DANYLO HALYTSKY LVIV NATIONAL MEDICAL UNIVERSITY

Department of Pediatric Dentistry

Methodological Recommendations

Pediatric Therapeutic Dentistry

for preparing of specialists of the second (master) level of higher education
4th year,8th semester

(for students)

Lviv 2022

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THEMATIC PLAN OF THE PRACTICAL CLASSES

Pediatric Therapeutic Dentistry

	Topic	Hours
1	Periapical inflammation of the primary teeth in children. Peculiarities of clinical course. Diagnostics, roentgenological diagnosis, differential diagnostics. Influence of the periapical inflammation of primary tooth on the permanent tooth follicle.	3
2	Differential diagnosis of pulp and periodontal diseases of temporary teeth. The effect of periodontitis of a temporary tooth on the beginning of a permanent tooth. X-ray diagnosis of dental caries and its complications in children. Limits of conservative treatment of temporary teeth with periodontitis	3
3	Choice of treatment method for periodontitis of temporary teeth. Peculiarities of endodontic treatment of periodontitis in temporary teeth. Forecast	3
4	Periodontitis of permanent teeth in children. Patterns of clinical course. Diagnostics, x-ray and differential diagnosis.	3
5	Peculiarities of endodontic interventions in permanent teeth with an unformed root and necrotic pulp. Peculiarities of endodontic interventions in permanent teeth with a formed root and necrotic pulp. Forecast.	3
6	Mistakes and complications in endodontic treatment of temporary and permanent teeth in children. Their prevention and elimination.	3
7	Traumatic lesions of temporary teeth in children. Causes, clinic, diagnosis. Features of treatment of traumatic lesions of temporary teeth in children. Peculiarities of treatment of traumatic lesions of permanent teeth in children	3
8	Final lesson. Protection of medical history.	3
	In total	24

THEMATIC PLAN OF THE SELF-WORK

Pediatric Therapeutic Dentistry

	Topic	Hours
1	Anatomical features of the structure of temporary teeth in children. Draw a schema of root canals in all groups of temporary teeth.	4
2	Periods of development of temporary and permanent teeth. Radiological signs of acute and chronic periodontitis of temporary and permanent teeth.	4
3	Techniques of instrumentation and features of irrigation of root canals of temporary teeth.	4
4	Anatomical features of the structure of permanent teeth in children. X-ray stages of root formation of permanent teeth. Draw a scheme of root canals in all groups of permanent teeth.	4

5	Apexification: techniques, modern materials, techniques.	4
6	Modern techniques of instrumentation of root canals of permanent teeth (manual and machine). Modern endodontic instruments.	4
7	Diagnostic and radiological criteria of deep caries, acute and chronic pulpitis, acute and chronic periodontitis of temporary teeth in children. To make the scheme of differential diagnostics of these diseases.	4
8	Compile a table of terms for the eruption of temporary teeth and their replacement by permanent ones. Compile an algorithm for the examination of a child with an acute injury to a temporary tooth. Scheme of treatment tactics for various types of injuries to permanent teeth (fracture of the tooth crown with and without pulp exposure; root fracture at the level of the neck, in its middle and apical parts).	4
9	Writing a medical history	4
	In total	36

Methods of control

Control of knowledge of discipline is in the form of: current control, which is carried out at each practical lesson and allows to identify the level of mastering of individual elements of the training material. During assessment of mastering of each topic for the current educational activity of the student grades on a 4-point (traditional) scale are given taking into account the approved evaluation criteria for the respective discipline. This takes into account all types of work provided by the curriculum. The student must receive a grade on each topic. Forms of assessment of current educational activities are standardized and include control of theoretical and practical training.

Methods of evaluation of current educational activity:

Theoretical knowledge:

1. Individual oral questioning of theoretical material or theoretical interview.
2. Written theoretical control.

Practical skills:

1.Individual control of practical skills and their results.

Methods of controlling the assimilation of topics.

Theoretical knowledge:

1. Individual oral questioning.
2. Written test solution or computer-based test control.
3. Written theoretical control.

Practical skills:

1. Individual control of practical skills and their results.

Theoretical knowledge:

1. Written assignments of tests of the 2nd level or computer-based test controls.
2. Individual oral survey.

Practical skills:

1.Individual control of practical skills and their results.

Distribution of points that students receive

Conversion of a traditional 4-point scale into a multi-score (maximum 120 points) - the conversion of the total grade of the current performance - is made only after the current lesson that precedes the exam. Conversion is performed by the following algorithm:

- calculates the average mark of the student on the traditional 4-point scale, obtained during the current classes (up to a hundredth grade);

- to obtain a convertible multivariate total assessment of current performance, the average score obtained on the traditional 4-point scale must be multiplied by a factor of 24. The exception is the case when the average on the traditional 4-point scale is 2 points. In this case, the student receives 0 points on a multi-scale;

- the average grade of current achievement is calculated on the total number of lessons, and not on actually attended by the student.

The minimum converted amount of points of current achievement for the discipline "Pediatric Therapeutic Dentistry" is **72 points**.

Exam score is scored in points (traditional 4-point score is not given). The maximum score for an exam is 80 points. The minimum number of points for the exam under which control is considered to be passed is 50 points.

The maximum number of points per course is 200 points.

Marks:

- "**excellent**" - gets a student who fully possesses theoretical educational material on a subject, can use the acquired knowledge to answer a question, substantiate his / her answer; mastered the practical skills provided by the topic of the lesson; solves test tasks from the topic and explains the progress of their solving;

- "**good**" - a student who has full theoretical knowledge of the topic can use the knowledge gained to answer the question, but with some difficulty substantiates his answer; acquired the practical skills foreseen by the relevant occupation; can unlink test tasks from a topic and explain how they are solved;

- "**satisfactory**" - is obtained by a student who does not have sufficient theoretical teaching material on the topic, with difficulty uses the obtained knowledge, cannot substantiate his / her answer; has not sufficiently mastered the practical skills provided by the relevant occupation; Difficult to solve test tasks on a topic;

- "**unsatisfactory**" - is obtained by a student who does not possess theoretical teaching material on the topic, cannot use the acquired knowledge to answer the question and substantiate his / her answer; has not mastered all the practical skills foreseen by the relevant occupation; cannot and does not resolve test tasks from a topic.

PRACTICAL LESSON № 1

Theme: Periapical inflammation of the primary teeth in children. Peculiarities of clinical course. Diagnostics, roentgenological diagnosis, differential diagnostics. Influence of the periapical inflammation of primary tooth on the permanent tooth follicle

Aim of the lesson: To teach the students to diagnose the different forms of the periapical inflammation of the primary teeth in children. To learn with students the peculiarities of structure of the periodontium in children, its change in the process of root formation and resorption of the primary teeth; classification of the periapical inflammation, diagnosis, differential diagnostics of an acute and chronic periapical inflammation of the primary teeth.

Actuality: Periodontitis of primary teeth is a very common pathology of the dental-jaw system in children, which is caused by the rapid development of complications of caries in temporary teeth.

Control of the initial level of knowledge

1. Peculiarities of the structure of the periodontium in children.
2. Function of the periodontium.

3. Anatomical and physiological changes in the periodontium during the root formation and resorptionof the primary teeth in children.

4. Types of physiologic root resorption in primary teeth.

5. Types of pathologic root resorption in primary teeth.

Content of the lesson

Definition:**periapical inflammation (apical periodontitis)** is usually due to spread of infection following death of the pulp.

Etiology. The nature and behavior of lesions that form at the apex of the tooth are a reflection of the conditions that lead to the destruction of the pulp of the associated tooth.

Causes of apical periodontitis:

- infection
- trauma
- chemical irritation
- immune factor/ immunifaction.

I. Infection

1. Dental caries: Dental plaque → Dental caries →Pulpitis → Apical periodontitis

2. Periodontal pocket: the necrotic pulp probably becomes infected by bacteria from the gingival margins, leading to apical periodontitis.

3. Systemic infection (rare).

II. Trauma

1. The pulp sometimes dies from a blow which damage the apical vessels.

2. During endodontic treatment, instruments may be pushed through the apex or side of the root, damaging the periodontal membrane and carrying infected debris from the pulp chamber into the wound.

3. A high filling or biting suddenly on a hard object, sometimes caused an acute but usually transient periodontitis.

4. Occlusal trauma and orthodontic lead to trauma.

III. Chemical irritation:

1. irritant antiseptics used to sterilize a root canal can escape through the apex and damage the surrounding tissue.

2. A root-canal filling may also extend beyond the apex with similar effect.

3. Devital materials.

Clinic of the periapical inflammation of the primary teeth. The most often the chronic granulating periapical inflammation and the exacerbation of the chronic periapical inflammation are observed in the primary teeth in children.

Clinics. In most cases the pathological process is characterized by the absence of pain symptoms. The child primarily complains for the presence of a fistula (possibly with pus allocation), a carious cavity and the tooth's color change. In case of chronic granulating periapical inflammation the carious cavity is located within the parapulpar dentine. Though, it can also be located in the mantle dentine. These clinical features are caused by an acute course of caries in deciduous teeth and imperfect protective function of pulp (during the root growth and resorption periods in particular). That leads to rapid infection spread in periodotium.

Probing of the carious cavity bottom is painless in case of chronic granulating periapical inflammation. Reaction to thermal irritation is absent; tooth percussion is painless or slightly painful. Absence of pain during preparation of the enamel-dentine junction indicates on pulp

destruction and development of the inflammation process in periodontium. Probing of the carious cavity bottom, its connection with the pulp chamber and orifices of root canals is painless in case of periapical inflammation in deciduous teeth. Sometimes, probing may be accompanied by insignificant pain and bleeding as a result of granulating tissue ingrowth into root canals and pulp chamber, especially during the root growth and resorption periods.

In most cases a fistula with growing granulations and purulent excretion is defined on the gingival mucosa in the projection of root apexes or bifurcation of the affected tooth. If there is no fistula, the gingival mucosa is pastose and it has a cyanotic coloring in the sick tooth area.

A destructed alveolar cortical plate and an enlightenment of bone tissue with indistinct contours are defined radiologically in the area of molars' bifurcation and roots apices. Pathological tooth resorption and perforation of the pulp chamber bottom in the bifurcation area are often observed. Destruction of a cortical plate in a permanent tooth follicle occurs in case of the pathological process extension to the permanent tooth germ.

Chronic granulating periodontitis in deciduous teeth should be differentiated with the following diseases:

— chronic moderate caries; it is characterized by pain during preparation of the enamel-dentine junction;

— chronic fibrous and gangrenous pulpitis; in this case probing of an exposed pulp horn and root canal orifices is accompanied with an acute pain reaction; there are no radiological changes;

— pulpitis, complicated with a focal periodontitis; probing of a disclosed pulp horn provokes acute pain and bleeding.

In case of chronic periapical inflammation segments of bone tissue destruction in the periapical and in the bifurcation area are defined radiologically.

There are next differential-diagnostic features of chronic granulating periapical inflammation: presence of a fistula with purulent excretion and grown granulations on the swell, hyperemic gingival mucosa in the area of a pathological process; destructive changes in the periapical and bifurcation area of the affected tooth (radiologically defined), and the absence of pain during preparation of the enamel-dentine junction.

Chronic fibrous periapical inflammation is practically not diagnosed in deciduous teeth.

Chronic granulomatous periapical inflammation is very rare in deciduous teeth. It may develop in the root stabilization period of deciduous tooth development.

Aggravation of chronic periapical inflammation in deciduous teeth is the second frequent disease.

Clinics. Patients complain on a constant pain which increases gradually, especially during biting on the causative tooth.

Children refuse food. In case of purulent inflammation and acute periosteal reaction the patients' general condition worsens rapidly due to fever and general intoxication. Parents notice the following features: facial skin paleness; weakness; headache; disturbed sleep and appetite. An objective examination defines a carious cavity of varying sizes or a filling in the causative tooth. Pulp chamber can be closed or exposed. A purulent exudate can appear during the cavity exposure. The tooth is mobile due to the exudate accumulation in periodontium.

The gingival mucosa in the affected tooth area is hyperemic, swell and painful during palpation. In case of periosteal reaction development, smoothness of a mucobuccal fold is defined near the causative tooth and the adjacent teeth; the fold is painful during palpation. Sometimes a scar from fistula can be noticed on the modified mucosa. Regional lymph nodes

are enlarged, dense, and painful during palpation.

Radiologically bone tissue destruction area with indistinct contours can be detected in periapical and bifurcation areas in case of aggravation of chronic periodontitis.

Aggravation of chronic periodontitis in deciduous teeth should be differentiated with an acute diffuse pulpitis complicated with a perifocal periodontitis. In case of the second one the tooth reacts on thermal irritation; pulp chamber is exposed and accompanied with an acute pain and bleeding; the radiogram shows destructive changes in periodontium.

Acute toxic periapical inflammation in deciduous teeth can develop as a result of an arsenic paste application for pulp devitalization, or the use of strong antiseptics of phenol group (phenol, camphorated phenol, tricresol, pheresol, resorcin and aldehydes (formalin) for the root canals obturation, especially during the root growth/resorption periods.

Acute traumatic periapical inflammation in deciduous teeth may result from an acute injury (bruise, blow), as well from the errors made by a dentist during endodontic manipulations.

Acute infectious periapical inflammation develops as a perifocal process in periodontium in case of serous or purulent diffuse pulpitis in deciduous teeth.

Clinical manifestation of acute periodontitis and aggrevated chronic periapical inflammation in deciduous teeth are very similar. Patients complain of a continuous pain in a causative tooth; the pain reinforces at biting or touching it with a tongue. The tooth may be intact in case of an acute trauma or it may have a carious cavity. In case of acute toxic periodontitis pulp chamber is partially or completely disclosed. Acute pain from vertical percussion is the main clinical feature.

The gingival mucosa in the causative tooth area is swell and hyperemic. Features of regional lymphadenitis are not defined in most patients; however, there is insignificant hyperadenosis and soreness at palpation in some children.

There are no radiological changes in periodontium. Acute periodontitis should be differentiated with the aggravation of a chronic periodontitis, basing on the history data, as well as the radiological examination results (presence of destructive changes in periodontium and bone tissues).

Chronic periapicalperiapical inflammation can lead to the following complications:

- expansion of the pathological process on the permanent tooth follicle which can cause its death;
- infication of the permanent tooth follicle on the early stages of its mineralization can cause the local enamel hypoplasia formation;
- spreading of the inflammatory process on the follicle can cause its death, and as the result the sequestration of follicle can occur;
- the long lasting chronic periapical inflammation can lead to the changes of the permanent tooth follicle location which clinically is observed as oral or vestibular tooth location after the tooth eruption or torsivertion;
- destroying of the bone between primary tooth and permanent follicle due to expansion of the granulated tissue can cause the prematurely tooth eruption with low level of the enamel mineralization and risk of caries development;
- premature primary tooth extraction caused by chronic periapical inflammation, especially during the period of the root formation and at the beginning of their stabilization can lead to the permanent tooth retention, delaying of its eruption and formation of the orthodontic anomalies;

- expansion of the chronic inflammatory processes on the adjacent follicle in some causes follicular cyst formation.

Knowledge level control

1. Peculiarities of the clinical course of the acute infectious periapical inflammation of the primary teeth.
2. Peculiarities of the clinical course of the acute toxic periapical inflammation of the primary teeth.
3. Peculiarities of the clinical course of the acute traumatic periapical inflammation of primary teeth.
4. Ways of spreading of the exudate at the acute periapical inflammation.
5. Peculiarities of the clinical course of chronic fibrous periapical inflammation of the primary teeth.
6. Peculiarities of the clinical course of chronic granulating periapical inflammation of the primary teeth.
7. Peculiarities of the clinical course of the chronic granulematousperiapical inflammation of the primary teeth.
8. Symptoms of the chronic periapical inflammation at stage of exacerbation at period of root formation, stabilization and resorption.
9. Differential diagnostics of the acute, chronic periapical inflammation and exacerbation of periapical inflammation.
10. Influence of the periapical inflammation on the general state of the child organism.

Test

1. An 11-year-old boy does not have any complaints. During an examination a large carious cavity connected with the tooth cavity was found in the 46 tooth. Percussion of the tooth is painless. The mucous membrane in the projection of the root apexes of the 46 tooth without the change.probing of the root canal opening is painless. What is the provisional diagnosis?

A. Chronic periapical inflammation
B. Acute periapical inflammation
C. Chronic pulpitis
D. Chronic deep caries
E. Chronic medium caries.

2. A patient complaits of continuous, gnawing pain in the 26 tooth which increases during chewing. On the X-ray of the 26 tooth the focus of the bone destruction in the apexes of mesiobuccal root is observed looking as the "tongues of flame". What is the most probable diagnosis?

A. Exacerbation of chronic granulating periapical inflammation
B. Exacerbation of chronic gangrenous pulpitis
C. Chronic fibrous periapical inflammation
D. Chronic granulomatous periapical inflammation
E. Chronic granulating periapical inflammation.

3. A 7-year-old boy,complaints of the presence of a ruined tooth in the lower jaw. Objectively; 2/3 of the crown of the 75 tooth is destroyed; the decayed cavity is connected with the cavity of the tooth, reaction to cold and probing is painless, percussion is painless too. On a

mucous membrane in the area of projection of the root is cicatrix from fistula. On X-ray; the destruction area is near bifurcation with unclear contours. Make a diagnosis.

A. Chronic granulating periapical inflammation
B. Chronic fibrous periapical inflammation
C. Chronic gangrenous pulpitis
D. Chronic granulomatous periapical inflammation
E. Chronic fibrous pulpitis.

4. A 9-year-old child complaits of toothache during eating in a lower left molar. On mesial contact and masticatory surfaces of the 85 tooth there is a deep carious cavity that is connected with the cavity of the tooth. During probing of the conection there is a sharp pain and moderate bleeding. Percussion of the tooth is slightly painful. On the X-ray of the 85 tooth in the bifurcation area and near the root apexes there are areas of bone tissue rarefaction with unclear contours, their uneven resorbtion is observed. What is the most probable diagnosis?

A. Pulpitis complicated by periapical inflammation
B. Chronic granulating periapical inflammation
C. Chronic fibrous pulpitis
D. Aggravation of chronic periapical inflammation
E. Chronic gangrenous pulpitis.

5. An 11-year-old boy, does not have any complaints. Objectiively; in the 46 tooth there is a large carious cavity connected with the cavity of the tooth. Percussion of the tooth is painless. Mucous membrane in the area of projection of the root apexes of the 46 tooth is without any changes. Probing of the root canal opening is painles. What is the provisional diagnosis?

A. Chronic periapical inflammation
B. Chronic deep caries
C. Acute periapical inflammation
D. Chronic medium caries
E. Chronic pulpitis.

Control questions:

1. Describe the anatomical and morphological features of the structure of periodontal tissues at different stages of the development of the primary tooth.
2. Describe the clinical manifestations of acute purulent periapical inflammation of the primary tooth.
3. List the patterns of clinical manifestations of chronic periapical inflammation in primary teeth.
4. Describe the clinical and radiographic picture of chronic granulating periapical inflammation of the primary tooth.
5. Describe the clinical manifestations of exacerbation of chronic periapical inflammation of the primary tooth.
6. With what diseases it is necessary to carry out differential diagnosis of acute periapical inflammation of the primary teeth.
7. With which diseases differential diagnosis of chronic periapical inflammation of the primary teeth should be done.

List of practical skills:

1. To master the skills of diagnostics of various forms of periapical inflammation of the primary teeth in children.
2. To master the methods of differential diagnosis of various forms of periapical inflammation of the primary teeth in children.

PRACTICAL LESSON № 2

Theme: Differential diagnosis of pulp and periodontal diseases of temporary teeth. The effect of periodontitis of a temporary tooth on the beginning of a permanent tooth. X-ray diagnosis of dental caries and its complications in children. Limits of conservative treatment of temporary teeth with periodontitis.

The aim of the lesson: **to** learn how to differentiate between pulp and periodontal diseases. To determine the limit of conservative treatment of periodontitis of temporary teeth in children.

Actuality**:** Complicated dental caries refers to diseases of the maxillofacial area, which make up the largest group of dental diseases. Correct and timely diagnosis of diseases of the pulp and periodontium allows timely and correct treatment and thus prevent the further development of inflammatory processes of SCD, which is extremely important for the harmonious development of the child's body.

Control of the initial level of knowledge:

- Classification of dental caries
- Classification of pulpitis of temporary teeth
- Classification of periodontitis of temporary teeth
- Clinical signs of pulp and periodontal diseases
- Types of root resorption in temporary teeth

Lesson content:

Chronic periodontal diseases can often be asymptomatic, which complicates timely diagnosis and contributes to the development of significant bone destruction of the alveolar process. Quite often, detection of chronic inflammatory processes of the periodontium is an accidental finding during diagnostic or routine radiological examinations of patients. Knowledge of the clinical and radiological features of periodontal diseases makes it possible to correctly differentiate and, accordingly, correctly choose the methods of treatment of these pathologies.

Chronic granulating periodontitis should be differentiated from:

- chronic medium caries, which is characterized by the occurrence of pain during the preparation of the enamel-dentine connection; which is not observed in the presence of chronic inflammation of periodontal tissues;

- chronic fibrous and gangrenous pulpitis (characteristic sharp pain when probing the connection between the carious cavity and the cavity of the tooth and root canal cells);

- pulpitis complicated by focal periodontitis (characteristic severe pain and moderate bleeding when probing the open pulp horn).

Chronic fibrous periodontitis in temporary teeth is rarely diagnosed. It is mainly asymptomatic, there are no pain complaints in most cases. The tooth is mainly intact or sealed, less often it is carious. Percussion of the tooth is painless, the mucous membrane of the gums is not changed. Radiographically, the deformation of the periodontal gap is revealed in the form of uneven expansion and narrowing in the areas of hypercementosis. The X-ray symptoms of this pathology are very similar to the changes that appear on the X-ray of teeth with immature roots, namely, at the stage of unclosed apical opening and unformed periodontium. To determine the final diagnosis, it is necessary to take into account the age of the child, the duration of the growth period and the formation of roots in different teeth.

Chronic granulomatous periodontitis in temporary teeth is observed very rarely , it develops more often during the period of stabilization of the roots of a temporary tooth, this form is observed much more often in permanent teeth. The clinical picture is mildly symptomatic. In some cases, during palpation of the transitional convolution in the area of the projection of the root tip, soreness and slight hyperemia are observed. Percussion is weakly positive, probing and thermal testing are painless. The carious cavity can connect with the pulp chamber. Radiography plays the main role in the diagnosis of the process. Chronic granulomatous periodontitis manifests itself in the form of destruction of bone tissue of a rounded or oval shape with clear

contours. The transition of the periodontal line directly into the bone defect is characteristic. The bone tissue around the granuloma may not be changed, sometimes it is compacted and sclerosed.

Chronic granulomatous periodontitis should be differentiated from :

- chronic deep caries (characteristic appearance of pain during preparation of the enamel-dentine connection, as well as sensitivity of the tooth to the action of thermal stimuli) ;

- chronic fibrous and gangrenous pulpitis complicated by focal periodontitis (characteristic sharp pain when probing the connection between the carious cavity and the cavity of the tooth and the eye of the root canals in fibrous pulpitis and pain from hot stimuli in gangrenous pulpitis)

- granulating and fibrous chronic periodontitis (destruction of bone tissue in the granulating form of periodontitis does not have clear outlines; its fibrous form is characterized by the expansion of the periodontal gap and preservation of the integrity of the cortical plate of the alveolus).

Exacerbation of chronic periodontitis in temporary teeth ranks second in frequency. This process is facilitated by a decrease in the immunological resistance of the child's body, as a result of hypothermia, the transfer of acute infectious diseases, as well as somatic diseases that are accompanied by a deficiency of systemic immunity.

Chronic periodontitis in the stage of exacerbation is characterized by pronounced clinical symptoms and a rapid course.

The phase of serous inflammation is short-lived and turns into purulent within a day, and the peculiarities of the anatomical structure of the jaws in children (low degree of mineralization of the cortical layer and bone tissue, thin trabeculae of the spongy substance, large bone-marrow spaces, wide Volkmann and Haversian canals) contribute to the spread of exudate from periosteum, abscess formation and phlegmon.

For acute chronic periodontitis of the temporary teeth, the patient's complaints (constant pain that worsens when biting on the causative tooth), clinical complaints (dark ring of the tooth, the presence of a fistula or a scar after it against the background of a swollen, hyperemic, painful mucous membrane when palpating have diagnostic value, sharply painful percussion, tooth mobility and radiological signs (destruction of the cortical plate of the alveolus and bone in the area of the furcation and apices of the roots of temporary teeth).

Control of the level of knowledge:

- make of differential diagnosis of chronic periodontitis and moderate caries
- make of differential diagnosis of chronic periodontitis and fibrous pulpitis
- features of differential diagnosis of various forms of chronic periodontitis
- X-ray diagnosis of pathological and physiological resorption of the roots of temporary teeth in
- X-ray differential diagnosis of various forms of chronic periodontitis of temporary and permanent teeth

Oriented test tasks:

1. The parents of a 6 -year-old child complain of pain in the area of the upper molars on the right side. Objectively: there is a carious cavity on the distal surface of tooth 54 within the softened parapulpal dentin, which does not exposed. Probing the bottom of cavity is painless, there is no pain reaction to temperature stimuli. Instead, percussion of the tooth is sharply painful. On the swollen, hyperemic mucous membrane of the alveolar gums in the projection of the root apices of tooth 54, there is an opening of a fistula, with pus discharge. Make a diagnosis:

A. Exacerbation of chronic periodontitis

B. Acute purulent periodontitis

S. Acute serous periodontitis

D. Acute pulpitis complicated by periodontitis

E. Acute purulent pulpitis

2. A 7-year-old child complains of acute pain in the area of the lower jaw molars on the right, which appeared yesterday, and is gradually increasing. The child also notes pain when touching the teeth, inability to chew food. Objectively: hyperemia and pain during palpation of the mucous membrane in the area of teeth 84, 85. Percussion of tooth 84 is strongly positive , 83, 85 is weakly positive. Tooth 84 – there is a large filling, the tooth is slightly discolored. What method of differential diagnosis should be used to make a final diagnosis?

A. Periapical X-ray

B. Cold test

C. Temporary restoration

D. Probing of the tooth - gingival connection

E. EOD

3. The parents of a 3.5 year old child complain on the destruction of the child's frontal teeth of the upper jaw. Objectively: crown parts of 51,61 and 62 teeth complitely destroyed, the probing of the root canals orifices is painful, accompanied by significant bleeding. There is no reaction to cold stimuli. Percussion is painless. The mucous membrane of the gums in the area of the front teeth of the upper jaw is cyanotic, pasty. On the X-ray: there is destruction of bone tissue in the area of the apices of 51, 61, 62 teeth. What is the most likely diagnosis?

A. Chronic granulating periodontitis

B. Chronic gangrenous pulpitis

C. Exacerbation of chronic periodontitis

D. Chronic hypertrophic pulpitis

E. Pulpitis complicated by periodontitis

4. During the x-ray examination of an 8-year-old child who complains of pain when biting on a tooth on the upper jaw on the right, a focus of bone destruction was found on the apex of the roots of tooth 55. What pathology is characterized by the destruction of bone tissue on the apices of the roots?

A. Chronic periodontitis

B. Acute periodontitis

C. Chronic gangrenous pulpitis

D. Chronic hypertrophic pulpitis

E. Acute pulpitis complicated by acute periodontitis

5. A 12-year-old child complains on a change in the color of tooth 11. The tooth began to turn gray after a traumatic injury that occurred 2 months ago. After the trauma, the tooth stopped bothering her within a week, the patient did not looked for the treatment. What pathology should be suspected and differentiated from each other in this case?

A. Chronic pulpitis, chronic periodontitis

B. Chronic gangrenous pulpitis, acute periodontitis

C. Chronic deep caries, chronic pulpitis

D. Acute deep caries, cyst

E. Acute deep caries, chronic pulpitis

PRACTICAL LESSON № 3

Theme: Choice of treatment method for periodontitis of temporary teeth. Peculiarities of endodontic treatment of periodontitis in temporary teeth. Forecast.

Aim of the lesson: To learn with students the roentgenological diagnosis of caries and its complications. To teach the students to diagnose caries and its complications with using roentgenological pictures.

Actuality:Dental caries and its complications account for the largest group of dental diseases. In the diagnosis of these diseases, along with clinicallarge role belongs to the radiological method, which allows to determine the nature and extent of the pathological process, to identify a number of symptoms that can not be established by other methods of research, to conduct differential diagnosis.

Control of the initial level of knowledge

1. Classification of caries of the teeth in children.
2. Pathomorphological peculiarities of caries.
3. Classification of pulpitis in children.
4. Classification of the periapical inflammation in children.
5. Types of the physiological and pathological resorption.
6. Peculiarities of the course of the pathological process in the periodontium depending on the stage of root formation.

Content of the lesson

Dental X-rays are pictures of the teeth, bones, and soft tissues around them to help find problems with the teeth, mouth, and jaw. X-ray pictures can show cavities, hidden dental structures (such as wisdom teeth), and bone loss that cannot be seen during a visual examination. Dental X-rays may also be done as follow-up after dental treatments.

The following types of dental X-rays are commonly used. The X-rays use small amounts of radiation.

- Bitewing X-rays show the upper and lower back teeth and how the teeth touch each other in a single view. These X-rays are used to check for decay between the teeth and to show how well the upper and lower teeth line up. They also show bone loss when severe gum disease or a dental infection is present.
- Periapical X-rays show the entire tooth, from the exposed crown to the end of the root and the bones that support the tooth. These X-rays are used to find dental problems below the gum line or in the jaw, such as impacted teeth, abscesses, cysts, tumors, and bone changes linked to some diseases.
- Occlusal X-rays show the roof or floor of the mouth and are used to find extra teeth, teeth that have not yet broken through the gums, jaw fractures, a cleft in the roof of the mouth (cleft palate), cysts, abscesses, or growths. Occlusal X-rays may also be used to find a foreign object.
- Panoramic X-rays show a broad view of the jaws, teeth, sinuses, nasal area, and temporomandibular (jaw) joints. These X-rays do not find cavities. These X-rays do show problems such as impacted teeth, bone abnormalities, cysts, solid growths (tumors), infections, and fractures.
- Digital X-rays can be sent to a computer to be recorded and saved.

A full-mouth series of periapical X-rays (about 14 to 21 X-ray films) is most often done during a person's first visit to the dentist. Bitewing X-rays are used during checkups to look for tooth decay. Panoramic X-rays may be used occasionally. Dental X-rays are scheduled when you need them based on your age, risk for disease, and signs of disease.

Knowledge level control

1. Roentgenological signs of the superficial caries.
2. Roentgenological signs of the middle caries.
3. Roentgenological signs of the deep caries.
4. Roentgenological signs of pulpitis in different periods of the depelopment of the primary and permanent teeth.
5. Peculiarities of the roentgenological diagnosis of the chronic granulematousperiapical inflammation.
6. Peculiarities of the roentgenological diagnosis of the chronic fibrous periapical inflammation.
7. Roentgenological diagnosis of the pathological and phisiological rootresorption.

Test

1. The parents of a 6- year-old child complaining about the presence of cavity in the lower right molars. OBJECTIVE: on the chewing surface of the 74 tooth revealed cavity within parapulpar softened dentine. During the necroectomy by excavator having a sharp pain and bleeding. In the projection of the medial-buccal pulp horn was found connection with the cavity of the tooth. Percussion of the 74 tooth is painless. Which radiographs corresponds to this setting.

A. The X-ray observed enlightenment triangular shape on the chewing surface of the tooth, which borders the medial horn pulp chamber. Changes in periodontal projection tops the roots of missing

B. On chewing surfaces of teeth found enlightenment round, connected with a pulp chamber. Around the tops and roots at the bifurcation on X-ray observed diffuse thinning of the bone tissue

C. In the projection of the distal root apex observed enlightenment bone with distinct contours diameter 4mm

D. Found enlightenment of the bone in the projection of the medial root apex rounded shape with a diameter of 6 mm

E. The X-ray observed uneven expansion slot periodontitis.

2. A 7-year-old child come to a doctor complaining with a slight enlightenment rounded form within the enamel on a medial surface of the 65 tooth. Put the diagnosis.

A. The surface caries
B. Middle caries
C. Caries in the stage of spot
D. Secondary caries
E. Deep caries.

3. On the roentgenogram of the 65 tooth the doctor found an enlightenment of round form on distal surface of the tooth that comes to features enamel-dentinal junction. Your diagnosis?

A. Middle caries of the 65 tooth
B. Deep caries of he 65 tooth
C. The surface caries of the 65 tooth
D. Caries under spot of the 65 tooth
E. Initial caries of the 65 tooth.

4. A 10-year-old boy complains of the presence of the cavity in the 46 tooth. During examination a doctor revealed a cavity in the 46 tooth, connected with the cavity of the tooth. Probe of root canal us painless. Percussion of the 46 tooth is painless.In mucous membrane of the alveolar process in the projection of the tops of the roots of the 46 tooth is fistula with purulent secretions. Put the right diagnosis?

A. Enlightenment of the oval form that goes into the tooth cavity. In projection of apex the medial root - enlightenment bone without clear contours

B. Enlightenment on the distal side of the tooth within the enamel. Changes within the periodontal tops no roots

C. In medial wall of the tooth - enlightenment of oval form that comes to features enamel-dentinal border

D. Enlightenment on distal side of the tooth within the enamel. Changes within the periodontal tops no roots

E. There is no correct answer.

5. On the roentgenogram of the 51 tooth a doctor found enlightenment of the irregular shape, connected with the cavity of the tooth. Rounded, clearly limited liquefaction of root canal clearance and located in the upper third of the root. Your diagnosis?

A. Intrapulpal granuloma

B. Cystogranloma

C. Radicular cyst

D. Chronic fibrous periodontitis

E. Chronic granulomatous periodontitis.

Control questions:

1.Describe radiological diagnosis of caries.

2.Name the localization of carious cavities, in the detection of which the possibilities of radiological studies are limited.

3.Name the localization of carious cavities, in the detection of which X-ray examination is given a leading place.

4.Describe the radiodiagnosis of chronic concrementous pulpitis.

5.Describe the radiodiagnosis of chronic apical periodontitis.

6. Describe the radiodiagnosis of chronic apical periodontitis and the growth zone of permanent teeth with unformed root. Differential diagnostics.

List of practical skills:

1. Be able to determine the depth of the carious cavity according to radiological examination.

2. Be able to carry out differential diagnosis of caries, pulpitis and apical periodontitis according to the radiograph.

3. Be able to evaluate the quality of endodontic treatment with the radiological examination.

PRACTICAL LESSON № 4

Theme: Periodontitis of permanent teeth in children. Patterns of clinical course. Diagnostics, x-ray and differential diagnosis

Aim of the lesson: To learn with students the indications for conservative and surgical methods of treatment of the periapical inflammation of the primary teeth. To teach the students to treat the periapical inflammation of the primary teeth.To learn the peculiarities of the conservative treatment of different forms of the periapical inflammation.

Actuality:Periodontitis of temporary teeth is a complication of caries and a fairly widespread pathology of the dentition system in children. It can develop at all stages of development of the root of a temporary tooth (root formation, stabilization and its resorption). Treatment of periodontitis of temporary teeth is a complicated and long process. A properly selected treatment for periodontitis prevents both early tooth extraction and the development of purulent-inflammatory diseases of the maxillofacial area.

Control of the initial level of knowledge

1. Periods of the development of the primary and permanent teeth.
2. Stage of the root formation of the primary and permanent teeth.
3. Terms of the root formation and resorption of the primary and permanent teeth.
4. Anatomical and topographical peculiarities of the structure of the primary and permanent teeth which impact on choice of treatment of the periapical inflammation.
5. Peculiarities of the endodontic treatment of the primary teeth.
6. The impact of the chronic periapical inflammation on the child's organism.

Content of the lesson

The methods of treatment of the primary teeth:

- Conservative treatment with tooth preservation
- Surgical treatment (the tooth extraction).

Indications for the primary tooth extraction:

- The tooth is responsible of the acute septic state;
- The tooth is the source of the acute odontogenic processes (permanent exacerbated periostitis, osteomyelitis);
- the hosts defence system is weakened;
- arresting of the root formation before ending of the root development;
- damaging of the cortical lamina of the permanent tooth follicle by inflammatory process;
- pathological or physiological root resorption more than for 1/3 of its length;
- tooth mobility (II-III degree);
- The crown of the tooth is destroyed and the physiological tooth changing occurs in 18 month;
- Root or tooth floor perforation;
- Inner resorption of the roots;
- Extensive pathological destroying of the bone;
- The failure of the conservative treatment;
- The patients with complicated anamnesis vitae;
- Retained primary tooth with radiographic evidence of the presence of permanent tooth.

The main goal of the conservative treatment of the primary teeth with periapical periodontitis is to eliminate the infection from the periodontium for the maintenance of the physiological root development and prevention of damaging of the permanent tooth.

It can be achieved due to precise mechanical instrumentation, thorough irrigation and subsequent tight obturation of the root canal system.

The choice of treatment methods depends from the etiology of the inflammatory process (infection, traumatic, toxic processes), root development stage (stage of the root growth, phase of the root stabilization, phase of the root resorption), size of the bone lesion and somatic health of the child.

Treatment of the primary tooth in phase of the root stabilization.

Conservative treatment of the primary teeth is pointed at elimination of infection in the periapical tissue, pain relief and prevention of proceeding and spreading of the inflammatory process into adjacent tissue and organs. The purulent effluent which is formed in the periodontium can go out from the periapical tissue by the different ways:

- through the root canal system,
- from the apex towards the periosteum (through the bone structure),
- through the fistulae (exacerbation of the chronic granulated periodontitis),
- through the ligamental space,
- through the tooth extraction.

It is essential to provide outflow of the pus from the periapical tissue through the root canal at the first stage of the root canal treatment.

The first appointment treatment includes:

- anesthesia;
- opening of the pulp chamber and canal orifices;
- initial instrumentation of the root canal system (shaping and cleaning) with considerable quantity of irrigation solution;
- careful opening of the root apex without pushing of the debris behind the apex.

The doctor can leave the tooth opened for one day when the considerable quantity of the purulent effluent is present and there are no possibilities to achieve the dry canal at the first appointment. In these cases the clear recommendation should be referred to the patient:

- frequent mouth soda bath;
- maintenance of the drainage through the root canal (pulp chamber should be opened for all the time; just during feeding it should be closed by the cotton pallet).

The second appointment treatment includes:

- final root canal instrumentation and irrigation with considerable quantity of the irrigation solution;
- drying of the root canal by means of sterile paper points;
- placement of temporary dressing into the root canal;
- placement of temporary crown filling.

The completion of the root canal treatment with the root canal filling can be providing when:

- there is no evidence of edema of the face or transitional fold;
- the tooth is painless;
- there is no tenderness to percussion;
- there is no sensitivity to palpation of mucogingival fold nearby the tooth apex;
- absence of the pus into the root canal;

- the tooth is odour free.

Peculiarities of the endodontic treatment of the temporary teeth.

- Wide opening of the pulp chamber;
- Work-length determination 1-2 mm less than roentgenologically found out;
- There is no necessity to form the tapered canal;
- Mechanical instrumentation should be gently provided as the structure of dentin of temporary root is low mineralized and the root walls are thin;
- Irrigation of the root canal space with un-irritative antiseptic solutions;
- Using of resorbable pastes with antimicrobial effects for permanent root canal obturation.

Knowledge level control

1. Indications for conservative treatment of the periapical inflammation of the primary teeth.
2. Indications for extraction of the primary teeth in case of periapical inflammation.
3. Requirements for antiseptics which are used for medicamentous processing of the root canals of the primary teeth.
4. Requirements to means which are used for the root filling of the primary teeth.
5. Name the paste which are used for the root canal filling of the primary teeth. Indicate their benefits and disadvantages.
6. Principles of treatment of the acute forms of the periapical inflammation of the primary teeth at stage of the root stabilization.
7. Principles of treatment of the chronic forms of the periapical inflammation of the primary teeth at stage of the root stabilization.
8. Peculiarities of treatment of the chronic forms of the primary teeth at stage of root resorption.

Test

1. Parents of a 7-year-old child complained of destroyed 85 teeth. During the examination revealed carious tooth cavity of 85 tooth connected to the cavity of the tooth. Deep probing is painful and accompaied with bleeding. Percussion is painless. Radiological findings in the area of the bifurcation of the roots and apexesof the 85 tooth discovered fire enlightenment bone with unclear contours. Diagnosed chronic granulating periodontitis. How many sessions are optimal for treatment?

A. 2 sessions
B. 5 sessions
C. 4 sessions
D. 1 session
E. 3 sessions.

2. A 4- year- old child complains about the destruction of her front teeth of the upper jaw. OBJECTIVE:the crowns of 51, 61 and 62 teeth completely destroyed, probing of the orifices of root canals is slightly painfull, accompanied by significant bleeding. The response to cold stimuli is absent. The percussion of the teeth is painless. The mucous membrane of the alveolar process

in the area of front teeth of the upper jaw cyanotic,. On the X-Ray - the destruction of an alveolar cortical plate in the periapical root area of the 51,61,62 teeth. What is the most likely diagnosis

A. Chronic granulating periodontitis
B. Exacerbation of chronic periodontitis
C. Chronic gangrenous pulpitis
D. Chronic hypertrophic pulpitis
E. Pulpitis, periodontitis complicated.

3. A 7- years-old child complaining about the presence of the destroyed tooth on the lower jaw. OBJECTIVE:the crown of the 85 tooth is destroyed on 2/3, carious cavity communicates with the tooth cavity , reaction to cold and probing of the 85 tooth is painless. The mucosa membrane in the area of the projection of the root of the 85 tooth - scar from fistula. On radiographs: a destructed alveolar cortical plate and an enlightenment of bone tissue with indistinct contours are defined in the area of molars bifurcaton of the 85 teeth. Put the diagnosis.

A. Chronic granulating periodontitis
B. Chronic gangrenous pulpitis
C. Chronic fibrous pulp
D. Chronic fibrous periodontitis
E. Chronic granulomatous periodontitis.

4. A 7- years-old child complaining about the presence of the damaged tooth on the lower jaw on the left side. OBJECTIVE: the crown of the 75 tooth is destroyed on 2/3, carious cavity communicates with the tooth cavity , reaction to cold stimuli is painless.The mucosa membraine in the area of the projection of the root of 75 tooth- fistula. On radiographs: destruction of bifurcation of the roots of the 75 tooth with indistinct contours. Which filling material should be used for the root canal filling?

A. Eodent
B. Sealapex
C. Phosphate cement
D. AH-plus
E. Sealapex and gutta-percha pin.

5. During a preventive examination a 7- years-old child revealed carious cavity in the 75 tooth. After necrosectomy by excavator appeared connection with the tooth cavity, probing is not painful. On radiographs: the 75 tooth area enlightenment of bone tissue in the area of apex medial root and bifurcation with unclear contours. Cortical plate of the 35 tooth is preserved. Which filling material should be selected in this case?

A. Zinc oxide eugenol paste
B. Sealapex
C. Glassionomer cement
D. Resorcin-formalin paste
E. Phosphate cement.

Control questions:

1.What is the method of treatment of chronic apical periodontitis in primary teeth during the period of root formation?

2. What is the method of treatment of exacerbation of chronic apical periodontitis in primary teeth during the period of root formation?

3. Name the ways of drainage of the periodontal gap.

4. Name the materials for root fillings used in the treatment of apical periodontitis of primary teeth, requirements for them. What determines the choice of filling material?

5. Name the group of medicines used for the general treatment of exacerbation of chronic apical periodontitis and indications for their appointment.

6. What are the criteria for the effectiveness of the treatment of apical periodontitis of the primary teeth in children?

List of practical skills:

1. To master the method of treatment of chronic apical periodontitis in the primary teeth.

2. To master the method of treatment of exacerbation of apical periodontitis of the primary teeth.

PRACTICAL LESSON № 5

Theme: Peculiarities of endodontic interventions in permanent teeth with an unformed root and necrotic pulp. Peculiarities of endodontic interventions in permanent teeth with a formed root and necrotic pulp. Forecast.

The aim of the lesson: To consider errors and complications in diagnosis and treatment periodontitis of temporary teeth in children. Learn to avoid mistakes during diagnosis and treatment periodontitis of temporary teeth in children. To learn methods of eliminating errors during the treatment of periodontitis of temporary teeth in children.

***Actuality*:** In the treatment of periodontitis of temporary teeth in children of different ages, errors can occur both during the choice of the treatment method and at its various stages. It should be noted that odontogenic periostitis is often the result of mistakes made by doctors in children. These and serious complications can lead not only to the premature removal of temporary teeth, to the formation of maxillofacial anomalies and deformations, the development of local hypoplasia, follicular cysts, and the death of the rudiments of permanent teeth. untreated foci of chronic odontogenic infection can lead to the development of such dangerous conditions as the formation of abscesses and phlegmon, which can pose a threat to the child's life. Therefore, it is very important to be able to avoid errors in the diagnosis and treatment of periodontitis of temporary and permanent teeth in children at different age periods, as well as to be able to eliminate them .

Control of the initial level of knowledge:

- Classification of periodontitis.
- Methods of diagnosing periodontitis.
- What diseases should differential diagnosis of periodontitis be carried out?
- Requirements for means used for obturation of root canals of temporary teeth in .

Lesson content : Errors that lead to the development of complications occur in stages diagnosis and treatment of periodontitis, as well as in the long term after treatment.

The following complications that arise during the treatment of periodontitis are distinguished :

- Complications arising in the process of opening the tooth cavity (insufficient opening of the tooth cavity, perforation of the wall or bottom of the tooth cavity)

Insufficient opening of the tooth cavity (creating access to the root canals) leads to a complicated search for the root canals, as a result, not all root canals are adequately treated with instruments during the treatment process, which, in turn, leads to the occurrence of remote complications. Insufficient opening of the tooth cavity can also lead to breakage of the endodontic tool during operation. Reasons: ignorance of the topography and anatomy of the pulp cavity. How to avoid it? When creating access, it should be taken into account that the cavities of

temporary teeth are quite voluminous and require significant opening to create adequate access to the canals. During the opening of the tooth cavity, all undercuts should be removed with a bur and vertical walls of the cavity should be formed without overhanging edges

Perforation of the wall or the bottom of the tooth cavity occurs due to ignorance of the topography and anatomy, incorrect inclination of the bur during the opening of the cavity, in the absence of control over the depth of immersion of the bur during preparation. Treatment consists in immediate closure of the perforation with materials based on MTA or B iodentin. It should be taken into account that the use of MTA in the coronal part of the tooth may lead to the appearance of tooth discoloration in the future, so it would be more justified to use B iodentin, which does not lead to a change in the color of the tooth.

- Complications arising during root canal treatment

- excessive expansion of the canal without a change in its shape or with a change in its shape, excessive expansion of the canal in the middle third and on the inner curvature of the root, which can lead to the so-called ribbon perforation of the root, a change in the shape of the canal and displacement of the apical opening (transportation of the canal),

- blockage of the canal lumen by dentinal debris, formation of an apical expansion or ledge, lateral perforation of the root wall, apical perforation of the root canal wall, perforation of the root canal wall as a result of its thinning due to excessive expansion, excessive expansion of the apical opening, breakage of the instrument in the occipital part of the canal, breakage of the instrument in the apical part of the canal, mechanical injury to the periodontium, chemical injury to the periodontium, pushing infected putrid masses past the apex of the root, subcutaneous emphysema, aspiration of the endodontic instrument, swallowing of the endodontic instrument.

These complications can be avoided by understanding the anatomy of the root canal, prior practice of manual skills of using endodontic instruments on removed or phantom teeth, following algorithms and rules for using endodontic instruments, working with a rubber dam (preventing aspiration of endodontic instruments).

Main focus should be pointed on preventing of complications such as instrument breakage, as well as **life-threatening complications** such as instrument **aspiration** and **swallowing** the endonontic equipment.

To prevent breakage of the instrument in the canal, the doctor must follow the following instructions:

- Use high - quality disposable instruments;
- Carefully inspect tools before, during and after work to detect deformations
- Use tools in a strict sequence of calibers ;
- In no case do not use tools that have been previously deformed;
- Work in a wet environment, that is, using disinfectant solutions and gels for chemical expansion of the root canal;
- Do not exert excessive pressure on the tool during mechanical processing of channels.
- work with new tools

To prevent aspiration and swallowing of the tool, work with a rubber dam and fix the tool well. In case of this complication, the dentist should immediately refer to other specialists - an otolaryngologist or a surgeon. On the basis of X-ray examinations , the localization of the tool is established, after that the appropriate treatment method is chosen (usually removal of the fragment of the endodontic tool using a microscope or bypassing the fragment of the tool), if necessary - surgical intervention.

- Complications arising in the process of obturation of the root canal and after it (overfilling of the root canal with paste or sealer, removal of filling material or gutta-percha

outside the boundaries of the root canal, insufficiently dense or complete obturation of the root canal, longitudinal fracture of the root, neuropathy of the lower alveolar nerve due to compression or irritation of the nerve in the mandibular canal by obturating material of the root canal, pain after filling , discoloration of the crown of the tooth - discoloration).

The main criterion for evaluating periodontitis treatment methods is long - term results (within 3 to 6 years), obtained on the basis of clinical and radiological examination. It has been proven that 3 months after high-quality filling of root canals, a partial recovery of bone tissue is observed in the apical area, after 6 months - a significant recovery of bone tissue, after 12-24 months - complete regeneration of bone tissue should occur.

A mistake during the treatment of periodontitis can be considered long-term and multi-session treatment, since with each subsequent visit the risk of infection of the root canal and periodontal tissues increases.

In the treatment of periodontitis, mistakes can be made in determining indications to the limit of conservative treatment, which have significantly expanded after the introduction of modern means of medicinal treatment of root canals and their filling with the latest materials. However, during the treatment of temporary teeth with chronic periodontitis, a number of factors should be taken into account, such as: the stage of development of the root of the temporary tooth, the presence of previous treatment, the time until tooth replacement.

The prevention of complications during the treatment of periodontitis in children consists in the adequate choice of the treatment method and the correctness of the medical manipulations performed.

Control of the level of knowledge acquisition:

- Causes of complications during the treatment of periodontitis.
- Methods of their elimination.
- Complications arising in the process of opening the tooth cavity.
- Complications arising during root canal treatment.
- Complications arising in the process of obturation of the root canal and after it.
- Tactics of a doctor in case of an overdose of devitalizing paste .
- Doctor's tactics in case of excessive removal of filling material in periapical tissues.
- Tactics of the doctor in case of traumatic injury of periapical tissues.

Oriented test tasks:

1. A 7-year-old boy the radiologist always observes a large oval-shaped lumen that connects to the tooth cavity. Around the apices of the roots - unlimited radiolucency of bone tissue in the form of enlightenment. The compact plate that delimits the follicle of the permanent tooth is preserved. Put the diagnosis.

A. Chronic fibrotic pulpitis
B. Chronic granulomatous periodontitis
C. Chronic granulating periodontitis
D. Chronic fibrotic periodontitis
E. Chronic granulating periodontitis with involvement of permanent follicle.

2. A 10-year-old child complains of the presence of a carious cavity in the lower right tooth. During the examination, a carious cavity exposure was found in tooth 46. Probing the connection and orifices of the root canals is painless. Percussion of the tooth is painless. On the mucous membrane of the alveolar process in the projection of the root apices of tooth 46, there is a fistula with purulent discharge. What clinical picture corresponds to the described radiograph situation?

A. An oval-shaped opening that passes into the cavity of the tooth. In the projection of the apex of the medial root, there is an illumination of the bone tissue without clear contours.

B. Illumination on the proximal-distal wall of the tooth within the enamel. Periodontal changes within the apices of the roots in absent

C. An oval-shaped opening that passes into the cavity of the tooth. In the projection of the apex of the distal root, there is a bone tissue transparency with clearly defined contours.

D. On the proximal and medial wall of the tooth - an oval-shaped lightening that reaches the enamel-dentine border borders

E. On the chewing surface of the tooth, there is an oval-shaped opening that communicates with the tooth cavity. Uneven expansion of the periodontal gap around the top of the distal root .

3. On the radiograph of tooth 74 of a 4-year-old child, there is a round-shaped cavity that communicates with pulp chamber. Around the root apices and in the area of bifurcation, there is an uneven radiolucency of the bone tissue. What diagnosis corresponds to this x-ray picture?

A. Cystogranuloma.
B. Chronic granulomatous periodontitis
C. Chronic fibrotic periodontitis
D. Chronic granulating periodontitis
E. Radicular cyst

4. On the radiograph of the 11th tooth of a 13-year-old boy, an oval-shaped radiolucency is observed on the proximal-distal surface, connected to the pulp chamber. In the projection of the root apex, the destruction of the bone tissue of a rounded shape with clearly defined contours was revealed, the size of the radiolucency reaches 4 mm in diameter. Your diagnosis?

A. Chronic fibrotic periodontitis
B. Radicular cyst
C. Cystogranuloma.
D. Chronic granulating periodontitis
E. Chronic granulomatous periodontitis

5. On the radiograph of tooth 54 of a 4-year-old child, a round-shaped radiolucency was found, which is connected to the pulp chamber in the area of the pulp horn. There are no changes in the area of periapical tissues. Put the diagnosis.

A. Chronic pulpitis
B. Chronic fibrotic periodontitis
C. Deep caries lesion
D. Chronic granulating periodontitis
E. Chronic granulomatous periodontitis

Questions for control:

1. What errors can occur at the stage of carious cavity preparation
2. What errors can occur at the stage of opening the tooth cavity?
3. How can they be prevented?
4. What errors can occur at the stage of passing the root canals of the teeth?
4. How can you prevent their occurrence or correct existing errors?
5. What are the materials for sealing root perforation?

6. What criteria for the effectiveness of treatment of periodontitis of temporary teeth in children will you take?

List of practical skills:

1. Master the technique of opening the tooth cavity and searching for root canals.
2. Master the technique of direct pulp coating and closure of root perforation.

PRACTICAL LESSON № 6

Topic: Mistakes and complications in endodontic treatment of temporary and permanent teeth in children. Their prevention and elimination.

Theme: Periapical inflammation of permanent teeth in children. Peculiarities of the clinical course. Diagnostics, roentgenological diagnosis, differential diagnostics.

Aim of the lesson:

Teach students to diagnose different forms of periodontal teeth in children. To study with students the peculiarities of periodontal structure in children, its changes in the process of formation of permanent teeth roots, classification of periodontitis, diagnosis and differential diagnosis of acute, chronic forms of periodontitis of permanent teeth in children.

Actuality:

Chronic, chronic exacerbated, and acute periodontitis of permanent teeth are very common pathological processes in pediatric therapeutic dentistry. The pediatric dentist should be aware of the regularities of the clinical course of these diseases in children of all ages, be able to diagnose and differentiate diagnostics in order to diagnose and use adequate therapies. It will allow to keep a permanent tooth, as well as to prevent the development of inflammatory processes in the maxillofacial area in children.

Control of the initial level of knowledge

1. Features of periodontal structure in children.
2. Periodontal functions.
3. Anatomical and physiological changes of the periodontium in the process of root formation of permanent teeth in children.

Content of the lesson

In children, the structure of periodontal tissues, and, accordingly, its functions differ instability. At different stages of development of the body of the child as a whole and periodontal in particular, there are progressive and regressive changes that affect the course of physiological and pathological processes.

By Kolesov's classification (1991) etiology of the periodontitis is divided into infectious, traumatic and drug-induced; by localization - apical and marginal; in the clinical course - acute, chronic and exacerbation of chronic; by pathomorphological changes in the tissues acute is divided into serous and purulent, and chronic into fibrous, granulating and granulomatous.

Acute forms of periodontitis of permanent teeth are predominantly toxic, traumatic and infectious in origin.

Acute periodontitis of the permanent teeth is most often the result of trauma (impact or fall of the baby) and is also caused by errors during the treatment of pulpitis. The development of acute toxic periodontitis, especially in the teeth with incomplete root formation, results in the use of devitalizing agents, as well as the use of agents with cytotoxic properties (phenol, camferophenol, tricresol, resorcinol) and aldehydes for antiseptic treatment and filling of root canals. Acute infectious periodontitis accompanies the course of acute or purulent pulpitis of permanent teeth, that is, a perifocal process.

Clinical signs of acute serous periodontitis:

• continuous aching pain in the causative tooth, which is exacerbated by biting;
• feeling of a “grown tooth”;
• the presence of a carious cavity filled with softened dentin, fillings or, rarely, an intact tooth;
• sounding of the caries cavity is painless;
• no response to thermal stimuli;
• vertical percussion is positive;
• slight tooth mobility (as a result of accumulation of exudate in the periodontium)
• regional lymphadenitis;
• the mucous membrane of the gums in the area of the causal tooth is unchanged or has minor signs of inflammation - pasty, swollen, slightly hyperemic, partly painful on palpation;
• radiological signs of periodontal lesions are absent.

In acute periodontitis of permanent teeth, the process quickly becomes diffuse in nature, serous inflammation during the day changes to purulent.

Clinical signs of acute purulent periodontitis:
• worsening of the child's general condition due to fever and intoxication;
• constant intense throbbing pain;
• a half-open mouth, as a slight touch of the tooth provokes sharp pain;
• reduction of pain in case of spreading pus under the periosteum;
• the causative tooth may be intact, previously treated, or have a carious cavity that does not mate with the tooth cavity;
• slight tooth mobility;
• vertical and horizontal percussion is positive;
• percussion examination of the adjacent teeth is painful due to the diffuse spread of the process;
• the mucous membrane of the gums in the area of inflammation is brightly hyperemic, swollen, painful on palpation;
• when the purulent exudate spreads under the periosteum, an abscess is formed, asymmetry of the face (due to the collateral soft tissue swelling), characteristic smoothness of the transitional fold in the area of the causative and adjacent teeth;
• maxillary lymph nodes enlarged in size, dense, painful during palpation;
• X-ray signs of periodontal lesions are absent, sometimes the clarity of the cancellous bone pattern in the causative tooth area may be lost.

Acute periodontitis of permanent teeth should be differentiated from:
- acute diffuse pulpitis, complicated by periodontitis

(Characteristic is pain all over the bottom when probing carious cavity, pain when opening the cavity).
- exacerbation of chronic periodontitis (the presence of radiological signs that are characteristic of the form of chronic periodontitis that led to the exacerbation)
- acuteodontogenicperiostitis (characterized by pain, swelling and smoothness of the transitional fold in the area of the causal tooth)
- acuteodontogenic osteomyelitis (typically - motility of the causative and adjacent teeth, smoothness of the transitional convolution on both sides of the alveolar sprout, isolation of purulent exudate from dentate pockets).

Chronic periodontitis of infectious origin in permanent teeth in children is the first in frequency. The most common form of chronic periodontitis of permanent teeth in children, especially during root formation, is granular.

Clinical signs of chronic granulating periodontitis:
• asymptomatic or complaints of tooth darkening;
• unpleasant sensations in the tooth that occur when chewing solid food
• presence of fistula with pus;

• the causative tooth may be intact, previously treated, or have a carious cavity that connects to the tooth cavity;

• sounding of the caries cavity is painless;

• no response to thermal stimuli;

• percussion of the causative tooth is painless;

• the mucous membrane of the gums in the area of the causative tooth is pasty, swollen, slightly hyperemic, somewhat painful on palpation;

• Lukomsky's symptom of vasoparesis is positive;

• regional lymphadenitis;

• radiographically characterized by destruction of the cortical plate of the alveoli near the apex of the root, the periodontal cleft, as well as the lesion of the bone near the apex of the roots, which has indistinct outlines;

• bone destruction can also occur in the area of permanent bifurcation of permanent molars.

X-ray picture of chronic granulating periodontitis of permanent teeth with incomplete root formation should be differentiated from the area of growth in intact teeth. A differential feature is the integrity of the cortical plate of the alveoli surrounding the intact germinal zone.

Chronic granular periodontitis of permanent teeth should be differentiated from:

• chronic middle and deep caries;

• chronic fibrous and gangrenous pulpitis;

• Pulpitis, complicated by focal periodontitis.

Chronic granulomatous periodontitis of permanent teeth occurs mainly when their roots and periodontium are already fully formed. In the first stages, the development of the granuloma can be regarded as a protective reaction of the body in response to infections from the root canal to the periodontal cleft. However, the granuloma's protective function only takes some time. Gradually, its capsule germinates with blood vessels, causing the barrier between the granuloma and the surrounding tissues to break, and the granuloma begins to play the role of the focus of the chroniosepsis.

Clinical features of chronic granulomatous periodontitis:

• asymptomatic or complaints of pain when biting a tooth, changing its color;

• the causative tooth may be intact, previously treated, or have a carious cavity that connects to the tooth cavity;

• probing the bottom of the carious cavity, its connection with the tooth cavity and the entering of the root canals is painless;

• no response to thermal stimuli;

• percussion of the causative tooth is painless;

• radiographically characterized by destruction of the cortical plate of the alveoli and the periodontal cleft, as well as the center of thinning of bone tissue of round or oval shape with clear and outline, the diameter of which does not exceed 5 mm;

Chronic granulomatous periodontitis in children should be distinguished from the area of growth in intact teeth with unformed roots. The radiological feature of the germinal zone is the integrity of the cortical plate of the surrounding alveoli, as well as the uniform width of the periodontal cleft near the formed part of the root.

Chronic granulomatous periodontitis of permanent teeth should be differentiated from:

- chronic deep caries (characteristic occurrence of pain during the preparation of enamel-dentin conjunction, sensitivity of the tooth to the action of thermal stimuli);

- chronic fibrous and gangrenous pulpitis, complicated by focal periodontitis (characterized by the appearance of sharp pain during the probing of the connection between the carious cavity and the cavity of the tooth and canal eyes);

- granulating and fibrous periodontitis (radiographically - destruction of bone tissue in the granulating form of periodontitis has no clear outline; widening of the periodontal fissure and preservation of the integrity of the cortical plate in the fibrous form of periodontitis);

- cyst granuloma and radicular cyst (the center of bone destruction is not a radiograph has a large diameter, it is difficult to distinguish radiologically given pathology from periodontitis, diagnosis is made on the basis of histological examination).

Chronic fibrous periodontitis of permanent teeth is diagnosed in comparison with other forms of chronic inflammation of the periodontium and is characterized by the formation in the apical part of the roots of coarse fibrous connective tissue that replaces the periodontium.

Clinical signs of chronic fibrous periodontitis:

• asymptomatic course, no complaints of pain;

• tooth intact or sealed, rarely carious;

• tooth percussion is painless;

• the mucous membrane of the gums is not changed;

• X-ray - deformation of the periodontal gap in the form of its uneven expansion and narrowing - in the areas of hypercementosis.

The radiological symptomatology of chronic fibrous periodontitis is similar to the changes detected on the radiograph of teeth with incomplete root growth, namely, at the stage of the unopened apical opening and unformed periodontium. For the final diagnosis it is necessary to take into account the age of the child, the length of the period of growth and the formation of the roots of different teeth.

Exacerbation of chronic periodontitis of permanent teeth in children with incomplete root growth is diagnosed more often than acute course. In the clinic the differential - diagnostic signs of exacerbation are discoloration of the tooth, the presence of a fistula or scar from it, a combination of a carious cavity with a tooth cavity, mainly in permanent teeth with formed roots. The X-ray shows the destruction of the cortical plate of the alveoli, the deformation of the periodontal cleft, and the foci of destruction of bone tissue from fuzzy outlines near the apexes of the roots.

Differential diagnosis between exacerbation and acute periodontitis is performed taking into account the absence or presence of previous exacerbations in the anamnesis, fistula or scar from it, tooth discoloration, destructive changes in the periodontiumradiographically.

Knowledge level control

1. Features of clinical course of acute infectious periodontitis of permanent teeth.
2. Features of clinical course of acute toxic periodontitis of permanent teeth.
3. Features of clinical course of acute traumatic periodontitis of permanent teeth.
4. Name the ways of distribution of exudate in acute periodontitis.
5. Features of clinical course of chronic fibrous periodontitis of permanent teeth.
6. Features of clinical course of chronic granulating periodontitis of permanent teeth.
7. Features of clinical course of chronic granulomatous periodontitis of permanent teeth.
8. Symptoms of chronic periodontitis in the stage of exacerbation, during the formation and stabilization of the roots of permanent teeth.
9. Differential diagnosis of acute, chronic forms of periodontitis of permanent teeth in children.
10. Influence of periodontitis of permanent teeth on the general state of the body in children.

Test

1.The chronic granulating periapical inflammation was diagnosed in a 14-year-old child. Which probable complaints did has the child at this disease

A. Discomfort and aching pain in the tooth

B. Permanen throbbing pain

C. Pain caused by chemical stimuli

D. Pain caused by thermal stimuli

E. Short-lasting throbbing pain.

2.In 12-year-old child the roentgenologic examination should be conducted for an accurate diagnosis. Which roentgenologic picture is specific for chronic granulomatous periapical inflammation of the 41 tooth?

A. Dissolving of bone tissue of a round shape with distinct contours

B. Presence of a resorption area with indistinct contours

C. No changes

D. Expansion of periodontal gap

E. Bone sequestration.

3. A 14-year-old girl complains of the presence of the carious cavity. Objectively: there is a big cavity in the 26 tooth, which is connected with pulp chamber, the response to thermal and chemical stimuli is negative, percussion is painless. In the X-ray - expansion of periodontal gap in the area of the palatal root apex. Define the diagnosis.

A. Chronic fibrous periodontitis

B. Chronic granulomatous periodontitis

C. Chronic granulating periodontitis

D. Aggravation of chronic periodontitis

E. Acute serous periodontitis.

4.A 7-year-old child had a trauma of upper central incisors 6 months ago. the parents didn't take him to a dentist. A week ago the mother saw a fistula in the area of these injured teeth. What is the most probable diagnosis?

A. Chronic granulating periapical inflammation

B. Chronic granulomatous periapical inflammation

C. Chronic fibrous periapical inflammation

D. Aggravation of chronic periapical inflammation

E. Chronic marginal periapical inflammation.

5. An 11-year-old boy does not have any complaints. During the examination a large carious cavity connected with the tooth cavity was found in the 46 tooth. Percussion of the tooth is painless. The mucose membrane in the projection of the area the root apexes of the 46 tooth without the change. Probing of the root canal oppening is painless. What is the provisional diagnosis?

A. Chronic periapical inflammation

B. Acute periapical inflammation

C. Chronic pulpitis

D. Chronic deep caries

E. Chronic medium caries.

Questions to control:

1. Describe the X-ray stages of permanent tooth root formation.

2.Describe the morphological features of the periodontium at different stages of formation of the permanent tooth root. Describe the structure of the growth zone.

3.Describe clinical manifestations of acute serous periodontitis in permanent teeth in children.

4.Describe clinical manifestations of acute purulent periodontitis in permanent teeth in children.

5.Describe clinical manifestations of exacerbation of chronic periodontitis in permanent teeth in children.

6.Describe clinical manifestations of chronic granulating periodontitis in permanent teeth in children.

7. Describe the clinical manifestations of chronic granulomatous periodontitis in permanent teeth in children.

8.What diseases are necessary for differential diagnosis of acute serous periodontitis of permanent teeth in children?

9.What diseases should be used for differential diagnosis of acute purulent periodontitis of permanent teeth in children?

10. What diseases are necessary for differential diagnosis of exacerbation of chronic periodontitis in permanent teeth in children?

11. What diseases are necessary for differential diagnosis of chronic granular periodontitis of permanent teeth in children?

12.What diseases are necessary for differential diagnosis of chronic granulomatous periodontitis of permanent teeth in children?

13.Describe the radiographic picture of chronic granulating periodontitis.

14. Describe the radiographic picture of chronic granulomatous periodontitis.

15. Name the differential signs of chronic granulomatous periodontitis and growth zone.

List of practical skills:

1. To master methods of diagnostics of various forms of periodontitis in permanent teeth in children.

2. Learn how to perform differential diagnosis of various forms of periodontitis permanent teeth in children and adolescents

PRACTICAL LESSON № 7

Theme: Traumatic lesions of temporary teeth in children. Causes, clinic, diagnosis. Features of treatment of traumatic lesions of temporary teeth in children. Peculiarities of treatment of traumatic lesions of permanent teeth in children

Aim of the lesson: To study with students the methods of treatment of periodontitis of permanent teeth in children. To teach students clinical and anatomical - topographic features of permanent teeth structure in children. Require students to diagnose periodontitis of permanent teeth in children, depending on the child's age. To study with students the methods of treatment of periodontitis of permanent teeth with an unformed root.

Actuality: Periodontitis of permanent teeth in children today is a common pathology of the dental maxillary system, which develops due to the shortcomings of the organization and quality of dental care. Occurrence of the inflammatory process in the periodontal teeth at the stage of their formation can lead to the cessation of further growth of the roots. The focus of

chronic inflammation in the periodontium may be one of the causes of sensitization of the child's organism, as well as in the case of exacerbation of the development of life-threatening inflammatory processes of the maxillofacial area: periostitis, abscess. To prevent the occurrence of possible complications, the pediatric dentist must be able to correctly determine the therapeutic tactics and perform endodontic intervention.

Control of the initial level of knowledge

1. Anatomical - topographic features of the structure of root canals of permanent teeth in children.
2. Features of the structure of root canals of permanent immature teeth in children.
3. Periods of development of permanent teeth.
4. Clinical - radiological stages of tooth root formation.
5. Classification of periodontitis of permanent teeth.
6. Features of clinical course of chronic granulating periodontitis of permanent teeth in children.
7. Features of clinical course of chronic granulomatous periodontitis of permanent teeth in children.
8. Features of clinical course of chronic fibrous periodontitis of permanent teeth in children.
9. Features of clinical course of acute forms of periodontitis of permanent teeth in children.

Content of the lesson

Special attention is required to know the anatomical and topographic features of immature permanent teeth: the volume of the tooth cavity, low dentin thickness and low degree of mineralization, a significant layer of infected predentin on the walls of the root canal, the absence of physiologic separation root apex, oval cross-section of the lumen of the root canal in the apical area, small root length, the presence of a growth zone determine the features of the endodonic treatment legs - wide opening of the tooth cavity, lack of stage of expansion of the canal, use of large size tools (H - files), careful removal of infected predentin, careful irrigation of the canal with no irritants, accurate determination of the working length by means of X-ray examination with the tool careful work with tools with a secure tip for a fixed length.

There is an ISO 3630 standard approved by Technical Committee 106 of the International Standards Organization that provides basic parameters for root canal tools: shape, profile, length, size, maximum manufacturing tolerances and minimum mechanical strength requirements, color coding and character encoding to identify the type of instrument, an international numbering system for ordering tools.

In endodontic treatment of permanent teeth with incomplete root formation, one of the main tasks is to ensure that it can be completed. This creates a tight barrier. Such a barrier is osteodentin, cellular or cell-free cement, bone, or bone. Creating a tight barrier at the root apex is called apexification. For the purpose of apexification, the following materials are used: pastes based on antiseptics and antibiotics, zinc oxide and metacresyl acetate, tricalcium phosphate, hydroxyapatite, collagen-calcium-phosphate gel, tricalcium phosphate, absorbent, ceramics, hydroxide of calcium Dentsply) or Biodentine (Septodont). In some cases, it is recommended to leave the channel empty and sometimes untreated for one year (Khomenko LO, 2007).

To date, preference is given to calcium silicate cements such as MTA or Biodentine (Septodont). High pH stops bone resorption by acting on osteoclasts and stimulates bone formation, affecting osteoblasts.

These drugs make it possible to create an apical barrier in one or two visits, in contrast to the method of natural apexification using calcium-containing temporary pastes. In addition, according to recent studies, the use of calcium-containing pastes for more than two months in a row leads to a decrease in the mechanical properties of dentin of the root of the teeth due to the crushing effect of calcium on collagen, which leads to dentin drying.

The basic principles of treatment of periodontitis are as follows:

• influence on the system of macrochannels (elimination of peptide decay, removal of infected pre-dentin, neutralization of microorganisms;

• the influence of the microchannel system (blocking the infection in the dentinal tubules);

• effect on periapical tissues (elimination of inflammatory process and creation of favorable conditions for regeneration of periodontal tissues)

In the treatment of periodontitis of permanent teeth in children, preference is given to the conservative method of treatment.

Knowledge level control

1.What methods of treatment of periodontitis of permanent teeth do you know? What determines the choice of treatment for periodontitis of permanent teeth in children?

2. Name the indications for surgical and conservative-surgical methods of treatment of periodontitis of permanent teeth in children.

Test

1. An 11-year-old child complains persistent pain in the tooth for 11 days. OBJECTIVELY: the 11 tooth is sealed, changed in color. Vertical percussion is sharply painful. The mucous membrane of the alveolar process in this area is hyperemic, edematous, slightly painful to palpation. Which filling material should be selected for permanent obturation of the root canal during endodontic treatment?

A. Gutta-percha pins and SealApex

B. Zinc oxide eugenol paste

C. Iodoform paste

D. Paste containing calcium hydroxide.

E. Endomethason and gutta-percha pins

2. A 8,5-year-old child complains of a cavity in a tooth on the lower jaw on the left. Objectively: the 46 tooth has carious cavity within the light softened dentin parapulpar dentin. The cavity of the tooth is opened. Probing of the cavity is painless, reaction temperature is not available. Percussion of tooth is painful. Rtg: the root of the tooth 46 is formed by 2/3 of the length. Choose the best material for long time obturation of root canals:

A. Paste containing calcium hydroxide

B. Iodoform paste

C. Thymol paste

D. Formacresol paste

E. Resorcin-formalin paste.

3. An 8-year-old child complains about the presence of cavity in the lower left tooth. During examination it was revealed a cavity in the 36 tooth, connected with the cavity of the tooth. Probing of connection and orifices of the root canals is painless. There is fistula with

purulent secretions on the mucous membrane of the alveolar process in the projection of root apexes. What medications should be used for irrigation of root canals:

A. Sodium hypochlorite 3% and hydrogen peroxide 3%

B. Solution furacilinum

C. Solution rivanol

D. Iodine

E. Saline solution.

4. A 14.5 year-old teenager complains of intense throbbing pain in the teeth of the upper jaw on the right for 2 days. The pain increases during chewing and touching of the tongue. OBJECTIVELY: there is carious cavity in the 16 tooth, the probing of the bottom of this cavity is painless. The response to thermal stimuli is absent. Vertical and horizontal percussion are sharply painful. The mucous membrane of the gums in the area of 16 tooth is swelled, hyperemic. What will the doctor's tactics during the first visit?

A. Mechanical and pharmacological treatment of root canals, opening of the apexes

B. Anesthesia, necretomia, mechanical and pharmacological treatment of root canals, opening of the apexes

C. Necretomia, mechanical and pharmacological treatment of root canals, opening of the apixes

D. Anesthesia, mechanical and pharmacological treatment of root canal, opening of the apexes

E. -.

5. A 7.5 year-old child complains of discoloration of the 12 tooth. Objectively: the 12 tooth is sealed, gray, his percussion is painless. Rtg: at the root apex of the 12 tooth the bone is destructed like flame of fire with a clear borders. After the necrectomy, mechanical and pharmacological treatment of root canals, temporary obturation of root with calcium hydroxide (Salasept) was held. A month later replacement of calcium hydroxid was conducted . What time after of conduction radiological control can be possible to determine the formation of dense apical bridge?

A. 3-6 months

B. 1 month

C. over 1 year

D. 1 month

E. 2 months.

Questions to control:

1.What is the purpose of conservative treatment of chronic periodontitis of permanent teeth at the stage of unformed root? Define the concept of apexification.

2.What method is used for instrumental treatment of unformed root canals of permanent teeth? What is it?

3. Determine the peculiarities of the opening of cavities and instrumental treatment of root canals in the treatment of periodontitis of permanent teeth with unformed roots.

4. What groups of medicines should be used for root canal treatment in the treatment of periodontitis of permanent teeth with unformed roots? The mechanism of their action.

5. Determine the actions of the dentist in the case of ingrown granulation tissue to the unformed root canals of the permanent teeth.

6. What methods are used to seal unformed root canals in the treatment of periodontitis of permanent teeth in children?

7. Determine the composition, properties and method of application of drugs based on MT in the treatment of chronic periodontitis of permanent teeth with unformed roots.

8. Under what conditions and in what terms is the final obturation of root canals in two-stage treatment of chronic periodontitis of permanent teeth with unformed roots.

List of practical skills:

1. Be able to choose the right tactics for the treatment of periodontitis of permanent teeth, depending on its etiology, the nature of the course, form and period of tooth development.

2. To master the methods of treatment of chronic granulating periodontitis of permanent teeth with unformed roots.