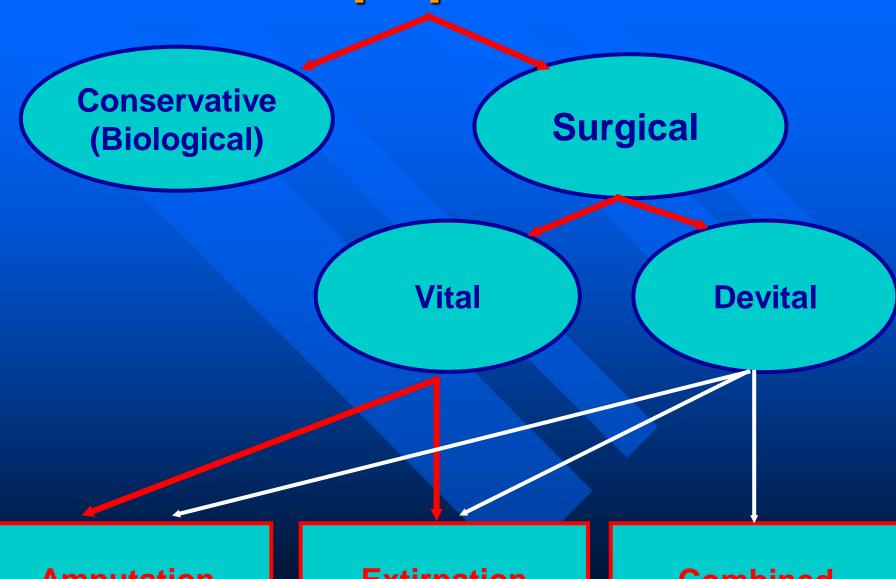
POLTAVA STATE MEDICAL UNIVERSITY THERAPEUTIC STOMATOLOGY PROPAEDEUTICS CHAIR

Treatment of pulpitis by conservative, vital amputation and extirpation methods Lecture for 3-rd year st of nternational facul

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

Methods of pulpitis treatment



Amputation

Extirpation

Combined

Essence of method is using of complex of therapeutic measures, directed on oppressing of microflora and liquidation of inflammatory process with saving maximal integrity of tooth pulp and its functions.

Indications for use by form of pulpitis

- Hyperemia of pulp;
- Traumatic pulpitis;
- Acute partial pulpitis;
- Acute general pulpitis;
- Chronic simple pulpitis.

relative indication

Contra-indications for use by form of pulpitis Acute purulent pulpitis Chronic gangrenous pulpitis Chronic hypertrophic pulpitis Chronic concrementous pulpitis Exacerbation of chronic pulpitis Pulpit, complicated with periodontitis

Conditions for use

- Young age (to 40 years);
- Relative healthy persons with high reactivity of organism;
- Localization of carious cavity within the limits of anatomic crown;
- Absence of pathology in oral cavity (parodontitis).

Contra-indications for use

- Age of patients more senior 40 years;
- Presence of the cardiovascular, endocrine and metabolism diseases (diabetes, hypertonia, heard defects, c/v insufficiency);
- Decrease of EOD below 40 мкА;
- Teeth used under crowns as supports of bridge-like prostheses;
- Localization of c/c near to the gum, on the tooth root;
- Changes in periodontium of causal tooth.

Conservative method Stages of treatment I visitation

- 1. Medicamentous processing of mouth cavity;
- 2. Anesthesia;
- 3. Imposition of cofferdam;
- 4. Preparation of caries cavity:
 - a) disclosing;
 - b) necrotomy;
 - c) formation.



- 5. Washing and medicinal processing of caries cavities: 2% sol. Chloramini, 0.02% sol. Furacilini, 1-2% sol. Microcidi, 0.2% Chlorhexidini bigluconatis, 1-3% sol. Hydrogen peroxide
- 6. Insertion of an treatment lining
 Direct coverage of pulp method,
 supposing imposition of remedy
 on bare pulp.
 Indirect coverage of pulp method,
 supposing imposition of remedy
 without dissection of tooth cavity.
- 7. Filling caries cavity by temporal material (hermetic bandage);





Conservative method of pulpitis treatment

Remedies for affecting the inflamed pulp

- Antimicrobial are antibiotics, sulfanilamyds, oxidants, remedies of nitrofuranium row;
- Antiinflammatory steroid and none-steroid nature (prednisolonum, voltarenum, hydrocortisonum, butadionum);
- Stimulators of metabolic and reparative processes nucleinatum of sodium, methacillum, hydroxide of calcium.

Material type	The name (firm-manufactu

Calcium containing

Water Кальрадент (ВладМиВа), Calasept (Nordiska Dental), suspension

Calcium hydroxide (SPAD/Dentsply),

Calcicur (Voco), Calcipulpe (Septodont)

Varnishes Contsasil (Septodont)

(not

hardening)

hardening

cements

Кальцесил (ВладМиВа), Alkaliner (3M ESPE) Chemical

Dycal (Dentsply), Life (Kerr), Calcimol (Voco)

irer)

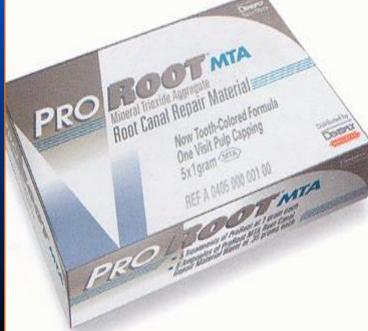
Reocap (Vivadent), Septocalcine ultra (Septodont)

Light Кальцесил LC (ВладМиВа), Эстерфил Са (Диас) hardening Calcimol LC (Voco), Ultra Blend (Ultradent) polymeric materials

Calcium containing treatment liners







Eugenol containing

The pastes
prepared ex
temporo

Paste with oil of cloves (Olium cariophyllorum)
Zinc – eugenol paste

Oficial pastes

Kalsogen Plus (Dentsply) Cavitec (Kerr) Zinoment (Voco)

The combined medical pastes

(Contain antibiotics, hormones, enzymes, essence)

«Pulpomixine»

antibiotics: Framicetin, Polymixin + (Septodont)

hormone: Dexamethazone

Method by Homenko L.I., Musichenko N.I.

Contrycal is mixed with Piromecainum and Novocain

Method by

Heparini, Luroniti, Chonsuridi, Furazolidoni

Urbanovich L.I.

Composition

Dioxidinum, zinc Sulphite, cobalt Sulphite,

"Diozincohim" by Petrushanko V.N. Chymotrypsinum and Calcium hydroxide

Rp: Trypsini
 Chymotrypsini aa 0,005 ED
 Norsulfazoli 0,2
 Boli albi 0,3
 Ol. Caryophylorum q. s. ut fiat pasta
 D.S. pasta for stomatological using
 (by N.F.Danilevskiy, L.A.Chomenco)

Rp: Levomicethini 0,01
Chymotrypsini 0,002
Norsulfazoli 0,2
Natrii chloridi 0,9% - 2 ml
Boli albi q. s. ut fiat pasta
D.S. pasta for stomatological using (by I.I.Kirilenco)

Conservative method of pulpitis treatment

II visitation (in 2-3 day)

- . Completely remove the hermetic bandage;
- 2. Medicinal processing of caries cavities;
- 3. Insertion of Calcium containing treatment lining;
- 4. Insertion of an isolating lining;
- 5. Filling caries cavity by permanent material;
- 6. Polishing of filling.

Essence of method is application of complex of surgical and therapeutic measures, directed on the remove of crown part of pulp, oppressing of microflora, liquidation of inflammatory process, saving of structure and function of root pulp.

Indications for use by forms of pulpit

Convertible forms of pulpit of multirooted teeth:

- Hyperemia of pulp;
- Traumatic pulpit;
- Acute partial pulpit;
- Acute general pulpit;
- * Chronic simple pulpit;
- * Chronic hypertrophic pulpit.

Contra-indications for use by forms of pulpit

- Acute purulent pulpit
- Chronic gangrenous pulpit
- Chronic concrementous pulpit
- Exacerbation of chronic pulpit
- Pulpit, complicated with periodontitis

Indications for use

- Teeth with not finished formation of root apexes;
- Absence of efficiency of conservative method.

Contra-indications for use

- Age of patients senior 40 years;
- Presence of the cardiovascular, endocrine and metabolism diseases (diabetes, hypertonia, heard defects, c/v insufficiency);
- One-root teeth;
- Teeth used under crowns as supports of bridge-like prostheses;
- Localization of c/c near to the gum, on the tooth root;
- Changes in periodontium of causal tooth.
- Decrease of EOD below 40 MKA;

- 1. Anesthesia
- 2. Imposition of cofferdam obligatory condition of method



- 3. Preparing of carious cavity;
- 4. Removal of vault of tooth cavity



5. Amputation of crown pulp with the burs

or excavators



6. Stop of bleeding Remedy:

1 - 3 % solution of hydrogen peroxide; 5 % solution of acidum aminocapronicum; Powder of Fibrinogenum; Membranula fibrinosa isogena; Thrombinum; Spongia haemostatica; Spongia haemostatica collagenica.

7. Imposition of treating liners on the ostium of canals.



Rp: Thymoli 0,1

Eugenoli 10,0

Zinci oxydati q. s.

M. f. pasta

D.S. pasta for stomatological using (by N.F.Danilevskiy)

8. Imposition of permanent filling

It is better to make such treatment in 2 visitations.

In the end of 1 visitation imposition of the temporary seal is carried out. If during 1-2 weeks the complaints do not arise, a temporary filling change at permanent.



Method of vital extirpation

Essence of method-complete removing of pulp (crown and root) under anaesthetizing with subsequent filling of root canals and crown part of tooth.

Method of vital extirpation

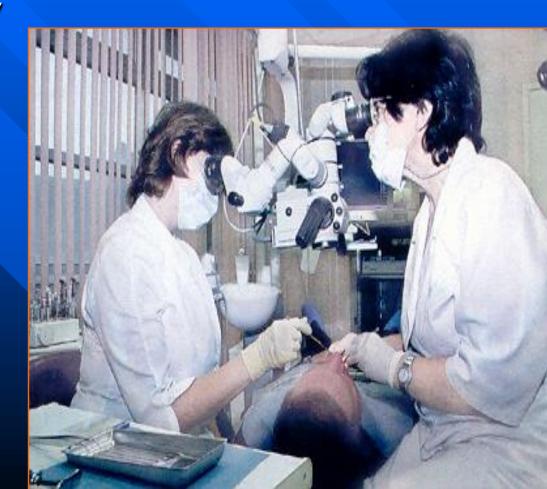
Indications - all forms of pulpit

Contra-indications

- Allergic reaction to anesthetics;
- Seriously ill patient (grave illness)



- 1. Anaesthetizing;
- 2. Isolation of worker fields



- 3. Preparation of carious cavity
- 4. Disclosing of pulp cavity of tooth or trepanation of crown of tooth



- 5. Amputation of crown pulp
- 6. Expansion of ostium of root canals





- 7. Extirpation of root pulp
- 8. Mechanical and medicinal processing of root canals

- The root canal must be passed;
- Mechanical and medicinal treatment of root canal is obligatory regardless from diagnosis;

Requirement to forming of root canal

- Saving of anatomic form
- Saving of the apical narrowing
- Creation of optimum taper

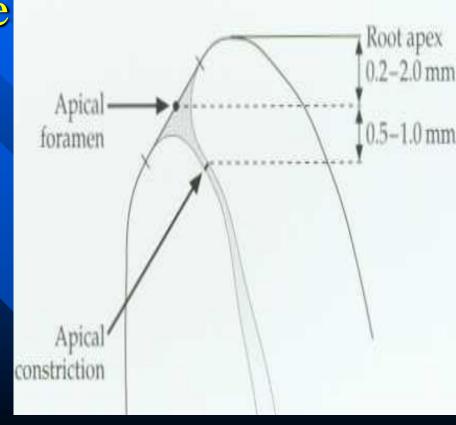
Algorithm of cleaning of canal before obturation

- 5, 25% hypochlorite of sodium (3-4 mines)
- 17% EDTA (3-4 mines)
- ultrasonic treatment (3-4 mines)

Method of vital extirpation Stages of treatment

9. Filling of root canals

Filling of root canal at the level of physiological apex, but not reaching of croentgenologic apex. 1-1,5 MM



Method of vital extirpation Methods of filling of root canals

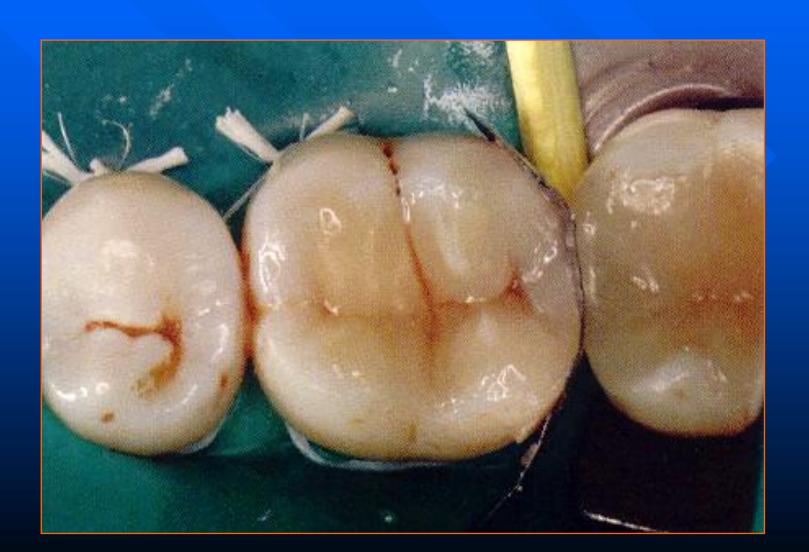
- 1. Obturation of canal with only sealer
- 2. Obturation with cold gutta-percha posts:
 - a) method of one post;
 - b) lateral condensation and its variations
- 3. Obturation with chemically plastificated gutta-percha
- 4. Obturation with a warmed-up gutta-percha:
 - a) vertical condensation
 - b) by the fragmented gutta-percha
 - c) lateral-vertical condensation
 - d) thermomechanical condensation
- 5. Obturation with the thermoplastificated gutta-percha:
 - a) syringe injection or system of Ul'trafil
 - b) bringing on hard core (Termafil)

Method of vital extirpation





Method of vital extirpation Stages of treatment 10. Renewal of anatomic form of tooth





Requirements to materials for treating liners

- Not to cause the irritation of pulp;
- To render antiinflammatory, antimicrobial and odontotropical action;
- To provide the fine hermetisation of dentine;
- To contact with permanent filling materials and dentine
- To have good physical and chemical characteristics.

Materials for treating liners on the base of calcium hydroxide

1.Water suspension of hydroxide of calcium (Calradent, Calasept, Calcicum)

Powder of clean Ca(OH)₂, water or physiological sol. For X-ray contrast the sulfate of barium is added. Unhardenings materials.

Well defunding in tissues.

At a contact with air it turns into inert connection - carbonate of calcium.

Materials for treating liners on the base of hydroxide of calcium

2. Lacquer on the base of calcium hydroxide (Contrasil, Liga)

Fast hardening compositions, containing the hydroxide of calcium, oxide of zinc, resins and solvent on the basis of chloroform.

Reliably protect pulp, but have a weak medical effect.

Materials for treating liners on the base of calcium hydroxide

3.Calcium salicylic cements of chemical hardening (Dycal, Life, Calcesill)

Most the often applied materials for treatment of deep caries and pulpit.

Have low durability, bad adhesion. Dissolve an acetone and alcohol.

Materials for treating liners on the base of hydroxide of calcium and mineral tripleoxyde aggregate



- Materials for treating liners on the base of calcium hydroxide
- 4. Light- hardening polymeric materials, containing hydroxide calcium (Septocal, Ultrablend, Cacesill LS)

Consist of hydroxide of calcium, polymeric resin and X-ray contrast filler.

Have low therapeutic activity.

Method by Homenko L.I., Musichenko N.I. (using of inhibitors of proteolysis)

Explanation - Contrycal reduces high activity of proteolysis enzymes in pulp.

At I-st visit Contrycal is mixed with Piromecainum and Novocain and abandon in the cavity of tooth, and in II-nd - substitute by treating liners.

Method by Urbanovich L.I.

(using of acid mucopolysaccharides with nitrofuranium remedies)

Explanation - heparin, luronit, honsurit slow the flow of inflammation in pulp, reduce an edema, limit an inflammatory process, and furosolidollum is powerful antimicrobial remedy

Method by Danilevsky N.F., Homenko L.I. (using of proteolysis enzymes)

Explanation - enzymes render mucolytic action, causing the diminishing of the stagnant phenomena, tripsinum affects on necrotizing tissues, saving healthy tissues, destroys microbial toxins

Method by Muratova M.T. (using of corticosteroids and antibiotic remedies)

Explanation - corticosteroids possess antiallergic, hyposensitizatic, antishock, antitoxic action, and antibiotics possess bactericidal and bacteriostatic action.

Method by Petrushanko V.N. (using of antimicrobic composition "Diozinkohim")

Explanation - the remedies (dioxidinum, sulphuracid zinc, sulphuracid cobalt, chimotripsinum and hydroxide of calcium) contained in composition possess fine antimicrobial, anti-inflammatory action, stimulate making of replacing (tertiary) dentine and remineralization of dentine of carious cavity bottom.

- XVII c. F. Pfaff has suggested to occlude casually baring pulp by gold cap or earth-flax, beeswax, cardboard.
- 1893 y. M.M. Chemodanov scientifically explains partial remove of crown pulp and treatment of root canal, processing of stump with formalin and laying of iodoform paste on root pulp.

- 1912 y. Miller, Sacks, Romer offer conservative treatment of pulpit with antiseptics
- 1924 y. G.Fisher makes a report about the single session (in one visitation) method of treatment of pulpit under anesthesia
- 1934 y. G.L.Feldman, Neyvirt, Gelner use dentine sawdust to affect the inflamed pulp for converting of it into dentin-like tissue

- 1934 y. I.O.Novick offers remedy «solvin», containing antistaphiloccus and antistreptococcus bacteriolisins. The method got the name «biological».

 Y.I.Gutner, Y.S.Pekker offer at pulpotomy to apply iodoform.
- 1946 y. D.A.Entin, A.S.Levinson modify a method, offering to use acidophilic bacillus and pyogenic cocci for treatment of pulpit

- 1947 y. E.S. Yavorskaya applies paste on the basis of norsulfasolum and argil for conservative treatment of pulpit
 - M.A.Berman proves the positive influencing on remineralisation and making of replacing dentine of hydroxide of calcium.
- 60-s y.. beginning of the use for treatment of the XX c inflamed pulp of antibiotics, sulfanilamyds, enzymes