

DANYLO HALYTSKYI LVIV NATIONAL
MEDICAL UNIVERSITY

Pediatric Dentistry Department

A L G O R I T H M S

*for students
of Dentistry Faculty*

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An algorithm of fulfilled practical skills implementation 5.1 **To define and estimate of Fedorova-Volodkinoi's hygiene index**

Method of the practical skill implementation

We conduct painting of vestibular surfaces of 6 lower frontal teeth by solution of Shillera-Pisareva by a cotton rolls.

Criteria of estimation in marks:

- 1 - absence of colouring
- 2 - coloring of $\frac{1}{4}$ crown of the tooth
- 3 - coloring $\frac{1}{2}$ crown of the tooth
- 4 - coloring $\frac{3}{4}$ crown of the tooth
- 5 - coloring of all surface of crown of the tooth

Formula for the calculation: ***index of hygiene*** = $\Sigma/6$
(Σ is the sum of values of marks of all teeth)

1.1-1.5 marks is a good hygiene

1.6-2.0 marks is a satisfactory hygiene

2.1-2.5 marks is an unsatisfactory hygiene

2.6-3.4 marks is a bad hygiene

3.5-5.0 marks is a very bad hygiene

Material providing:

1. Model of the lower jaw - 1
2. Solution of Shillera-Pisareva -1
3. Tool for examination of oral cavity (probe, mirror, tweezers) - 1
4. Cotton rolls

An algorithm of fulfilled practical skills implementation 5.2.
To define and estimate the index of hygiene of Green-Vermillion

Method of the practical skill implementation

Conduct painting of vestibular surfaces 16, 11, 26 and lingual surfaces 46, 31,36 teeth by Shillera-Pisareva's solution. On the explored surfaces at first determine the dental plaque of Debris-index, and then - dental calculus of Calculus-index.

Criteria of estimation:

Dental plaque (DI)

- 0- no debris;
- 1- debris within gingival surface 1/3 only
- 2 - debris beyond gingival 1/3 but within gingival 2/3
- 3- debris covering most of tooth surfaces.

Dental calculus (CI)

- 0- no debris;
- 1- debris within gingival 1/3 only
- 2- supragingival calculus covers 2/3 surfaces of crown of the tooth, and subgingival calculus as separate conglomerates;
- 3 - supragingival calculus covers 2/3 surfaces crowns of the tooth and (or) subgingival calculus surrounds collum part of crown of the tooth.

Formula for the calculation: $OHI = \frac{\sum DI}{n} + \frac{\sum CI}{n}$

\sum is a sum of values; DI is the dental plaque; CI is the dental calculus; n - is the amount of the inspected teeth (6).

Estimation of values:

	OHI-S	Hygiene of oral
0 - 0.6	low	good
0.7 - 1.6	middle	satisfactory

1.7 – 2.5	high	
unsatisfactory		
more than 2.5	very high	bad

Materials of providing:

1. Models of upper and lower jaws – 1;
2. Shillera-Pisareva's solution - 1.
3. Dental tools for the examination (mirror, probe, tweezers) -1;
4. Periodontal (graduated) probe – 1;
5. Cotton rolls.

An algorithm of fulfilled practical skills implementation 5.3

To execute and estimate the test of Shillera-Pisareva

Method of the practical skill implementation

Test of Shillera-Pisareva is conducted with the purpose of determination of presence of inflammatory process in periodontal tissues. With a small cotton rolls gums are painted in the area of the lower frontal teeth by Shillera-Pisareva's solution, which contains: Iodi puri - 1,0 Kalii iodidi - 2,0 Aquae destilatae - 40,0.

At presence of the hidden inflammation the amount of glycogen in gums is considerably multiplied, and that is why solution gives them yellow-brown colouring of different intensity. At the yellow colouring test negative, and at darkly-brown is positive.

Conduct test of Shillera-Pisareva to all children at determination at them of dental status. In case of positive test the more deep research of the periodontal tissues state is necessary.

Material of providing:

1. Set of tools (mirror, tweezers, probe) - an 1 set;
2. Cotton rolls;
3. Solution of Shillera-Pisareva -1;
4. The models of lower jaw -1.

An algorithm of fulfilled practical skills implementation 5.4.
To define and estimate a papillae-marginal-alveolar index (PMA).

Method of the practical skill implementation

Index of PMA is used for estimation of inflammatory process in gums. It is conducted by sight. Inflammations of gingival papilla (P) near one tooth estimate in an 1 mark, inflammation of marginal edge (M) - in 2 marks, inflammation of the alveolar part of gums (A) - in 3 marks.

Calculate Index of PMA in per cents according to a formula:

$$PMA = \text{sum of marks} / 3 \cdot \text{number of teeth} \times 100$$

The sum of marks concerns by addition of all greatest indexes of periodontal tissues state near every tooth.

Account of teeth in age	6-11 years – 24
	12-14 years – 28
	15 years and more – 30
	In a period of temporal bite to 6 years - 20 teeth

Criteria of estimation:

- to 25% is an easy degree of gingivitis
- 25-50% is a middle degree of gingivitis
- higher 51 % it is a heavy degree of gingivitis.

Material providing:

- 1.Set of tools for a examination (probe, mirror, tweezers) - 1
- 2.Models of jaws - 1
- 3.Cotton rolls.

An algorithm of fulfilled practical skills implementation 5.5

To define the CPITN index of the periodontal tissues state

Method of the practical skill implementation

Inspect surrounding tissues in the area of ten teeth (17, 16, 11, 26, 27, 37, 36, 31, 46, 47). Register the state of only six teeth, where the pathological changes are more expressed for every pair of teeth. Register such clinical signs of periodontal diseases, as bleeding, presence above' and undergingival dental calculus and periodontal pockets. Inspect periodontal tissues with a probing method for the exposure of bleeding, presence above' and undergingival dental calculus and pathological pocket by the graduated probe.

Estimation of index is conducted in marks:

- 1 – bleeding;
 - 2 – presence of dental calculus;
 - 3 – pathological pocket by a depth 4-5 mm;
 - 4 – pathological pocket by a depth more than 5 mm;
- Sum of marks of all sextants is divided into 6.

At the value of CPITN 0 marks treatment is not needed

- 1 mark - it follows to improve the individual hygiene of oral cavity;
- 2 marks – are the necessity of professional hygiene of oral cavity
- 3 marks - antiinflammation therapy is recommended;
- 4 marks – complex of treatment measures is recommended.

Material of providing:

- 1. Graduated probe - 1
- 2. Models of jaws - 1

An algorithm of fulfilled practical skills implementation 5.6 ***To conduct of fissure sealing***

Method of the practical skill implementation

To clean the surface of teeth by a brush with paste from remnants of meal and plaque, to process by a tampon with a 3% H₂O₂. Isolate the tooth from saliva by cotton rollers and to dry by the stream of air. Etch for 20-30s with 37% phosphoric acid. Wash and dry the surface maintaining isolation. Apply the thin layer of sealant. The sealant of the chemical hardening must overtake during 2-3 min.

Material providing:

1. Brush – 1;
2. An angular handpieces -1;
3. 3% H₂O₂ - 1;
4. 37% phosphoric acid – 1;
5. Sealant of the chemical hardening – 1;
6. Phantoms of teeth ;
7. Cotton rollers.

An algorithm of fulfilled practical skills implementation 5.7 ***To conduct the professional hygiene of oral cavity***

Method of the practical skill implementation

- A) Removal hard dental deposits (dental calculus). By the set of hooks we conduct the removal of supragingival and subgingival dental calculus.
B) Removal soft dental deposits.

Fix a synthetic bristle brush fix in an angular handpiece. Put polishing paste for the removal of soft dental deposits on a brush. On the "first" speed (3000-5000 r/min) process the surfaces of teeth by vertical, horizontal and around motions. The hygiene of interproximal tooth surfaces is conducted by flossing.

After procedure wash the oral cavity by antiseptic (0,05% chlorhexidine). The control of quality of professional hygiene is conducted by Shillera-Pisareva's solution.

Recommendation for a patient: at presence of sensitive after the procedure to use for the individual hygiene of oral cavity tooth-paste of "Sensodyn" for the removal sensitiveness of teeth.

Material providing:

1. Set of hooks for the removal of dental calculus – 1;
2. Brushes for the removal of soft dental deposits – 1;
3. Polishing paste – 1;
4. Shillera-Pisareva's – 1;
5. Floss.

An algorithm of fulfilled practical skills implementation 5.8 *To conduct studies of the oral cavity hygiene*

Method of the practical skill implementation

On the phantom of teeth of upper and lower jaw we conduct demonstration of motions of tooth brush, which are used for cleaning of all surfaces of teeth of upper and lower jaw, their sequence, duration and description.

The dental row of permanent dentition is divided into 6 segments on each jaw:
molars
premolars
incisors and canines

Temporal dentition into 4 segments:
molars
incisors and canines

Cleaning of teeth and gums begins with the area of upper right molars and continue to displaced gradually to molars of the opposite side. Cleaning of teeth is consistently conducted on upper, and, then on a lower jaw. At cleaning of cheeks surfaces of molars bristle of brush must be directed under an acute angle to the surface of teeth, by "sweeping" motions downward for a supramaxilla and upward for a lower jaw. The plaque delete simultaneously from gums.

Then do the recurrently-forward horizontal motions, and conclude cleaning by around motions. On a brush create pressure, when passing from gums, contacts with a tooth, execute a meeting half-round no-pressure for push-to-resetting of brush. Later move a tooth brush on one segment ahead and repeat the combination of motions. The masticatory surfaces of molars and

premolars clean with the motions, directed athwart to the occlusal plane that is instrumental in cleaning of fissures and interproximal intervals. Slow circulating motions of head of the brush (without the change of its location) are on duty with the recurrently-forward horizontal.

The palatal surfaces of molars and premolars are cleaned similarly as the buccal surfaces. During the cleaning of vestibular surfaces of lower frontal teeth execute similar motions, as well as at cleaning of buccal surfaces of molars and premolars.

At cleaning of oral surfaces put the handle of brush parallel to the occlusal plane, thus two or three bunches of bristle engulf both teeth and gums. Then change position of the brush so that the head of brush will be directed athwart to the occlusal plane of teeth, and the bristles of brush will be under an acute angle to them and take the edges of gums.

For the hygiene of surfaces of teeth which are difficult to access and interproximal intervals also use floss and tooth-pick.

Material of providing:

1. Phantom of teeth;
2. Tooth brush;
3. Floss;
4. Tooth-pick

An algorithm of fulfilled practical skills implementation 5.9

To execute polishing of caries in the stage of spot

Method of the practical skill implementation

Clean the surface of the tooth from the dental plaque with a brush and cotton rolls, dry with the stream of warm air, then grind the pigmentive carious spot with the polishing disk and polish with the brush and paste.

Treated area of demineralization enamel is subjected to subsequently remineralization therapy. Recommendations for a patient: within 2 hours do not use a meal within 2 hours, don't clean the teeth during the day.

Material of providing:

1. Set of examination tool;
2. Set for deep fluoridation;
3. Polishing disks;
4. Polishing brushes;
5. Polishing paste "Polydent";
6. Handpiece;
7. Cotton rolls, tampons.

An algorithm of fulfilled practical skills implementation 5.10
To conduct the appliance of remineralization solution

Method of the practical skill implementation

Brush the surface of tooth from the dental plaque, dry with the stream of warm air, then impose on tooth the cotton rollers moistened by a 10% solution of calcium gluconatis on 15-20min; during this time rollers change 3-4 times. Then impose the tampons moistened with 2% solution of NaF on the surface of the teeth for 2-3 min.

Recommendations for a patient: don't eat within 2hour. after procedure. Course of treatment 10 sessions last.

Material providing:

1. Set of examination tool;
2. Solution of calci gluconatis 10%;
3. Solution of NaF 2% ;
4. Models of jaws;
5. Cotton rollers, tampons.

An algorithm of fulfilled practical skills implementation 5.11
Coverage the teeth with fluoride varnish

Method of the practical skill implementation

To clean the surface of the teeth from the plaque by brush with paste. To wipe by the cotton rolls moistened by 3% H₂O₂. To apply varnish on the tooth by an

applicator or cotton tampon. The patient can close the mouse after applying of the varnish (after 4-5 min.)

Recommendations: Don't brush the teeth and don't eat hard food within 12-24 hours. Repeat the course in 3-4 months.

Material providing

1. A fluoride varnish;
2. Brush;
3. Instruments for examination (probe, mirror, tweezers);
4. Cotton rollers, marbles;
5. Models of jaws;
6. Brush;
7. An angular handpiece.

An algorithm of fulfilled practical skills implementation 5.12 ***To conduct silvering of carious cavities of temporal teeth***

Method of the practical skill implementation

Clean the teeth which are subjected to the impregnation with excavators and 3% H₂O₂, isolate it from saliva, dry by air. To apply the solution of nitrate of silver with cotton rolls. Then left the 4% solution of hydroquinon on the teeth within 1-2 min. Conduct an impregnation 3-4 times daily or in a day.

Recommendations: repeat the course in 4 months.

Material of providing:

1. Argonat - a 1 set;
2. Typodonts damaged by a caries;
3. Instruments for a examination (probe, pincers, mirror) - an 1 set;
4. Excavators;
5. 3% H₂O₂;
6. Wadding rollers.

An algorithm of fulfilled practical skills implementation 5.13
To appoint medicine for endogenic treatment of caries

Method of the practical skill implementation

Preparations, doses, amount of procedures on a year are appointed taking into account the age of patient, form of cariosities, presence of internal diseases, concentration of fluoride in the drinking-water, general reactivity of organism. Specific treatment of the decompensate forms of caries consists in application of preparations of fluoride, and nonspecific - in application of vitamins, preparations of calcium and phosphorus, microelements, preparations which stimulate activity of salivary glands.

Recommendations for a patient: to use preparations in obedience to setting. „Calcit" -1-2 tab. three in a day after meal. „Biotrit-Denta" - for 1 tab. in 1-2 in a day after meal - 2 months. „Biotrit C" - for 2 tab. three time in a day after meal, 10-20 days, three courses in a year. Extract of mother's leaves-stepmother for 1 tablespoon three times a day.

Material of providing:

1. Reception forms
2. „Biotrit C “
3. „Biotrit-Denta"
4. „Calcit"
5. Extract of leaves of mother - stepmother

An algorithm of fulfilled practical skills implementation 5.14
To conduct deep fluoridation at caries on the stage of spot

Method of implementation of practical skill

Before applying of enamel-sealing liquid, it is needed to clean demineralization areas of teeth by a tooth brush, interdental intervals - flossing, to isolate teeth from saliva by cotton rollers, to process by antiseptic solution and after drying by warm air to apply liquid № 1 on demineralization areas, after 30 sec. - liquid № 2, to rinse the oral cavity.

Recommendations for a patient: to repeat procedure 1-2 times a year, do not eat and drink within 2 hours.

Material of providing:

1. The set of examination tools (probe, mirror, tweezers);
2. Cotton rollers;
3. The models of jaws;
4. Enamel-sealing liquid „Gluftored“, Vladmiva;
5. Antiseptic solutions - chlorhexidine, 3% H₂O₂.

An algorithm of fulfilled practical skills implementation 5.15

To execute opening of the tooth cavity

A technique of practical skills fulfillment

After completion of carious cavity preparing by the sterile round bur (small size) conduct perforation of the roof of pulp chamber in the projection of pulp horn. After that a sterile fissure bur (small size) is inserted into the pulp chamber with fragmentary motions remove the roof of pulp chamber from the depth to outside . extend the cavity along the walls of pulp chamber by the circle motions within the limits of tooth cavity. Use for this fissure bur (small size). The walls of carious cavity and walls of the tooth cavities form the straight line.

Material of providing:

1. An angular handpiece - 1.
2. A complete set of burs - 1.
3. A set of instruments for examination (probe, mirror, and tweezers) - 1.
4. Phantoms of teeth - 1.

An algorithm of fulfilled practical skills implementation 5.16

To conduct the pulpotomy of the primary tooth

A technique of practical skills fulfillment

After opening of the pulp chamber with a sharp excavator or round bur (small size) remove the coronal pulp. With the help of fissure bur (small

size) cut off pulp, which is located in the area of entrances of root canals. Then the pulp chamber is syringed with 3% solution of hydrogen peroxide. In the case of radicular pulp bleeding dip a cotton pledget in 3% solution of hydrogen peroxide or other styptic agent (Kapramin) and place it in the pulp chamber. Later the tooth cavity is dried out with a sterile cotton ball. Make control bleeding with a sterile cotton wool pledget.

Armamentarium supplying:

1. Handpiece – 1.
2. A complete set of burs - 1.
3. A set of instruments for examination (probe, mirror, and tweezers) - 1.
4. Excavator– 1.
5. Solution of antiseptic (3% solution of hydrogen peroxide) – 1.
6. Solution is haemostatic (Kapramin) – 1.
7. Phantoms of teeth – 1.

An algorithm of fulfilled practical skills implementation 5.17
To prepare a set of endodontic instruments
for work in tooth with the immature root

A technique of practical skills fulfillment

For creation of good endodontic access, expansion of the entrance of root canals Gates Glidden burs are taken. Taking into account the peculiarities of anatomical structure of immature root canals of teeth it is necessary to take only the hand files of a large size (from 30 and more) with length 21mm for their passing and removing the infected predentin from the walls of the canal. Choose the instruments with a stopper for possibility of working length fixing. A necessary accessory in this case is an endodontic rule. Broaches are used for removing the pulp and putrid masses. A root needle is prepared for medicamentous treatment of root canals. Spiral root filler and plugger are prepared for the root canal obturation .

Armamentarium supplying:

1. Files № 30-40, length 21 мм – 2-3.
2. Broaches – 2.

3. Endodontic line – 1.
4. Root needle - 2.
5. spiral root filler – 1.
6. Plugger – 1.
7. Gates Glidden – 1.

An algorithm of fulfilled practical skills implementation 5.18

***To prepare the set of instruments and fillings materials
for inserting into the root canal of the primary tooth***

A technique of practical skills fulfillment

The cotton turundas or paper points are prepared to check the moisture. The spatula and glass are necessary for preparation of the root filling material. The material on the basis of zinc oxide and eugenol should be taken. On the glass one part of powder and 1-2 drops of liquid are mixed for the receipt of plastic homogeneous paste. A spiral root filler and plugger should be prepared for inserting material into the root canal.

Armamentarium supplying:

1. A root needle - 2.
2. Paper points - 5.
3. Spiral root filler - 1.
4. Plugger - 1.
5. Spatula, glass - 1.
6. Eodont – 1

An algorithm of fulfilled practical skills implementation 5.19

***To fulfill medicamentous treatment of root canals of the
immature tooth***

A technique of practical skills fulfillment

To take into account:

- a) less length of canal
- b) greater width of canal and apical foramen
- c) thin layer of hard tissues with wide dentin tubules

Pulp chamber of a tooth should be opened more widely, than in the teeth with completed root formation. After root canals preparation it is necessary to carry out their the irritation and antiseptic treatment for removing the particles with demineralized dentin. Antiseptics can be inserted into the root canals on the paper points or by irrigation. Irrigation of canals is conducted carefully, without pressure, to avoid pushing the solution through the wide apical foramen.

Armamentarium supplying:

1. Hypochlorite of sodium of 2,6% - 20 ml
2. Parcan, Canal+
3. Furacillini, chlorophylypt, chlohehydini bigluconatis, hydrogen 3%, trypsin, hemotrypsyn, emulsion of bactrim, metronidazol, iodide kalium, sorbents
4. Teeth of phantoms
5. Root needles
6. A syringe for irrigation of root canals
7. Paper points

An algorithm of fulfilled practical skills implementation 5.20 *To fulfill the impregnation of root canals of a primary tooth with a silver nitrate solution*

Purpose: To execute impregnation of root canals of the primary tooth with a silver nitrate solution.

A technique of practical skills fulfillment

With the purpose of macro- and micro canals system impregnation and for coagulation of the root canal granulation a silver nitrate solution is applied. After root canals preparation the tooth is isolated with the cotton

rolls. The root canal have to be dried. The root canals walls are moistened with a 4% alcoholic solution of silver nitrate with next renewal by the 4% solution of hydrohinon (arsenat). A liquid is entered on a paper point. The lack of this method is a tooth darkening. To prevent darkening of walls of a carious cavity they should be covered with a dentin paste.

Armamentarium supplying:

1. Argenat – 1 .
2. Needles for roots - 10.
3. Paper points
4. Dentin paste – 1.
5. Phantoms of teeth - 10.

An algorithm of fulfilled practical skills implementation 5.21
To prepare the set of medicamentous resources and instruments for providing the apexification of roots of the immature tooth

A technique of practical skills fulfillment

Purpose: to provide the conditions for closing of the unformed apical foramen of a tooth root with dense tissues.

After determination of apex radar of root working length, careful root canal preparation (applying the hand methods of passing and expansion of root canals) and medicamentous treatment of root canals with natrium hypochloride solution and hydrogen peroxide 3%, the root obturation is conducted by a spiral root filler with unhardening pastes on the basis of calcium hydroxide, which have an antiseptic and inflammatory action, then put the temporal filling.

Recommendations for a patient: a clinical supervision up to completed apexification during 6-9 months.

Armamentarium supplying:

1. Apex radar (Electronic device for determination the working length of tooth root canal)
2. Barbed broaches – 2-3.

3. Needles for roots - 2-3.
4. Files of different sizes - 4.
5. Remears of different sizes – 4.
6. Spiral root filler – 1.
7. Solution of natrium hypochloride is a 2,5% - 1 bottle.
8. Solution of hydrogen peroxide - 1 bottle.
9. Paste on the base of calcium hydroxide – 1.
10. Dentin paste - 1.
11. Instruments for examination (probe, mirror, tweezes) – 4.
12. Cotton rolls.
13. Endodontic models of teeth – 4.
14. A syringe for washing of root canals.

An algorithm of fulfilled practical skills implementation 5.22
To define the keys of normal occlusion after Endreus
on gipseous models

A technique of practical skills fulfillment

On gipseous models, which are fixed in occludator, student should define 6 keys after *Endreus*:

- Key 1. A correct fissure-cusp relationship between first permanent molars (mesio-buccal cusp of first upper molar must be disposed in fissure between cusps of lower first molar)
- Key 2. Mesiodistal inclination of crowns of the teeth (angulation of teeth)
- Key 3. Bucco-lingual or labio-lingual inclination of crowns of the teeth (torque of teeth)
- Key 4. Absence of teeth rotation around axis
- Key 5. Tight aproximal contact, spacing absence
- Key 6. Depth of curve of Spee (to 2 mm).

Armamentarium supplying:

1. Gipseous models, fixed in occludator - 4.

An algorithm of fulfilled practical skills implementation 5.23
To estimate the orthopantomogram

A technique of practical skills fulfillment

In orthopantomogram students determine the number of follicles of permanent teeth, their influence on the position of neighbouring teeth, stage of crowns and roots formation of permanent teeth, degree of root resorption of primary teeth, detection of retentive teeth, the state of dental hard tissues, position of articular heads of the lower jaw in cavities of temporo-mandibular joints, their form and sizes, size of the jaw body , branches and angles of the lower jaw, state of maxillary sinus.

Armamentarium supplying:

1. orthopantomogram – 4.

An algorithm of fulfilled practical skills implementation 5.24
Diagnostics of malocclusions on models

Purpose: to diagnose the tooth anomalies on the diagnostic models, anomaly of the form of dental arches and anomalies of occlusion.

A technique of practical skills fulfillment

On diagnostic models, it is necessary to assess the position of every tooth in a dental arch; number of teeth, their form; to define the form of dental arches of upper and lower jaws; to define correlation of dental arches in closed position: correlation of teeth-antagonists; relationship of first permanent molars; relationship of canines; relationship of “central line” between the central incisors of the upper and lower jaws, overlapping the upper incisors over lower incisors.

Armamentarium supplying:

1. Gypseous models in occluder – 1.

An algorithm of fulfilled practical skills implementation 5.25
To conduct an anthropometric studying of models after Pont.

Purpose: To measure the width of dental arch after Pont

A technique of practical skills fulfillment

It is measured with pair of orthodontic compasses a width each of 4-th incisors of upper jaws and is found their sum. It is measured with a pair of orthodontic compasses the width of dental arch between the first premolars and first molars of the upper jaw. Taking into account the data of the Pont's table it should be found the width of a dental arch in the area of first premolars and first molars, which answer the sum of width of four incisors. Then received results should be compared with the distance between first premolars and first molars.

Armamentarium supplying:

1. Pont's table – 1.
2. Orthodontic pair of compasses – 1.
3. Gypseous models in occluder – 1.
4. Orthodontic ruler – 1.
5. Pencil-marker – 1.

An algorithm of fulfilled practical skills implementation 5.26
Carrying out the anthropometric studying
of diagnostic models after Korkhauz

Purpose: To determine the frontal area length of the dental arch after the method of Korkhauz.

A technique of practical skills fulfillment

The method of Korkhauz consists in determination of the frontal area length of the dental arch in dependence on the sum of mesiodistal widths of 4th upper incisors. For this purpose there are measured the mesiodistal widths of upper incisors with the help of orthodontic pair of compasses and they are summarized. The Pont's points on the first premolars are connected with a straight line. Measuring is carried out from a contact point on the vestibular surface of cuttings edges of central incisors to crossing line between premolars (it should be perpendicular to premolar line). Then it is used a table, where the sum of width of incisors answers certain length of frontal area of dental arch.

Armamentarium supplying:

1. Diagnostic models – 1
2. Orthodontic pair of compasses – 1.
3. Pencils-markers – 1.
4. Orthodontic line – 1.
5. Korkhauz's table - 1.

An algorithm of fulfilled practical skills implementation 5.27 ***Measuring of the upper dental arch segments after Gerlah***

Purpose: To define length of the dental arch segments on a diagnostic model after Gerlah

A technique of practical skills fulfillment

A front upper segment (SI) is determined after the sum of mesiodistal widths of upper incisors.

Right and left lateral segments on an upper jaw (Lor and Lol accordingly) are measured by the chord size, the line which connects the mesial surface of canines in the point of contact with lateral incisors with the distal surface of first molars in the point of their contact with second molars.

After measurements it is formed the following formula:

$$Lor \geq SI \leq Lol$$

Armamentarium supplying:

1. Diagnostic models – 1.

2. Orthodontic pair of compasses – 1.
3. Pencil – marker – 1.

An algorithm of fulfilled practical skills implementation 5.28
To choose the orthodontic appliance construction according to pathology on a diagnostic model

Purpose: To choose the type of appliance in accordance with the action principle according to pathology and age-old features on a diagnostic model.

A technique of practical skill's fulfillment

- in the case of the dental arch anomaly (narrowing, protraction or retraction of frontal area of dental arch) are used accordingly removable appliances of mechanical action with a screw or Coffin's spring of , labial bow, sector on a frontal area;
- in the case of anomaly of occlusion in primary and early mixed dentition in saggital, vertical, transversal planes;
- appliances of functional and combined (functional and mechanical) action (Andresen's monoblock) and connection of the last with the mechanical elements of (screw, labial bow);
- in the case of occlusion anomalies in the period of late mixed dentition are removable appliances with inclined anterior bite planes, and also bracket-systems;
- in the case of occlusion anomalies in the period of permanent dentition fixed appliances, removable appliances of mechanical action.

Armamentarium supplying:

1. Diagnostic models – 1.
2. Orthodontsc appliances:
 - Removable appliance on the lower jaw with an inclined anterior bite plane in the front region and posterior bite planes in posterior regions (Bunin's appliance);
 - Fixed appliance on the lower jaw with inclined anterior bite plane in the front region (Schwartz's appliance);
 - Removable appliance on the lower jaw with the inclined anterior bite plane and labial bow in front region (Brukl's appliance);
 - Andresen's appliance with two labial bows;

- Removable appliance on the upper jaw with the inclined anterior bite plane and labial bow (Schwartz's appliance);
- Removable appliance on the upper jaw with a screw and labial bow;
- Removable appliance on the upper jaw with the Coffin's spring;
- A three-sectored removable appliance on the upper jaw;
- Removable appliance on a lower jaw with screw and labial bow;
- Removable appliance on the upper jaw with a screw and bite plane on lateral teeth and activators-omegas on lateral incisors;
- Removable appliance on the upper jaw with a screw and labial bow and hand like activators on canines.

An algorithm of fulfilled practical skills implementation 5.29
To fulfill the activating of orthodontic appliance

Purpose: To choose the type of orthodontic appliance according to the action principle and age peculiarities on the diagnostic model.

A technique of practical skills fulfillment

Removable appliances. Elements of removable appliances which are activated more often are a screw, spring, labial bow, rarer rubber elastics.

Orthodontic screw has 4 foramens which are located through 90° one from another, are marked with a pointer, which specifies direction of untwisting of a screw, and also is provided by the special key for his untwisting. The complete turn of a screw answers divergence of elements of orthodontic appliance on 1 mm. As a rule, a screw is untwisted on ¼ turns (90°), that is on ¼ mm. The method of activating of screw consists in the following: the key is inserted in foramen of a screw and in direct of a pointer is returned him on 90°. The rate of activating depends on the purpose of treatment and is appointed by orthodontist every day, in a day, 2 times per a week, 1 time per 5 days, 1 time per a week, or somehow differently.

An oral spring as "omega" is applied at oral position of teeth and activated by its delicate stretch by pliers on 0,5mm.

A vestibular spring is used in case of the vestibular position of teeth, and also for the vertical moving of the last. It has the appearance of finger with the special compensative spring in the middle. In a horizontal plane it is activated by a bend in the area of compensative spring, and in a vertical plane – by diminishing or multiplying the diameter of compensative spring.

A labial bow is activated by the compression of compensative springs in the area of canines.

Activating of orthodontic springs is controlled by an orthodontic dynamometer which is fixed on one end of effort on pulling, and on the second on pressure. Efforts are recommended followings: for incisors – to 40 gm, canines and premolars – to 70 gm, molars – 180-200 gm; common effort on incisors and canines during activating of labial bow (subject to the condition even division of force on all teeth) – 300 - 350 gm.

Armamentarium providing:

1. Removable appliances with screw and labial bow – 4.
2. Removable appliances with spring activators – 4.
3. Pliers – 4.
4. Orthodontic keys - 4.

An algorithm of fulfilled practical skills implementation 5.30 ***Technique of application anaesthesia in children***

The aim: to conduct application anaesthesia

Method of practical skill implementation

1. To insulate the place of anaesthetizing from access of saliva by wadding rollers
2. To dry up the place of anaesthesia
3. Into place of anaesthesia to inflict the tampon saturated with an anaesthetic such as (lidocaine -10%, piromicain 1-2% solution or 4% ointment) on 1-2 minutes

Material providing:

1. Instruments for the examination of a stomatological patient
2. Wadding tampons
3. Local anaesthetic (lidocaine -10%, piromicain 1-2%)

4. Phantom of skull

An algorithm of fulfilled practical skills implementation 5.31 ***Technique of infiltration anaesthesia in children***

The aim: to conduct infiltration anaesthesia

Method of practical skill implementation

1. Upper or lower lip, whether a cheek take by a stomatological mirror
2. Process the place of anaesthesia by antiseptic solution
3. The syringe in a right hand
4. By a needle do in mucus transitional fold under the corner of a 40-45° to the surface, that it is necessary to anaesthetize; infiltrated the tissues by advancement of needle slowly introduction of solution towards the place of the planned interference that prevents the wound of bloods vessels and formation of haematomas.
5. Inject 1-1.5 ml of anaesthetic, moving forward a needle deep into the tissues, that to create the depot of anaesthetic.
6. After the leading out of needle from tissues it is necessary by a tampon to pin soft tissues against a bone, that is instrumental in the best impregnation of bone by anaesthetic, not accumulation of him only in soft fabrics.

Material providing:

1. Instruments for the examination of a stomatological patient
2. Wadding tampons
3. Local anaesthetic
4. Phantom of skull

An algorithm of fulfilled practical skills implementation 5.32 ***Technique of tuberositas anaesthesia in children***

The aim: to conduct tuberositas anaesthesia

Method of practical skill implementation

1. At semiserried jaws draw off the corner of mouth (right, left)
2. After palpation of crista zygomatica alveolaris prick a needle in a mucus shell some below fornix vestibule and behind the crista zygomatica alveolaris above second molar.

3. A needle is moved forward in direction of behind, upper, to the middle on a depth above 0.5 – 1.5cm in dependence of age of patient
4. At advancement of needle carry out an aspiration test and conduct emitting of negligible quantity of anaesthetic with the purpose of warning of damages of bloods vessels and formation of haematomas.
5. Moving forward a needle on a certain depth inject 0.5-1.5 ml of anaesthetic.
6. In 3-5 minutes after introduction of anaesthetic, anaesthetizing of molars and proper area of gums comes from a cheek side. Gums from a palatal side in the area of anaesthetizing do not get. That is why for the delete of molars the necessary anaesthetizing of tissues is from a palatal side.

Material providing:

1. Instruments for the examination of a stomatological patient
2. Wadding tampons
3. Local anaesthetic (lidocaine -10%, piromicain 1-2%)
4. Phantom of skull

An algorithm of fulfilled practical skills implementation 5.33
Technique of torus anaesthesia in children

The aim: to conduct torus anaesthesia

Method of practical skill implementation

1. A mouth is maximally opened
2. The place of a prick is the lateral corner of pterigoideo-jaw fold on a border with mucus of cheeks. The prick in a furrow is conducted on 0,5 ml below masticatory surface of second upper molar. A syringe takes place on the lower molars of the opposite side, and a needle is directed athwart to the plane of branch of lower jaw.
3. The needle is moved toward to the bone on a depth by 0.25 – 1.5 cm conduct aspiration test and enter 1-1.5 ml of anaesthetic.
4. Drawing aside a needle to itself on a few ml produce 0.3-0.5 ml of anaesthetic for anaesthetizing of n. Lingualis
5. In 3-5 minutes, anaesthetizing comes after introduction of anaesthetic.

Material providing:

1. Instruments for the examination of a stomatological patient
2. Wadding tampons
3. Local anaesthetic (lidocaine -10%, piromicain 1-2%)
4. Phantom of skull

An algorithm of fulfilled practical skills implementation 5.34
Technique of mandibular anaesthesia at children

The aim: to conduct mandibular anaesthesia

Method of practical skill implementation

1. A patient maximally widely opens a mouth
2. A furrow concerns between pterygomandibularis fold and mucus shell of the cheek.
3. A syringe with anaesthetic is hold by three fingers of the right hand at horizontally level of premolars of the opposite side.
4. The needle is pricked in a point which on 0.7-1.0 cm higher or at the level of (depending on age of a patient) occlusal surface of molars, medial from crista temporalis.
5. The needle is moved forward on a depth by 0.5-0.7 mm enter 0.5 ml of anaesthetic for anaesthetia of n. lingualis farther moves forward a needle yet on 1-1.5 cm to the bone and enter to 1 ml of anaesthetic (depending on age of a patient).

Material providing:

1. Instruments for the examination of a stomatological patient
2. Wadding tampons
3. Local anaesthetic (lidocaine -10%, piromicain 1-2%)
4. Phantom of skull

An algorithm of fulfilled practical skills implementation 5.35
Technique of infraorbital anaesthesia at children

The aim: to conduct infraorbital anaesthesia

Method of practical skill implementation

1. Overhead lip in the projection of lateral chisels, where anaesthesia will be

conducted, draw off up and distal and fix in such position by the large finger of the left hand.

2. Lay the index finger of the left hand on the infraorbital edge.
3. Process the place of anaesthesia by anaesthetic.
4. A syringe with anaesthetic hold by three fingers of the right hand.
5. Do the prick as possible higher from a transitional fold, oriented on proection: at primary and mixed dentition- between the roots of primary molars, at permanent – between the roots of premolars.
6. Move forward a needle from below up to infraorbital edge, where the finger of the left hand is fixed.
7. Reaching to the bone near foramen infraorbitalis draw off the piston of syringe back , to make sure, that did not get in the road clearance of vessel, enter 0,5 ml of anaesthetic.

Material providing:

1. Instruments for the examination of a stomatological patient
2. Wadding tampons
3. Local anaesthetic (lidocaine -10%, piromicain 1-2%)
4. Phantom of skull

**Рецензія
на алгоритми практичних навичок зі
стоматології дитячого віку для студентів
стоматологічного факультету
із англomовною формою навчання**

Алгоритми практичних навичок зі стоматології дитячого віку, підготовані проф. Смоляр Н.І., доц. Чухрай Н.Л., доц. Безвушко Е.В, доц. Крупник Н.М., ас. Дубецькою-Грабоус І.С., включають основні маніпуляції з дитячої терапевтичної стоматології, дитячої хірургічної стоматології, профілактики стоматологічних захворювань та ортодонтії. Алгоритми розраховані на покращання засвоєння практичних маніпуляцій зі стоматології дитячого віку студентами стоматологічного факультету з англomовною формою навчання .

Алгоритми складаються із 35 окремих детально описаних практичних навичок, які охоплюють основні маніпуляції із всіх дисциплін: 14 алгоритмів з профілактики стоматологічних

захворювань, 7 - із дитячої терапевтичної стоматології, 8 - із ортодонтії та 6 - із дитячої хірургічної стоматології.

Кожний алгоритм складений таким чином, щоби студент розумів мету даного практичного навичка, техніку його виконання по етапах та матеріальне забезпечення, необхідне для його виконання .

Окремі алгоритми присвячені таким важливим практичним навичкам, як виконання розкриття порожнини зуба та проведення ампутації пульпи тимчасового зуба, інструментальна та медикаментозна обробка корневих каналів зуба із несформованими коренями, проведення імпрегнації каріозних порожнин та корневих каналів, оцінка ортопантомограми, діагностика зубо-щелепових аномалій, проведення провідникових анестезій.

Опрацьовані алгоритми практичних навичок сприятимуть покращанню ефективності навчального процесу та підвищенню якості підготовки студентів з англomовною формою навчання до державного практичного іспиту, що дозволяє рекомендувати їх до друку.

Рецензент:

к.м.н., доц. кафедри

хірургічної стоматології ЛНМУ

імені

Данила

Галицького

Огоновський Р.З.

**Рецензія
на алгоритми практичних навичок з
стоматології дитячого віку для студентів
стоматологічного факультету
з англomовною формою навчання**

Алгоритми практичних навичок зі стоматології дитячого віку, підготовані проф. Смоляр Н.І., доц. Чухрай Н.Л., доц. Безвужко Е.В, доц. Крупник Н.М., і ас. Дубецькою-Грабуоз І.С. складаються із 35 окремих практичних навичок, які охоплюють основні маніпуляції із всіх дисциплін, що вивчаються на кафедрі стоматології дитячого віку: 14 алгоритмів з профілактики стоматологічних захворювань, 7 - із дитячої терапевтичної стоматології, 8 - із ортодонтії та 6 - із дитячої хірургічної стоматології.

Алгоритми розпрацьовані з метою для покращання засвоєння практичних маніпуляцій зі стоматології дитячого віку студентами стоматологічного факультету з англomовною формою навчання .

Кожний алгоритм складений чітко та лаконічно, таким чином, щоби студент розумів мету даного практичного навичка, техніку його виконання по етапах та матеріальне забезпечення, необхідне для його виконання .

Окремі алгоритми присвячені таким важливим практичним навичкам, як виконання розкриття порожнини зуба та проведення ампутації пульпи тимчасового зуба, інструментальна та медикаментозна обробка корневих каналів зуба із несформованими коренями, проведення імпрегнації каріозних порожнин та корневих каналів, оцінка ортопантомограми, діагностика зубо-щелепових аномалій, проведення провідникових анестезій.

Опрацьовані алгоритми практичних навичок сприятимуть покращанню ефективності навчального процесу та підвищенню якості підготовки студентів з англomовною формою навчання до державного практичного іспиту, що дозволяє рекомендувати їх до друку.

Рецензент:

к.м.н., ас. кафедри

терапевтичної стоматології ЛНМУ

імені Данила Галицького

О.Р.

Ріпецька

Рецензія
на алгоритми практичних навичок з
стоматології дитячого віку для студентів
стоматологічного факультету
з англomовною формою навчання

Алгоритми практичних навичок зі стоматології дитячого віку, підготовані проф. Смоляр Н.І., доц. Чухрай Н.Л., доц. Безвушко Е.В., доц. Крупник Н.М., і ас. Дубецькою-Грабоуз І.С. для покращання засвоєння практичних маніпуляцій зі стоматології дитячого віку студентами стоматологічного факультету з англomовною формою навчання. Вони складаються із 35 окремих практичних навичок, які охоплюють основні маніпуляції із всіх дисциплін, що вивчаються на кафедрі стоматології дитячого віку.

Кожний алгоритм складений чітко та лаконічно, таким чином, щоби студент розумів мету даного практичного навичка, техніку його виконання по етапах та матеріальне забезпечення, необхідне для його виконання .

Алгоритми викладено доступно та зрозумілою англійською мовою, що відповідає стандартам наукового медичного тексту.

Опрацьовані алгоритми практичних навичок сприятимуть покращанню ефективності навчального процесу та підвищенню якості підготовки студентів з англomовною формою навчання до державного практичного іспиту, що дозволяє рекомендувати їх до друку.

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