

Стом-21 ИИ

Federal State Budget Educational Institution of Higher Education “North-Ossetia State Medical Academy” of the Ministry of Health of the Russian Federation

Department of otorhinolaryngology with ophthalmology

**GUIDELINES FOR PRACTICAL CLASSES IN OTORHINOLARYNGOLOGY FOR
MEDICAL INSTITUTES TEACHERS**

the main professional educational program of higher education - specialist's programs in
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Guidelines for practical lessons in otorhinolaryngology for teachers of the 4th year of FSBEI HE NOSMA of the Ministry of Health of Russia in otorhinolaryngology

Approved at the meeting of the Central Educational and Methodological Committee of FSBEI HE North –Ossetia State Medical Academy” of the Ministry of Health of Russia as of "02" April, 2024, Protocol №. 4

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The purpose of the teaching guidelines is to help teachers of medical schools in the methodology of teaching and monitoring the study of the discipline of otorhinolaryngology.

GENERAL PROVISIONS

Otorhinolaryngology is a special clinical discipline dealing with the study of morphological and physiological features and pathology of the ear, upper respiratory tract and adjacent areas. It includes most of the analyzers and, above all, the auditory one, which plays the most important role in the process of cognition and the formation of the speech function, which constitutes the activity of the second signal system. Otorhinolaryngology also includes vestibular, olfactory and gustatory analyzers.

Otorhinolaryngological service takes an important place in the public health system, since it provides diagnostic and therapeutic help to 12-15% of all the patients, and more than 60% of appeals fall on children and adults of young, most employable age. Ear and upper airways are primarily exposed to the influence of different environmental factors, including hypothermia, noise, vibration, ionizing radiation, dust, different chemical compounds, angular and linear acceleration, often many times exceeding the excitability threshold of the vestibular analyzer. ENT organs are often affected by acute and chronic infectious diseases. Occurring cochleovestibular disorders can lead to long-term disability of patients. Ear and upper respiratory tract diseases are often accompanied by lesions of other organs and body systems. All this determines the social importance of the specialty.

Otorhinolaryngology is largely a preventive discipline, so the proper organization of otorhinolaryngologist's work on clinical examination together with other doctors - primarily a therapist, pediatrician and dentist - is very important in reducing ENT morbidity. All the above mentioned makes obvious the necessity of thorough studying of fundamentals of otorhinolaryngology by medical students.

Classes are held at the Department of Otorhinolaryngology and in the Ear, Nose and Throat Diseases Clinic or basic institutions of the department, in the department of head and neck tumors of oncologic dispensary, polyclinics. During the cycle students work in the dressing room, visit the operating room, audiology and vestibulology laboratories, the offices of endoscopic technique and physical methods of treatment. Students conduct outpatient appointments, complete relevant medical documentation, and perform diagnostic and therapeutic manipulations.

Educational and research work of students - ERS with the use of its various forms is supposed to be carried out. The initial and final level of knowledge is tested; situational tasks and computer training programs are used, which brings the student to the real activity of a doctor.

Some sections of the specialty are not discussed in practical classes, they are covered at the lectures. The classes are carried out according to the following plan: organizational stage, programmed control of the initial level of knowledge, analysis of the main questions of the topic, independent work of the students; programmed control of the final level of knowledge with case study and testing; summarizing the lesson.

Practical skills (techniques) to be mastered by students during the course of practical classes are:

- 1) Anterior rhinoscopy;*
- 2) Posterior rhinoscopy;*
- 3) Otoscopy;*
- 4) Indirect laryngoscopy;*
- 5) Winding absorbent cotton on the probe;*
- 6) Clearing the ear canal;*

- 7) Ear irrigation;
- 8) Blowing the ear;
- 9) Examination of auditory function;
- 10) Examination of statokinetic function
- 11) Insufflation of powders
- 12) Mucous membrane anesthesia
- 13) Infusion of drops into nose, ear
- 14) Swabbing
- 15) diaphanoscopy
- 16) Bandage application: on the ear; on the nose;
- 18) Ability to select instruments for tracheotomy;
- 19) Reading ENT-radiographs, MRI and CT;
- 20) Receiving outpatients.

LESSON 1

Topic. METHODOLOGY AND TECHNIQUE OF ENDOSCOPIC EXAMINATION OF ENT ORGANS

The relevance of mastering endoscopic examination of ENT organs is explained by the need to use it in practice not only for otorhinolaryngologists, but also for general practitioners.

Objective. After studying the topic, the student must:

- have an idea of the general principles of examination of otorhinolaryngological patients;
- know how to work with the frontal reflector and otorhinolaryngological instruments, the method of examining the ear, nose, pharynx, larynx, the description of the endoscopic picture;
- be able to organize a workplace; know how to work with a frontal reflector and viewing instruments; develop skills for external examination of ENT organs, the ability to perform otoscopy, anterior and posterior rhinoscopy, pharyngoscopy, indirect laryngoscopy.

Classes are held in a theme training room at the Department of ENT diseases.

Equipment: frontal reflector; nasal mirrors; spatulas; ear funnels; nasopharyngeal and laryngeal mirrors; ear and nose tweezers and probes; nasopharyngeal and laryngeal mirrors; a set of endoscopic instruments with cold lighting (otoscope, postrinoscope, rhinoscope, laryngoscope, etc.); tables; a set of slides, specimens and dummies on the anatomy of the pharynx and oropharynx.

SUMMARY OF THE LESSON.

Informing the students of the plan and conditions of the practical training in otorhinolaryngology. Tour of the clinic. The professor demonstrates: frontal reflector, instruments and devices for endoscopy, student workplaces, the method of using the frontal reflector in the study of ENT organs on each other with the maximum help of the teacher

Table 1

SELF-STUDY ASSIGNMENT FOR THE PRACTICAL CLASS

Questions	Objective	Self-check tasks	References
1. Basic anatomical concepts necessary to describe the endoscopic picture of ENT organs	Repeat to use when examining ENT organs	Schematically draw and mark the indicate anatomical elements of the nasal cavity, oropharynx, larynx	1) Palchun V.T., Magamedov M.M., Luchikhin L.A. Otorhinolaryngology: textbook M.: Medicine 2007
2. Equipment and instrumentation for endoscopic examination	Know to later use in practice	Enumerate describing the application area	Moscow: GEOTAR-Media, 2014. 2) Palchun V. T.,

3. Otoscopy	Get an idea to develop skills	Draw the eardrum and indicate its identifying marks	<p>Kryukov A. I., Magomedov M. M. Otorhinolaryngology: textbook M.: Geotar-Media, 2020</p> <p>3) Luchikhin L.A. Otorhinolaryngology. Textbook. -GEOTAR-Media. - 2016. - 584 p.</p> <p>4) Luchikhin L.A. Examination of the otorhinolaryngological patient. - GEOTAR-Media. - 2014 - 256 p.</p> <p>5)Palchun V. T. [et al]. Examination of ENT patient (Examination of ENT patient). M. Litterra, 2014.</p>
4. Anterior rhinoscopy	Get an idea to develop skills	Name positions, draw and describe the normal rhinoscopic picture	
5. Posterior rhinoscopy		Draw a picture of the nasopharynx and label its anatomical elements	
6. Pharyngoscopy		Name two moments, draw and describe a normal pharyngoscopic picture	
7. Indirect laryngoscopy		Name three moments and draw and describe the position of the vocal folds during phonation and breathing.	

Table 2

LESSON PLAN (240 min.)

№ / №	Activity algorithm		Indicative signs		
	Consecutive	Means of action	Reason	Control criteria	Possible complications

	operations				
1	Basic anatomical concepts necessary to describe the endoscopic picture of ENT organs	Equipment and tools for performing endoscopic methods of examination	Visual, palpation, percussion, data of objective endoscopic examination of ENT organs, data of R-graphy of ENT organs, MRI, CT.	Schematically draw and label the main anatomical elements of the nasal cavity, oropharynx, pharynx and ear	Injuries to the mucous membrane of the nasal cavity, oropharynx; skin of the external auditory canal; painful sensations, etc., which may arise from inept and improper actions during ENT examinations.
2	Nasal and paranasal sinus examination technique - anterior rhinoscopy	Headlight reflector; or self-contained light source; endoscopes with different angles of view; nasal speculum	Visual, palpation (external nose; anterior lower walls of frontal sinuses; anterior walls of maxillary sinuses; submandibular and cervical lymph nodes) percussion, data of objective endoscopic nasal cavity examination, data of R-graphy of accessory sinuses, MRI, CT scan.	Nasal cavity vestibule; mucous membrane color: pink; hyperemic; with whitish spots, etc.; septum: midline; deformed - ridge, spike; nasal shells (lower, rarely middle): not enlarged; hypertrophied; atrophied, covered with brownish or yellow-green crusts; with smooth, lumpy or coarse grained surface; have wide base and considerable size	Injuries to the mucous membrane of the nasal cavity; pain, etc., which can arise from inept and improper actions during the examination of ENT organs.

3	Posterior rhinoscopy	Headlight reflector; or self-contained light source; endoscopes with different angles of view; nasopharyngeal mirror; spatula	Visual, finger examination of nasopharynx, data of objective endoscopic examination of nasopharynx, data of R-graphy of nasopharynx in axial projection, MRI, CT scan.	Nasopharyngeal vault: loose, filled with adenoid vegetation, tumor-like formation, etc.; choanas, posterior ends of nasal concha: hypertrophied; atrophied; with smooth, lumpy or coarse-grained surface, pharyngeal openings of auditory tubes	Injuries to the oropharyngeal mucosa; burns of the soft palate, root of the tongue, pain, etc., which can occur from inept and improper actions during ENT examinations..
4	Pharyngeal examination technique	Headlight reflector or self-contained light source; two spatulas	External examination, palpation, pharyngeal endoscopy	Oral vestibule (mucosa, parotid salivary glands discharge ducts, oral cavity, teeth, gums, hard palate, tongue, discharge ducts of sublingual and submandibular salivary glands, bottom of mouth), mobility and symmetry of soft palate, palatine and palatopharyngeal arches, size of palatine tonsils, contents of lacunes, posterior pharyngeal wall	Injuries to the oropharyngeal mucosa; pain, etc., which can occur from inept and improper actions during ENT examinations.
5	Laryngeal examination technique - indirect laryngoscopy	Headlight reflector or self-contained light source; laryngeal	External examination, palpation of the larynx, cartilage,	Root of tongue with lingual tonsil, epiglottis, valleculae,	Traumatic mucous membrane injuries; burns of the soft

	y	mirror; endoscopes	determining cartilage crunch, pain, passive lateral mobility, regional lymph nodes: submandibular, deep cervical, posterior cervical, pre-laryngeal, pre- and paratracheal, supra- and subclavian, indirect laryngoscopy - hypopharyngoscopy	vocal folds, vestibular folds, ventricles of larynx, scapular cartilages, interscapular space, scapulonadigal folds, pear-shaped pockets, symmetric mobility of both halves of larynx, subvocal space, upper rings of front tracheal wall are evaluated	palate, root of the tongue, pain, etc., which can occur from inept and improper actions during ENT examinations.
6	Ear examination technique - otoscopy	Headlight reflector; or self-contained light source; ear funnel; otoscope, operating or diagnostic microscope	External examination, palpation (of ossicle, mastoid process, regional lymph nodes in front, downward, behind the external auditory canal), otoscopy	Skin of the external auditory canal, tympanic membrane (color, short process, malleolus handle, anterior and posterior malleolus folds, light cone, navel of tympanic membrane)	Injuries to the skin of the external auditory canal; pain, etc., which may result from inept and improper actions during ENT examinations.
7	Esophagoscopy	Brunings, Mezrin, Friedel bronchoscopes and fiber optics, electrical suction, forceps set for foreign body removal and biopsy	Esophagoscopy technique	Epiglottis, scapular cartilages, esophageal inlet, esophageal mucosa, esophageal constrictions	Injuries of mucous membrane, perforation of esophageal wall

8	Tracheobronchoscopy	Brunings, Mezrin, Friedel bronchoscopes and fiber optics, electrical suction, forceps set for foreign body removal and biopsy	Upper and lower tracheobronchoscopy	Vertebral slit, tracheal walls, bifurcation area, major and lobe bronchi, examination of tracheobronchial tree	Injuries of mucous membrane, perforation of esophageal wall or bronchi
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Lesson 2

Topic: CLINICAL ANATOMY, PHYSIOLOGY AND RESEARCH METHODS OF THE AUDIO ANALYZER

Relevance: the auditory analyzer contributes to the formation of speech function and is of great social importance.

Objective. After studying the topic the student must:

Have an understanding of the anatomic and topographic relationship of the ear with adjacent organs, of audiometry, tympanometry, radiological examination of the ear, CT, MRI.

Know the clinical anatomy and physiology of the auditory analyzer;

Be able to perform external examination and palpation of the ear, otoscopy, methods of examination of the external, middle ear and cochlea. To determine the mobility of the tympanic membrane, the patency of the auditory tube, to test hearing acuity by speech, to perform chambertonal tests, tonal threshold audiometry, tympanometry.

Classes are held in a theme study room in the Department of Otorhinolaryngology or in the surdology office.

Equipment: Frontal reflector, set of ear funnels, ear probe, ear forceps, otoscope, GSI 38 audio tympanometer, Sigle pneumatic funnel, ear manometer, set of tuning forks, ear ratchets, Politzer balloon, stopwatch, ear manometer, slides, drawings, preparations and moulages of the hearing organ, diagrams of conducting pathways, word tables, acumetric formula table, audiograms, X-rays, CT, MRI.

Table 3

SELF-STUDY ASSIGNMENT FOR THE PRACTICAL CLASS

	Questions	Objectives	Self –check tasks	References
1	Detailed structure of the external, middle and inner ear	Have an idea of the anatomical and topographic features in the study of ear pathology	List the anatomical structures included in the concept of the external, middle and inner ear	1) Palchun V.T., Magamedov M.M., Luchikhin L.A. Otorhinolaryngology: textbook M.: Medicine 2007
2	Anatomical and topographic features of the external auditory canal	Know how to apply when studying external ear diseases	Name two sections, structural features of their skin, the clinical significance of the topography of the external auditory canal walls	Moscow: GEOTAR-Media, 2014. 2) Palchun V. T., Kryukov A. I., Magomedov M. M. Otorhinolaryngology: textbook M.: Geotar-
3	Clinical anatomy of	Know how to apply when	Name the walls, three sections, list the	

	the tympanic cavity, its sections and contents	studying external ear diseases	contents. Show identification marks, divide eardrum into quadrants, draw right and left tympanic membranes	Media, 2020 3) Palchun V. T. Otorhinolaryngology: a national guide M. : GEOTAR-Media, 2008 4) Luchikhin L.A. Otorhinolaryngology. Textbook. -GEOTAR-Media. - 2016. - 584 p. 5) Stratieva O.V. Clinical anatomy of the ear. - SPb.: SpetsLit. - 2004 - 256 p. 6) Boboshko M.Yu. The auditory tube. - SPb.: SpetsLit. - 2003. - 353 p.
4	Structure of the auditory ossicles	Know how to apply when studying diseases of the middle ear and their complications, as well as surgical interventions	Name and show the auditory ossicles, anatomic features, and joints	7) Ovchinnikov Y.M., Gamov V. P. Diseases of the nose, throat, larynx and ear: textbook M. Medicine, 2003
5	Topography of the facial nerve	Know how to apply when studying diseases of the middle ear and their complications, as well as surgical interventions	Name the two knees of the facial nerve and the walls of the tympanic cavity in which they are located	8) Komarov M. V. [et al.]. Atlas. Otoscopy. Pathology of the ear in color: a practical manual of otorhinolaryngology SPb : Poliforum, 2017
6	Anatomy of the auditory tube	Know how to apply when studying diseases of the middle ear	To name the two sections, the structural features of their mucous coat, clinical significance	
7	Mastoid process and its walls	The same	Name the two departments and the localization of the mouth, list the functions	
8	Mastoid	-//-	Name the structure types	
9	Structure of the bony and membranous cochlea	-//-	Know the anatomical features of the structure	
10	Receptor apparatus, pathways and centers of the auditory analyzer	-//-	-//-	
11	Adequate stimulus and patterns inherent in the auditory analyzer	Know how to apply when studying the function of the auditory analyzer	Name and show in the table	
12	Functional sections of the	Know how to apply when	Name the two sections	

	auditory analyzer	examining the function of the auditory analyzer	
13	Sound conducting mechanism	-//-	Name anatomical structures included in the sound conducting apparatus
14	Theories of hearing	-//-	Name
15	Methods of hearing testing	Topical diagnosis of lesions of the auditory analyzer	Name research methods, list the necessary instruments and electroacoustic equipment
16	Auditory passport	Topical diagnosis of lesions of the auditory analyzer	Draw a scheme, learn how to perform a tuning fork test
17	Tone threshold audiometry	Diagnosis of sound conduction and sound perception	List degrees of hearing loss, types of audiograms
18	Tympanometry	Diagnosis of sound conduction	List types of tympanograms, acoustic reflexometry, (ipsi-, contralateral
19	Barofunction of the ear	Know how to apply in diagnosis and in professional selection	

ORGANIZATION AND CONTENT OF THE LESSON .

During the interview attention is paid to the division of the hearing organ into sound-conducting and sound-receiving (sound analyzer) systems; to their structure; to different ways of hearing research (speech, chamberton, audiometer, unconditioned reflexes); to the purpose of bone and air conduction hearing research; to the possibility of using not only threshold, but also suprathreshold audiometry; to the ways of recording the obtained data (documentation).

After the interview the students, advised by the instructor, are familiarized with a set of tuning forks and other hearing testing equipment, as well as with the acumetric formula. Then the instructor demonstrates on one of the students the technique of hearing examination by speech and tuning forks with filling in the acumetric formula.

Table 4
Auditory passport

Right ear	Tests	Left ear
	SSH	
	SHR	

	RR	
	C128	
	C2048	
	KC128	
	R (Rinne)	
	W (Weber)	
	S (Shwabach)	
	F (Federici)	
	G (Gelle)	

I test - subjective tinnitus (SS). There are three degrees of tinnitus: the first degree (+) reveals tinnitus only during active questioning, the second degree (++) shows tinnitus complaints along with other complaints, and the third degree (+++) shows tinnitus as the leading complaint of the patient.

II test - whispered speech (S).

A set of two-digit numbers and words from V.I. Voyacek's table with predominance of bass and treble phonemes are used.

Then the teacher calls three students to examine hearing with speech and tuning forks, one of them examines the second student's hearing, and the third one writes down the results in the acumatic formula. The teacher asks the rest of the students in the group as they investigate their hearing. Two students then examine the hearing of a hospitalized patient and interpret the findings.

Table 5

LESSON PLAN (240 min.)

№ / №	Activity algorithm		Indicative signs		
	Means of action	Means of action	Reason	Control criteria	Possible complications
1	Subjective and objective methods of auditory function research	Chambertones C128, C512, C2048. Electroacoustic instruments - GSI 38 audiotympanometer,	Testing auditory function by live speech. Examination of bone conduction (C128, C512) Study of air conduction (C128, C512, C2048) Tone threshold audiometry, tonal suprathreshold audiometry, ultrasound auditory sensitivity testing, speech audiometry, HRT, CSVP, DSVP, impedance audiometry, and acoustic emission testing	Study of auditory function with spoken (10m) and whispered speech (6m). Duration of sound perception of a tuning fork through the air; duration of bone perception. Experiments by Rinne (R), Weber (W), Gelle (G), Federici (F). Presence of subjective tinnitus. Threshold curves of bone and air conduction, bone-air gap. Recruitment, Lusher's method - determination of differential threshold of perception of sound intensity, IMPI-test - index of small increments. Perception of ultrasound during bone conduction in the frequency range up to 20 kHz.	

				<p>Tympanometry is a registration of acoustic impedance of the acoustic system of the external, middle and inner ear, acoustic reflexometry is a registration of changes in flexibility of the acoustic conduction system during contraction of the stirrup muscle</p>	
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When testing hearing it is necessary to determine the side and place of damage to the organ of hearing. With receptor hearing loss it is sometimes necessary to determine the level of damage to the sound analyzer. To introduce the students to audiometry methodology the teacher takes them to the audiometric room with an isolation chamber. Tonal threshold and suprathreshold audiometry are demonstrated to them. The results of the research are entered on a special card - an audiogram, the teacher introduces the students to the interpretation of audiometric data. Further, the teacher introduces the students to methods of examining the ear (examination, palpation), demonstrates otoscopy, the use of the pneumatic Zigle funnel, blows the ears according to Politzer and shows how to conduct manometry when examining the patency of the auditory tube, tympanometry, audiometry.

Tests on "Clinical anatomy and physiology of the ear."

1. A PERSON HEARS BEST IN THE FREQUENCY RANGE

- 1) 50-800Hz
- 2) 800-4000Hz
- 3) 4000-10000Hz
- 4) 10000 - 15000 Hz

2. THE EAR LABYRINTH IS IN

- 1) mastoid process
- 2) scales of the temporal bone
- 3) pyramid of the temporal bone
- 4) zygomatic process

3. SOUND CONDUCTING DEPARTMENT OF THE SOUND ANALYZER IS IN

- 1) Reissner's membrane of the cochlea
- 2) Corti's organ

3) tympanic membrane and auditory ossicles

4. SOUND RECEIVING DEPARTMENT OF THE SOUND ANALYZER IS IN

- 1) tympanic membrane and auditory ossicles
- 2) external auditory meatus
- 3) Corti's organ
- 4) endolymph

5. THE ISTHMUS IN THE EXTERNAL AUDITORY CANAL IS IN

- 1) bone department
- 2) membranous-cartilaginous department
- 3) the passage between the membranous-cartilaginous section and the bone

6. THE COCHLEA AQUEDUCT OPENS INTO THE CRANIAL FOSSA

- 1) front
- 2) back
- 3) medium

7. THE SIGMOID SINUS IS LOCATED IN THE CRANIAL FOSSA

- 1) front
- 2) medium
- 3) back

8. SANTORINI'S DUCTS ARE ON THE WALL OF THE EXTERNAL AUDITORY CANAL

- 1) bottom
- 2) top
- 3) front
- 4) back

9. SOUND OSCILLATIONS VELOCITY IN THE AIR IS

- 1) 332 m/s
- 2) 952 m/s
- 3) 1350 m/s
- 4) 1740 m/s

10. THE FIRST NEURON OF THE SOUND ANALYZER IS IN

- 1) tympanic cavity
- 2) cochlea
- 3) internal auditory canal
- 4) medulla oblongata

11. THE POWER OF LOUD SPEECH IS EQUAL TO

- 1) 30dB
- 2) 50 dB
- 3) 65 dB
- 4) 80 dB

12. STUDY OF HEARING BY SPEECH IS

- 1) tympanometry
- 2) tone audiometry
- 3) acumetry
- 4) impedancemetry

13. IN EARLY CHILDHOOD THE EXTERNAL AUDITORY CANAL IS REPRESENTED BY THE DEPARTMENT OF

- 1) membranous-cartilaginous
- 2) bone
- 3) membranous-cartilaginous and bone

14. THE FUNDUS TYMPANY BORDERS WITH

- 1) temporomandibular joint
- 2) sigmoid sinus
- 3) the bulb of the jugular vein
- 4) internal carotid artery

15. THE METHOD OF HEARING STUDY WITH ELECTRO-ACOUSTIC EQUIPMENT IS CALLED

- 1) tonometry
- 2) acumetry
- 3) audiometry
- 4) echography

16. WHEN THE EXPERIMENT OF RINNE IS USED FORKING FORK

- 1) C 128
- 2) C 512
- 3) C 1024
- 4) C 2048

17. UPPER FLOOR OF THE TYMPANIC CAVITY IS

- 1) attic

- 2) antrum
- 3) aditus ad antum
- 4) promontory

18. THE PHARYNGEAL OPENING OF THE EUSTACHIAN TUBE OPENS INTO

- 1) nasal cavity
- 2) oropharynx
- 3) nasopharynx

19. LOW FREQUENCY SOUNDS ARE PERCEIVED IN THE COCHLEA IN

- 1) base area
- 2) areas of the middle section
- 3) apex areas
- 4) the whole cochlea

20. HIGH FREQUENCY SOUNDS ARE PERCEIVED IN THE COCHLEA IN

- 1) base area
- 2) areas of the middle section
- 3) apex areas
- 4) the whole cochlea

21. THE VOLUME OF WHISPERED SPEECH IS APPROXIMATELY EQUAL

- 1) 30 dB
- 2) 40 dB
- 3) 50 dB
- 4) 60 dB

22. THE REISSNER MEMBRANE IS IN

- 1) tympanic canal
- 2) vestibular canal
- 3) the vestibule of the cochlea
- 4) tympanic cavity

23. NORMALLY A WHISPER IS PERCEIVED AT A DISTANCE

- 1) 4m
- 2) 6 m
- 3) 10 m
- 4) 20 m

24. A POSITIVE PRESSURE TEST IS OBSERVED IN FISTULA OF

- 1) cochlea
- 2) the threshold of the labyrinth
- 3) semicircular canals

25. NEGATIVE RINNE TEST IS OBSERVED

- 1) in case of diseases of the sound-receiving department of the sound analyzer
- 2) in case of diseases of the sound-conducting department of the sound analyzer
- 3) regularly

26. HAIR AND SULFUR GLANDS ARE LOCALIZED IN THE EXTERNAL AUDIO CANAL

- 1) membranous-cartilaginous
- 2) bone
- 3) membranous-cartilaginous and bone
- 4) isthmus

27. THE TYMPANIC CAVITY IS CONNECTED WITH

- 1) nasopharynx
- 2) nasal cavity
- 3) cochlea
- 4) antrum

28. THE PARS TENSA OF THE TYMPANIC MEMBRANE CONSISTS OF

LAYERS

- 1) 2
- 2) 3
- 3) 4
- 4) 5

29. OBJECTIVE METHOD FOR STUDYING A SOUND ANALYZER IS

- 1) tone threshold audiometry
- 2) speech audiometry
- 3) tone suprathreshold audiometry
- 4) registration of auditory evoked potentials

30. THE TYMPANYCHORD IS A NERVE BRANCH

- 1) auditory
- 2) vestibular
- 3) facial
- 4) trigeminal

31. TYMPANOMETRY IS A STUDY OF

- 1) acoustic impedance
- 2) sound perception thresholds
- 3) sound conduction thresholds
- 4) auditory evoked potentials

32. THE POWER OF SOUND TO MAKE IT PAINFUL IS

- 1) 80 dB
- 2) 90 dB
- 3) 110 dB
- 3) 130 dB

KEYS TO THE TOPIC:

«Clinical anatomy and physiology of ear».

№	ANSWER	№	ANSWER	№	ANSWER	№	ANSWER
1	2	9	1	17	1	2	2
2	3	10	2	18	3	2	1
3	3	11	3	19	3	2	1
4	3	12	3	20	1	2	2
5	3	13	1	21	1	2	4
6	2	14	4	22	2	3	3
7	3	15	3	23	2	3	1
8	1	16	1	24	3	3	4

Homework: clinical anatomy, physiology, vestibular analyzer examination methods

Lesson № 3

Topic: CLINICAL ANATOMY, PHYSIOLOGY AND STUDY METHODS OF THE VESTIBULAR ANALYZER

Relevance. The vestibular analyzer belongs to the interreceptors, it perceives signals about the position of the body and head in space, changes in speed and direction of movement. Knowledge of clinical anatomy and physiology of the vestibular analyzer will allow to understand the mechanism of vestibular disorders (dizziness, nausea, vomiting, balance disorder, etc.) arising from its defeat. The study of functional state of the vestibular analyzer is also necessary for professional selection, especially for the decision of suitability for sea or flight service, as well as

in conditions of weightlessness during spaceflight.

Objective. After studying the topic the students should:

have an idea of the connection between the vestibular analyzer and other systems of the body, modern vestibulometry;

know the clinical anatomy and physiology of the vestibular analyzer;

be able to identify spontaneous vestibular disorders, make up a vestibular passport and make a conclusion about the state of vestibular function.

Place of classes - theme study room in the Department of Otorhinolaryngology or in the ENT hospital and vestibulological laboratory.

Equipment: Slides, drawings and models of the inner ear, statokinetic receptors, conductive pathways. Histological preparations of ampullary and statokinetic receptors; microscopes. Barani rotating chair, Jeanet syringe or Esmarche mug for caloric test, water thermometer, stopwatch. Vestibulologic laboratory equipment. Models, bone preparations, tables, slide sets.

Table 6

SELF-STUDY ASSIGNMENT FOR THE PRACTICAL TRAINING

Questions	Objectives	Self-study tasks	Information sources
The parts of the inner ear belonging to the vestibular analyzer	Revise for further study of pathology	Name two departments	1) Palchun V.T., Magamedov M.M., Luchikhin L.A. Otorhinolaryngology: textbook M.: Moscow: GEOTAR-Media, 2014. 2) Palchun V. T., Kryukov A. I, Magomedov M. M. Otorhinolaryngology: textbook M.: Geotar-Media, 2020 3) Palchun T. Otorhinolaryngology:

Anatomy of the semicircular canals and structure of the cupular apparatus	-//-	Draw and mark the semicircular canals and the receptor in them	national manual M.: GEOTAR-Media, 2008 4) Luchikhin L.A. Otorhinolaryngology. Textbook. – Approved by ME RF. -GEOTAR-Media. - 2016. - 584 p. 5) Ovchinnikov Y.M., Gamov V.P. Diseases of the nose, pharynx, larynx and ear: textbook M. : Medicine, 2003 6) Palchun V. T. [et al] Examination of otorhinolaryngological patient (Examination of ENT patient). M. Litterra, 2014.
Anatomy of the vestibule and structure of the otolith apparatus	-//-	Name the components of the membranous vestibule Draw the structure of the otolith apparatus	
Nucleus conductive pathways and their anatomical and functional connections with the central nervous system		Name five main anatomical and functional connections of the vestibular analyzer	
Adequate stimuli of the vestibular analyzer and their excitability thresholds	Know for further use in the study of the vestibular analyzer function in the clinic and in professional selection	List and record in the workbook the value of thresholds	
Vestibular reflexes	-//-	Name three groups	
Mechanism of spontaneous nystagmus and its characteristics	-//-	List the five parameters of nystagmus	
8. Laws of nystagmus	-//-	Formulate three laws of Ewald and two "iron" laws of Voyacek	

Vestibular stress tests to study the function of the semicircular canals	Know for further use in the study of the vestibular analyzer function in the clinic and in professional selection	Write down the criteria for assessing the excitability of the semicircular canals in the caloric and rotational tests
Vestibular passport	Know for further use in the study of the vestibular analyzer function in the clinic and in professional selection	Draw a diagram and learn how to perform tests
Methods for investigating the function of the vestibule	Know for further use in the study of the vestibular analyzer function in the clinic and in professional selection	Learn how to perform
Otolithic test and its evaluation	Know for further use in the study of the vestibular analyzer function in the clinic and in professional selection	Describe the methodology. List the degrees of otolith reaction according to Voyacek V. I.

METHODOLOGY

Interview on the given topic - 20 minutes.

Studying the drawings and equipment for the study of statokinetic function. Demonstration by the teacher of the methodology of the study of statokinetic function. Mastering these methods by the students under close supervision of the teacher. Visit to the vestibulometric office.

Final interview. Conclusion. Assignment.

During the interview attention is paid to structure and physiology of ampullary and statokinetic systems, to connections between the nuclei of the statokinetic analyzer with other parts of the central nervous system; to the importance of effective pathways; to spontaneous and experimental signs of state of the statokinetic analyzer; to the possibility of using not only suprathreshold but also threshold stimuli, as well as adequate and inadequate stimuli; to the origin of fast and slow component of nystagmus, types of the latter; to the signs of nystagmus determined by nystagmoscopic and nystagmographic examination, to the signs characteristic of irritation of ampullary and stathocone receptors (sensory, somatic, vegetative).

After the interview the students, with the advice of the teacher, get acquainted with the vestibulometric formula, with the tools and equipment for the study of the statokinetic function, as well as with drawings on the interpretation of the mechanism of the origin of statokinetic reactions.

Then the teacher demonstrates on 2 - 3 students the methodology of different ways to study the statokinetic function with the completion of the vestibulometric formula.

Table 7

Scheme of the vestibular function study

Right Side	Tests	Left Side
	Subjective sensation	
	Romberg pose	
	Gait	
	Spontaneous nystagmus	
	Caloric nystagmus (water temperature, °C)	
	Postrotational nystagmus (10 revolutions per 20 seconds)	

Conclusion

I test – Subjective sensations (complaints). Character of dizziness (sensations of rotation of surrounding objects, flickering "flies" before eyes, etc.), nature and degree of gait disturbance; intensification of dizziness and change of direction of falling when changing head position; presence of nausea and vomiting during dizziness.

II test – Romberg pose. The patient is standing, toes and heels together, arms outstretched at chest level, fingers spread apart, eyes closed (the researcher should be prepared for the patient to fall while performing this test).

If the labyrinth is dysfunctional, the patient will fall in the opposite direction to the spontaneous nystagmus that is present. Labyrinth dysfunction is characterized by a change in the direction of fall when the head changes position. With cerebellar disease a change in head position has no effect on the direction of the fall; the patient only falls in the direction of the lesion

/// test — gait:

- 1) walking in a straight line - the patient walks five steps forward in a straight line with eyes closed and five steps backward;
- 2) Flanked walking - the patient puts the right leg to the right, the left leg to the left, and does this for five steps. Then does a similar flank walk to the left side. If the labyrinth is impaired, the flank gait is performed in both directions. When the cerebellum is affected, the patient cannot perform a flank gait to the sick side.
- 3) *IV test* — Detection of spontaneous nystagmus:
 - 1) the examiner sits opposite the patient;
 - 2) sets his index finger to the right (or left) at a distance of 60-70 cm from the patient's eyes at an angle of 45 ° and asks him to look at the finger. If there is spontaneous nystagmus, its characteristics are determined (plane, direction, strength, amplitude, speed). Strength is rated in 3 degrees. If nystagmus is noted only when looking towards the fast component of nystagmus, but when looking directly it is not, it will be grade I nystagmus. If there is nystagmus when looking towards the fast component and when looking directly, this is grade II nystagmus. If nystagmus is detected when looking towards the fast component, directly and when looking towards the slow component, this is grade III nystagmus. An example of a characteristic of nystagmus: spontaneous, horizontal nystagmus to the right (or left), II degree, small-scale, lively.

V test - caloric test.

- 1) Before the test it is necessary to find out whether the test person has not had a middle ear disease, conduct otoscopy. If there is no perforation of the eardrum, you can proceed to the caloric test: the doctor draws 100 ml of cold water at 18°-20°C into a Janet syringe;

2) The test person sits with his head tilted back at 60° and fixes his gaze on the doctor's index finger positioned on the left (or right) at a distance of 60-70 cm from the test person's eyes; water is injected along the posterior upper wall of the external auditory canal until nystagmus appears. When cold water is infused, the nystagmus is directed to the opposite side of the ear to be irritated.

The caloric test with hot water ($t = 45^{\circ}\text{C}$) is performed similarly. When hot water is injected, the nystagmus is directed toward the side of the ear being irritated. The doctor determines nystagmus by plane, direction, strength, amplitude, speed.

Labyrinth excitability is assessed by the amount of water injected into the ear before nystagmus appears. With normal labyrinth excitability the amount of water equals 50-100 ml.

VI test - rotational test:

1) the test person is seated on a rotating chair (Barani chair) so that the back rests firmly against the back of the chair, the legs are on the stand, the hands are on the armrests, the eyes should be closed, the head 30° down;

2) the rotation should be done evenly - 10 revolutions to the right or to the left in 20 seconds, after which the chair stops abruptly;

3) the person opens his eyes and fixes his gaze on the finger of the doctor, which is held at a distance of 60-70 cm from the test person's eyes at an angle of 45°.

The doctor determines nystagmus by direction, plane, strength, amplitude, speed.

Labyrinth excitability is assessed by the duration of nystagmus. With normal excitability of the labyrinth, post-excitation nystagmus lasts 20-30 s. After 10 minutes, a similar rotation is performed in the other direction.

VII test - pneumatic test:

1) the test person sits in front of the doctor and fixes his gaze on the middle of his forehead;

2) the doctor presses the test person's right (or left) navel with his index finger or compresses air in the external auditory canal with a balloon. Pressor nystagmus is detected in the presence of a fistula in the lateral semicircular canal.

When the air in the external auditory canal is thickened (compression), the nystagmus is directed toward the ear that is irritated, and when the air is rarefied (decompression), the nystagmus is directed in the opposite direction.

The data obtained during the tests are entered into the vestibular passport and evaluated, after which a conclusion about the excitability of the vestibular apparatus (semi-circular canals) is made. Next, the student must learn how to perform the otolith test and evaluate it:

1) the test person sits in Barany's chair, closes his eyes and tilts the head together with the torso by 90°;

2) the chair rotates to the right (or to the left) - 5 revolutions for 10 seconds and the chair stops abruptly;

3) After 5 seconds of rotation, the test person is asked to open his eyes and straighten up.

According to the deviation of the head and torso towards rotation and vegetative reaction, the state of otolith apparatus function (4 degrees of otolith reaction according to V.I. Voyacek) is evaluated.

Table 8

Otolith reaction according to V.I. Voyacek

	Somatic reaction		Vegetative reaction
O	— no reaction	O	no vegetative disorders

1	— <i>slight deviation of the torso</i>	1	<i>subjective sensations (dizziness, nausea)</i>
2	— <i>significant deviation of the torso</i>	2	<i>pale or flushed face, changes in heart and respiratory activity</i>
3	<i>fall (the test person cannot hold on the chair)</i>	3	<i>changes in cardiac and respiratory activity, nausea and vomiting</i>

The result is recorded as a fraction: the numerator is the degree of expression of somatic reflexes, the denominator shows vegetative reflexes.

Taking into consideration that in modern high-speed aviation and navy the load on the vestibular apparatus and especially its otolith department increases sharply, a single examination by means of otolith reaction proves to be insufficient. It is necessary to determine its sensitivity to cumulation of irritations, for which purpose rocking on a four-bar swing is used. The test person sits with his eyes closed, and the swinging is done for 15 minutes. This method is evaluated taking into account the rapidity of occurrence of vegetative symptoms (nausea, vomiting, pallor, cold sweat, etc.).

Table 9

Evaluation of the cumulative method for studying the sensitivity of the otolith apparatus on a four-bar swing

Cumulation degree	Vegetative reflexes
0-15-min. swinging	No vegetative reflexes
1-in 11-15 min. swinging	nausea and vomiting
2-in 6-10 min. swinging	nausea and vomiting
3-in the first 5 min. swinging	vomiting

Further, to master the methods of studying the statokinetic function, the teacher calls three students, one of whom conducts a study of the second student, and the third writes the results into the vestibulometric formula. During the study, the teacher asks any student in the group. After that, 2 students examine the statokinetic function of a patient from the hospital and give an interpretation of the data obtained.

According to the current situation, the study begins with the determination of spontaneous indicators of the state of the statokinetic analyzer. When determining the state of balance at rest (standing) and in motion (gait), the doctor or his assistant must be close to the patient in order to support him in case of a tendency to fall. It is desirable to test both the conventional and the sensitized Romberg test. The direction of the fall or deflection should be compared with the direction of the nystagmus. Balance in gait with open and closed eyes should be checked not only on the sagittal, but also on the frontal plane (flank gait). When determining spontaneous nystagmus, it is necessary to observe it for more than 5 seconds, so that the end-position nystagmus is not mistaken for spontaneous.

It is necessary to determine not only the presence and direction of nystagmus, but also its plane and degree. The teacher introduces students to the nystagmograph and features that are specified by the nystagmography method (amplitude, frequency).

Before proceeding to caloric and rotational tests, students should have a clear understanding

of the mechanism of experimental nystagmus during these tests in order to interpret the results obtained. In teams, students tests each other under the close supervision of a teacher or his assistant, since inept rotation in a chair or pouring water into the ear can lead to serious complications. Students should familiarize themselves not only with suprathreshold, but also with the threshold method of rotational testing (cupulometry).

A caloric test has some advantage, and should be carried out using cold and only in particular cases warm water with a different position of the head. In this case, it is better to use methods of minimal irritation (10 ml of water at 27 ° to pour in 10 seconds) and determine not only the duration of nystagmus, but also the latent period. Massive washing (60 ml of water) can also be applied.

Table 10

LESSON PLAN (300min .)

№ / №	Activity algorithm		Indicative signs		
	Consecutive actions	Means of action	Reason	Control criteria	Possible complications
1	Learning the main anatomical and topographic features of the inner ear (semicircular canals and vestibule), pathways and centers	Repetition using plaster casts, bone preparations, tables, slides	To improve the knowledge for further use in the study of diseases of the ear	Testing, questioning, analysis and synthesis of the information obtained.	

2	Study of the vestibular analyzer function: a) Study of the function of the semicircular canals and compilation of a vestibular passport; b) Study of otolith function	Barany's chair, Jeanne's syringe	Carrying out and evaluating vestibulometric tests. A) Identification of spontaneous disorders by the students on each other, carrying out stress vestibular tests. Recording the obtained data in the vestibular passport. Use home sketches. B) Conducting an otolith test by students on each other and evaluating the results by degrees.	Vestibulometry is a detection of spontaneous symptoms (spontaneous nystagmus, changes in limb muscle tone, gait disturbance), conducting and evaluation of vestibulometric tests (tonic hand deflection reactions - index finger tests, Vodak-Fisher test, Romberg posture stability test, straight and flanking gait, adiadochokinesis. Vestibular tests - rotational, caloric, pressor tests, examination of otolith apparatus function, otolith reaction, four-bar swinging technique, stabilometry).	Vestibulomotor, vestibulosomatic, vestibulovegetative reactions
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With the perforation of the tympanic membrane or in patients with chronic suppurative otitis media it is also necessary to check the pressor test. First, a sparing method is used by jerky pressure on the tragus in such a way as to close the ear canal with the tragus and increase the pressure both in it and through the defect of the tympanic membrane - in the middle ear. With a negative effect, the teacher demonstrates a pneumatic test with a balloon, first condensing the air in the ear canal, and discharging it as needed. Analyzing the data of the vestibulometric passport, a conclusion is made about the excitability of the analyzer (increased, normal, decreased).

To resolve the issue of fitness for flight or naval service the otolithic reaction (OR) is also determined in the examined person, or, as they also call it, the "double experiment with rotation", since this experiment tests the excitability of two receptors (ampullar and statocone) and functional connection between them. Taking into account the received somatic and vegetative reactions a conclusion is given on a four-point system (O, I P, III degrees) on the fitness or unfitness of the examined person for flight or naval service, or training is recommended for him to reduce the excitability of the statokinetic analyzer.

Teaching aids: models, drawings, Jeanne's syringe, trays, hot water, stopwatches, water thermometer, Barani's chair, VCR, TV.

Tests on "Clinical anatomy and physiology of the vestibular analyzer"

1. WE OBSERVE DEGREES OF BODY DEVIATION WHEN TESTING WOYACEK

- 1) two
- 2) three
- 3) four
- 4) five

2. AN ADEQUATE IRRITATION OF THE RECEPTORS OF THE SEMICIRCULAR CANALS IS

- 1) angular acceleration
- 2) rectilinear acceleration
- 3) acceleration due to gravity

3. AN ADEQUATE IRRITATION OF THE OTOLITHIC APPARATUS IS

- 1) rectilinear acceleration, acceleration due to gravity
- 2) angular acceleration, rectilinear acceleration
- 3) gravity acceleration, angular acceleration
- 4) rectilinear acceleration, angular acceleration

4. THE INTERNAL EAR CONSISTS OF

- 1) tympanic cavity, vestibule, semicircular canals
- 2) vestibule, cochlea, internal auditory canal
- 3) vestibule, semicircular canals, cochlea
- 4) tympanic cavity, vestibule, internal auditory canal

5. THE FIRST NEURON OF THE VESTIBULAR APPARATUS IS IN

- 1) tympanic cavity
- 2) snail
- 3) on the eve
- 4) internal auditory canal

6. WHEN CARRYING OUT A ROTATIONAL TEST IN BARANI'S CHAIR OF THE PATIENT'S HEAD IS TILTED TO

- 1) left side
- 2) right side
- 3) 30 degrees forward
- 4) 30 degrees back

7. THE DIRECTION OF NYSTAGMUS IS DETERMINED BY THE DIRECTION OF

- 1) slow component of nystagmus with extreme eye aversion
- 2) fast component of nystagmus in extreme eye aversion
- 3) slow component of nystagmus when looking straight
- 4) fast component of nystagmus when looking directly

8. NYSTAGMUS OF THE I DEGREE IS REGISTERED WHEN THE EYEBALLS ARE REMOVED TO THE SIDE OF

- 1) slow component
- 2) fast component
- 3) looking straight ahead
- 4) not registered

9. WHEN CARRYING OUT THE OTOLITHIC SAMPLE THE PATIENT IS TILTED TO

- 1) right side
- 2) left side
- 3) 45 degrees forward
- 4) 90 degrees forward

10. WHAT DEGREE OF NYSTAGMUS IS DETERMINED WHEN LOOKING TOWARDS THE SLOW COMPONENT

- 1) first

2) second

3) third

11. DIRECTION OF NYSTAGMUS WHEN CARRYING OUT A CALORIC TEST WITH COLD WATER IS

1) up

2) in the opposite direction

3) in the same direction

4) rotary

12. METHOD FOR STUDYING THE FUNCTION OF THE SEMICIRCULAR CANALS

1) otolith test

2) rotational test

3) test on the Khilov four-bar swing

4) electrocochleometry

13. STUDYING THE FUNCTION OF THE OTOLITHIC DEVICE IS CARRIED OUT USING

1) double-bar swing

2) four-bar swing

3) rotational sample

4) caloric test

14. EWALD'S SECOND LAW SAYS

1) the direction of movement of the endolymph corresponds to the direction of slow component of nystagmus

2) the direction of movement of the endolymph corresponds to the direction of the fast component of nystagmus

3) rotation of the body to the right excites the left labyrinth

4) rotation of the body to the left excites the right labyrinth

15. NUMBER OF DEGREES OF NYSTAGMUS

1) I

2) II

3) III

4) IV

Keys to the topic:

«Clinical anatomy and physiology of the vestibular analyzer».

N ^o	ANSWE	N ^o	ANSW
1	2	10	3
2	1	11	2
3	1	12	2
4	3	13	2
5	4	14	1
6	3	15	3
7	2		
8	2		
9	4		

Homework: clinical anatomy, physiology and research methods of the nose and paranasal sinuses.

LESSON №4

Topic: CLINICAL ANATOMY AND PHYSIOLOGY OF THE NOSE, PARANASAL SINUSES AND PHARYNX, RESEARCH METHODS.

Relevance. In clinical practice doctors of various specialties often have to deal with the pathology of the nose, paranasal sinuses, pharynx, in particular its tonsillar apparatus, and the complications caused by them. The external nose is the most important part of the cosmetic ensemble of the face, and therefore changes in its shape often cause the patient a lot of moral suffering. Knowledge of the structural and functional features of the nose and paranasal sinuses, pharynx and its tonsillar apparatus will help the doctor to correctly navigate the clinical picture and treatment tactics in case of damage to these organs. Tonsils have been known for a long time, the operation of their removal was described at the beginning of our era. The location of the tonsils in the pharynx provides contact with the respiratory and esophageal tract, promotes constant contact with a huge variety of antigens.

Objectives. After studying the topic the student must:

have an idea about the anatomical and topographic relationships of the nose, paranasal sinuses and pharynx with neighboring organs and the immune system, diaphanoscopy, x-ray examination of the nose and paranasal sinuses;

know the clinical anatomy and physiology of the nose, paranasal sinuses and pharynx, research methods;

be able to conduct an external examination and palpation of the nose, the walls of the paranasal sinuses and regional lymph nodes, anterior and posterior rhinoscopy, mesopharyngoscopy, assess respiratory and olfactory functions, describe radiographs, assess the condition of the palatine, lingual, pharyngeal tonsils, and the posterior pharyngeal wall.

Location of the lesson. Thematic training room at the Department of Otorhinolaryngology or in the ENT hospital, a study room for endoscopic equipment.

Equipment. Forehead reflector, nasal mirrors for examining adults and children, spatulas, nasopharyngeal mirrors, a set of endoscopic instruments with UMZ cold lighting, a set of V. I. Voyachek for the study of smell, an olfactometer, a rhinopneumometer, a diaphanoscope, a set of radiographs. Models, bone preparations, tables, slide sets on the anatomy of the nose and pharynx, pharyngoscopy and indirect laryngoscopy (hypopharyngoscopy). Instrumentation for direct pharyngoscopy, phantom for indirect laryngoscopy. Tomograms and radiographs of the laryngeal pharynx (including contrast ones). Slide projector. Screen.

Table 11

Tasks for self-preparation for a practical lesson

Questions	Objective	Task for self-control	Information sources
Bone and cartilage of the external nose	To revise for later use in nose pathology	To name the bones and cartilages of the external nose	1) Palchun V. T., Magamedov M. M., Luchikhin L. A. Otorhinolaryngology: textbook M.: GEOTAR-Media, 2014 2) Palchun V. T., Kryukov A. I., Magomedov M. M. Otorhinolaryngology: textbook M.: Geotar-Media, 2020 3) Palchun V. T.
The walls of the nasal cavity, their structure	To revise for later study of the nose and sinuses pathology	To draw a scheme of the lateral nose wall, to indicate the joining point of paranasal sinuses and nose cavity	
Features of the nasal mucosa	To revise for later study of the nose and sinuses pathology	To indicate the border of the respiratory and olfactory regions on the diagram of the lateral wall of the nasal cavity,	
Clinical anatomy of the paranasal sinuses	To revise for later study of the nose and	Name the paranasal sinuses, show their	

	sinuses pathology	projection on the face	Otorhinolaryngology: national guide M. : GEOTAR-Media, 2008 4) Luchikhin L.A. Otorhinolaryngology. Textbook. – Approved by the Ministry of Education of the Russian Federation. -GEOTAR-Media. - 2016 - 584 p. 5) Ovchinnikov Yu.M., Gamov V.P. Diseases of the nose, pharynx, larynx and ear: textbook M.: Medicine, 2003 Otorhinolaryngology: textbook ed. B. Soldatov St. Petersburg, 2001 6) Palchun V. T. Otorhinolaryngology: national guide M. : GEOTAR-Media, 2008
Blood supply of the nasal cavity, features of the outflow of venous blood and lymph	To revise for later study of the nose and sinuses pathology	Name the location of the nose bleeding zone	
Physiology of the nose	To revise for later study of the nose and sinuses pathology	Name the main functions of the nose	
Nose examination methods	To know for later examination in class	Name the instruments for anterior rhinoscopy	
Paranasal sinuses examination methods	To know for diagnosis	Name the main methods of examination of paranasal sinuses	
Clinical anatomy of the pharynx	To know for diagnosis	Pharynx, its sections and layers, paratonsillar and pharyngeal tissue, pharyngeal space.	
Lymphadenoid pharyngeal ring	To know for diagnosis	Structure, innervation, blood supply	
Pharynx examination methods	To know for diagnosis	Name the main methods of examination	

SUMMARY OF THE LESSON.

Interview on given topics - 20 minutes

Learning new tools, devices, drawings, preparations and dummies. Demonstration of rhinoscopy and diaphanoscopy. Students mastering methods. Oral description of the rhinoscopy picture.

Subsequently, each new examination method must first be shown by the teacher, and then carefully worked out by students on each other with the help of a teacher or his assistant.

Table 12

LESSON PLAN (300 min.)

№ / №	Activity algorithm		Indicative signs		
	Consecutive actions	Means of action	Reason	Control criteria	Time (min.)
1	Mastering the main anatomical and topographic features of the nose, paranasal sinuses	Revision with the help of models, bone preparations, tables, slides.	To deepen knowledge for use in the study of diseases of the nose and paranasal sinuses.	Anterior, middle, posterior rhinoscopy; endoscopic examination; radiography of the paranasal sinuses, MRI, CT.	15 – 20
2	Anterior and posterior rhinoscopy	Methods of nose and paranasal sinuses	Development of skills with the analysis of the	Anterior, middle and posterior rhinoscopy	30

		examination	rhinoscopy picture		
3	Examination of the main functions of the nose	Mastering the methods of studying respiratory and olfactory functions	Development of skills and assessment of the functional state of the nasal cavity	Respiratory function - normal, difficult or absent. Olfactory function - normal (normoosmia), decreased (hyposmia), absent (anosmia), perverted (cocosmia)	20
4	Analysis of X-rays, MRI and CT scans of the nose and paranasal sinuses.	X-rays, MRI and CT of the nose and paranasal sinuses.	Development of skills in reading X-rays, MRI and CT of the nose and paranasal sinuses.	Oral description of X-rays, MRI and CT of the nose and paranasal sinuses.	20
1	Mastering the main anatomical and topographic features of the pharynx	Revision with the help of models, bone preparations, tables, slides.	To deepen knowledge for use in the study of diseases the pharynx	Endoscopy, X-ray of the paranasal sinuses, MRI, CT.	15 – 20
2	Oroscopy, mesopharyngoscopy, epipharyngoscopy, digital examination of the nasopharynx	Examination methods	Development of skills with the analysis of the pharyngoscope picture	External examination, palpation, endoscopy of the pharynx	30
3	Study of the main functions of the pharynx	Mastering methods for studying respiratory, protective, speech functions, participation in the act of swallowing	Development of skills and assessment of the functional state of the pharynx	Respiratory function - normal, difficult or absent. Swallowing, speech, protective function - normal, reduced, absent	20
4	Analysis of X-rays, MRI and CT of the pharynx	X-rays, MRI and CT	Developing skills in reading X-rays, MRI and CT scans	Oral description of X-rays, MRI and CT	20

Indicate the localization of the "bleeding zone of the nasal septum"; the structure of the mucous membrane of the turbinates; the structure of the lateral wall of the nasal cavity; the thickness of the outer wall of the lower nasal passage; olfactory and respiratory parts of the nasal cavity; its communication with the nasopharynx through the choanae; the neighborhood of the sinuses with the teeth, with the eye socket and the cranial cavity; location of trigeminal points on the face. After

the interview, with the help of a teacher, students get acquainted with the structure of the nasal and nasopharyngeal mirrors, as well as with other new instruments and devices. On phantoms students get acquainted with the technique of using these tools. Demonstration on 2 - 3 students of examination methods of the nose and paranasal sinuses with a schematic sketch of endoscopic pictures. The respiratory function of the nose is examined by alternately covering one of the nostrils and bringing a cotton fluff or thread to the opposite nostril. According to the noise of the exhaled jet or the movement of a cotton fluff, the degree of patency of each half of the nose for air is judged. You can examine the respiratory function by exhaling air from both nostrils on a mirror or a nickel-plated metal Glatzel graduated plate. The size of the fogging area more accurately indicates the degree of air permeability through each half of the nose. The subjective determination of the patency of each half of the nose should also be covered. The respiratory function of the nose can be most accurately determined using a rhinopneumometer.

The olfactory function is examined using a set for olfactometry, consisting of vials with odorous substances of 6 groups and evaluated by 5 degrees.

Odorimetric passport of V. I. Voyachek

Right side	Substance	Left side
	№ 1 – 0,5% acetic acid solution	
	№ 2 – ethanol	
	№ 3 – Valerian root tincture	
	№ 4 - 3% aqueous ammonia solution	
	№ 5 - water	
	№ 6 – gasoline	

Gasoline, as the most volatile and most "penetrating" substance from this set, was designated No. 6 by V.I. Voyachek. In the absence of its perception the sense of smell should be considered completely turned off.

Proper qualitative testing of the sense of smell includes a certain standardization of the experience, the exclusion of the possibility of odorant vapors entering the non-examined half of the nose, the assessment of the odorous substance on inhalation with a breath hold in order to exclude retrograde entry of odorous substances into the second half of the nose during exhalation. A piece of filter paper 0.5–1 cm in size, fixed in a crevice of a torch and moistened in a solution of an odorous substance, is brought to one nostril, closing the other, and the patient is asked to take a light breath through his nose, hold his breath for 3–4 seconds and determine what smell he feels. The results of the study are evaluated according to a 5-degree system, depending on what odors the examined person perceives:

I degree — the examined person identifies the weakest odor — № 1;

II degree - smells of an odorous substance are perceived under No. 2, 3, 4, 6

III degree - smells of an odorous substance are perceived under No. 3, 4, 6;

IV degree - smells of an odorous substance are perceived under No. 4, 6;

V degree - the smell of an odorous substance is perceived under No. 6.

If none of the odors is perceived then anosmia is diagnosed.

With hyposmia its mechanical cause is excluded. To do this carefully examine the upper parts of the nasal cavity and, if necessary, treat them, once lubricating the mucous membrane with a solution of adrenaline chloride 1: 1000 (but not an anesthetic!) and after 5 minutes a second examination is carried out. The appearance or improvement of the sense of smell after this procedure indicates the presence of "mechanical" hyposmia. Special olfactometers can be used in the

functional diagnostics room.

To study the resonator function of the nose the examined person should be asked to count aloud, at some point close both halves of the nose and at this time find out if he has an open or closed type of nasality. Using the advice of a teacher students get acquainted with the device and operation of a diaphanoscope, then master the technique of diaphanoscopy, with the help of which they roughly determine the state of the maxillary and frontal sinuses.

According to the X-rays demonstrated by the teacher on the negatoscope, it is necessary to renew the information on the X-ray anatomy of the nose and sinuses to the students.

Tests on the topic "Clinical anatomy and physiology of the nose and paranasal sinuses."

1. THE LOWER WALL OF THE NOSE CAVITY IS FORMED BY

- 1) the pterygoid process of the sphenoid bone and the palatine process of the upper jaws
- 2) the palatine process of the upper jaw and the horizontal plate of the palatine bones
- 3) horizontal plate of the palatine bone and pterygoid process of the sphenoid bone
- 4) vomer and pterygoid process of the sphenoid bone

2. THE SLIDE OF THE NOSE IS FORMED BY

- 1) anterior wall of the sphenoid sinus
- 2) perforated plate of the ethmoid bone
- 3) nasal bone
- 4) frontal bone

3. THE UPPER WALL OF THE NOSE CAVITY IS FORMED BY

- 1) frontal process of the upper jaw
- 2) anterior wall of the sphenoid sinus
- 3) perpendicular plate of the ethmoid bone
- 4) perforated plate of the ethmoid bone

4. THE BONE DEPARTMENT OF THE EXTERNAL NOSE IS FORMED BY

- 1) perpendicular plate of the ethmoid bone
- 2) nasal scallop of the upper jaw
- 3) coulter
- 4) frontal processes of the upper jaw

5. THE MEDIAL WALL OF THE NOSE CAVITY IS FORMED BY

- 1) horizontal plate of the palatine bone
- 2) frontal processes of the upper jaw
- 3) nasal processes of the frontal bone
- 4) perpendicular plate of the ethmoid bone

6. A NASAL SEPTUM IS FORMED BY

- 1) triangular cartilage, ethmoid labyrinth, vomer
- 2) palatine bone, vomer, quadrangular cartilage
- 3) perpendicular plate of the ethmoid bone, vomer, quadrangular cartilage, nasal crest of the maxilla
- 4) nasal bone, quadrangular cartilage, vomer

7. THE LATERAL WALL OF THE NOSE CAVITY IS FORMED BY

- 1) quadrangular cartilage
- 2) coulter
- 3) ethmoid bone
- 4) sphenoid bone

8. THE NASOLACRIMAL CANAL OPENS INTO THE NASAL PASSAGE

- 1) upper
- 2) average
- 3) lower
- 4) general

9. THE MAXILLARY SINUS OPEN INTO THE _____ NOSE

- 1) upper
- 2) average
- 3) lower
- 4) general

10. FRONTAL SINUS OPENS INTO THE _____ NASAL PASSAGE

- 1) upper
- 2) average
- 3) lower
- 4) general

11. ETHMOID LABYRINTH BORDERS ON THE _____ CRANIAL FOSSA

- 1) front
- 2) middle
- 3) rear

12. THE ANTERIOR CELLS OF THE NETWORK LABYRINTH OPEN INTO THE _____ NOSE

- 1) upper
- 2) average
- 3) lower
- 4) general

13. MIDDLE CELLS OF THE NETWORK LABYRINTH OPEN INTO THE _____ NOSE

- 1) upper
- 2) average
- 3) lower
- 4) general

14. POSTERIOR CELLS OF THE NETWORK LABYRINTH OPEN INTO THE _____ NOSE

- 1) top
- 2) medium
- 3) bottom
- 4) general

15. THE SPHENOID SINUS OPENS INTO THE _____ NASAL PASSAGE

- 1) top
- 2) medium
- 3) bottom
- 4) general

16. SENSITIVE INNERVATION OF THE NOSE CAVITY IS CARRIED OUT BY THE _____ NERVE

- 1) vidium
- 2) trigeminal
- 3) wandering
- 4) facial

17. THE CAVERNOUS SINUS IS

- 1) in the anterior cranial fossa
- 2) in the middle cranial fossa
- 3) in the posterior cranial fossa
- 4) under the base of the skull

18. THE MUSCLES OF THE EXTERNAL NOSE ARE INNERVATED BY A NERVE

- 1) the first branch of the trigeminal
- 2) the second branch of the trigeminal
- 3) the third branch of the trigeminal
- 4) facial

19. THE SKIN OF THE EXTERNAL NOSE IS INNERVATED BY NERVES

- 1) the first and second branches of the trigeminal
- 2) the facial nerve and the first branch of the trigeminal
- 3) the second and third branches of the trigeminal
- 4) facial and second branch of the trigeminal

20. BLOOD SUPPLY OF THE NOSE CAVITY IS PROVIDED BY THE BRANCHES OF THE CAROTID ARTERY

- 1) internal
- 2) outdoor
- 3) indoor and outdoor

21. The thickest wall of the frontal sinus

- 1) bottom
- 2) back
- 3) front
- 4) medial

22. INTERNAL WALL OF THE MAXILLARY SINUS IS THINEST AT THE LEVEL OF THE NOSE

- 1) bottom
- 2) medium
- 3) top

23. Olfactory zone in the nasal cavity is located in the area of the nasal passage.

- 1) bottom
- 2) medium
- 3) top
- 4) Lower General

24. THE VOMERONASAL ORGAN IS IN THE AREA OF

- 1) middle nasal passage
- 2) anteroinferior nasal septum
- 3) olfactory fissure
- 4) posterior end of the inferior turbinate

25. MOST INFORMATIVE IN THE DIAGNOSIS OF MAXILLARY SINUSES PATHOLOGY

- 1) radiography
- 2) contrast radiography
- 3) MRI
- 4) RKT

Keys to the topic:

«Clinical anatomy and physiology of the nose and paranasal sinuses».

№	ANSWER	№	ANSWER	№	ANSWER	№	ANSWER
1	2	8	3	15	1	22	2
2	3	9	2	16	2	23	3
3	4	10	2	17	2	24	2
4	4	11	1	18	4	25	4

5	4	12	2	19	1		
6	3	13	2	20	3		
7	3	14	1	21	3		

1.2. Tests on the topic of clinical anatomy and physiology of the pharynx.

1. THE OROPHARYNX HAS ____ WALLS

- 1) 2
- 2) 3
- 3) 4
- 4) 5

2. THE MIDDLE PART OF THE THROAT (OROPHARYNGEA) CORRESPONDS TO THE ____ CERVICAL VERTEBLE

- 1) 2
- 2) 3
- 3) 4
- 4) 5

3. LARGE ARTERY LOCATED NEAR THE LOWER POLE OF THE PALATINE THONGAL IS

- 1) external carotid
- 2) internal carotid
- 3) common carotid
- 4) thyroid

4. THE BORDER OF THE LATERAL PERIOPHARYNGEAL CELLULAR SPACE IS

- 1) upper constrictor of the pharynx
- 2) middle constrictor of the pharynx
- 3) stylo-pharyngeal muscle
- 4) medial pterygoid muscle

5. THE PHARYNGEAL MUSCLE THAT NARROWS THE LUMEN OF THE PHARYNGEAL HOLE OF THE AUDITORY TUBE IS

- 1) lifting the curtain of the palate
- 2) straining the palatine curtain
- 3) palatoglossal
- 4) palatopharyngeal

16. TASTE PERVERSION ON THE BACK 1/3 OF THE TONGUE IS DUE TO ____NERVE DAMAGE

- 1) facial
- 2) trigeminal
- 3) glossopharyngeal
- 4) wandering

7. TASTE PERVERSION IN THE FRONT 2/3 OF THE TONGUE IS DUE TO ____NERVE DAMAGE

- 1) facial
- 2) trigeminal
- 3) glossopharyngeal
- 4) wandering

8. THE PALATINE TONSILS ARE SUPPLIED WITH BLOOD BY

- 1) external and internal carotid artery
- 2) external carotid artery
- 3) internal carotid artery
- 4) facial artery

9. THE PHARYNX CORRESPONDS TO THE CERVICAL VERTEBRAE

- 1) I - III
- 2) I - IV
- 3) I-V
- 4) I-V

10. THE BORDER BETWEEN THE NASOPHARYNX AND OROPHARYNX IS

- 1) a horizontal plane drawn through the surface of the tongue
- 2) the upper pole of the palatine tonsils
- 3) a horizontal plane drawn through the hard palate
- 4) the edge of the soft palate

11. NUMBER OF TONSILS LOCATED IN THE NASOPHARYNX IS

- 1) one
- 2) two
- 3) three
- 4) four

12. THE BORDER BETWEEN THE OROPHARYNX AND THE LARYNOPHARYNX IS ON THE LEVEL OF

- 1) root of the tongue and epiglottis
- 2) the lower edge of the soft palate
- 3) the lower pole of the palatine tonsils
- 4) bottom of the mouth

13. THE PHARYNX IS INNERVATED BY THE _____ NERVE

- 1) returnable
- 2) glossopharyngeal and sublingual
- 3) recurrent and glossopharyngeal
- 4) sublingual and recurrent

14. SENSITIVE INNERVATION OF THE PHARYNGEAL IS CARRIED OUT BY _____ NERVES

- 1) the second branch of the trigeminal nerve, vagus and hypoglossal
- 2) the second branch of the trigeminal nerve, vagus and glossopharyngeal
- 3) the first and second branches of the trigeminal nerve, vagus
- 4) the first and second branches of the trigeminal nerve and glossopharyngeal

15. NUMBER OF TONSILS LOCATED IN THE THROAT IS

- 1) six
- 2) five
- 3) four
- 4) three

16. THE MOUTH OF THE AUDITORY TUBE OPENS ON THE WALL OF THE NASOPHARYNX

- 1) top
- 2) back
- 3) side
- 4) front

17. SENSITIVE INNERVATION OF THE NASO-PHARYNX IS CARRIED OUT MAINLY DUE TO THE NERVE

- 1) trigeminal
- 2) wandering
- 3) glossopharyngeal
- 4) facial

18. SENSITIVE INNERVATION OF THE OROPHARYNX IS CARRIED OUT MAINLY DUE TO THE NERVE

- 1) trigeminal

- 2) wandering
- 3) glossopharyngeal
- 4) facial

19. SENSITIVE INNERVATION OF THE HYDROPHARYNGEA IS MOSTLY CARRIED OUT BY THE NERVE

- 1) trigeminal
- 2) wandering
- 3) glossopharyngeal
- 4) facial

Keys to the topic:

«Clinical anatomy and physiology of the pharynx».

№	ANSWER	№	ANSWER	№	ANSWER	№	ANSWER
1	2	6	3	11	3	16	3
2	2	7	1	12	1	17	1
3	2	8	2	13	3	18	3
4	4	9	4	14	2	19	2
5	1	10	3	15	1		

Homework: anatomy, physiology and examination methods of larynx, trachea and esophagus.

LESSON 5

Topic: CLINICAL ANATOMY, PHYSIOLOGY AND EXAMINATION METHODS OF THE LARYNX, TRACHEA, BRONCHI AND ESOPHAGUS.

Relevance. The larynx, being part of the airways of the body, is involved in the implementation of the most important functions - respiratory, voice and speech. Violations of normal anatomical and functional relationships in the larynx lead to the development of various pathological processes, manifested primarily by the development of laryngeal stenosis and voice dysfunction. Knowledge of the anatomical and topographic features of the larynx, lower respiratory tract and esophagus is necessary in the study of diseases of these organs and orientation in therapeutic tactics.

Target. After studying the topic, the student must:

have an idea about the anatomical and topographic relationships of the larynx, trachea, bronchi and esophagus with the organs of the neck and mediastinum, modern methods of endoscopic examination;

know the clinical anatomy and physiology of the larynx, trachea, bronchi, esophagus;

be able to conduct an external examination, palpation of the neck and indirect laryngoscopy.

Location of the lesson. Thematic training room at the department of otorhinolaryngology or in the ENT hospital, a study room for endoscopic equipment.

Equipment. Forehead reflector, a set of mirrors for indirect laryngoscopy, tools for direct examination methods. Models, anatomical preparations, tables, sets of slides, X-rays and tomograms. Contrast X-rays of the esophagus. Tracheobronchoscopes of various designs. Esophagoscope Mezrin, Tikhomirov Spatula. Strobe. Video on the methodology of the study of ENT - organs.

Table 13

SELF-STUDY ASSIGNMENT FOR THE PRACTICAL TRAINING

Questions	Objectives	Self-study tasks	Information sources
Anatomical topographic and structural features of the larynx:	To revise for later study of the larynx pathology		1) Palchun V.T., Magamedov M.M., Luchikhin L.A. Otorhinolaryngology: textbook M.: Moscow: GEOTAR-Media, 2014. 2) Palchun V. T., Kryukov A. I, Magomedov M. M. Otorhinolaryngology: textbook M.: Geotar-Media, 2020 3) Palchun V. T. [et al] Examination of otorhinolaryngological patient (Examination of ENT patient). M. Litterra, 2014.

a) cartilage and ligaments		Name and write in a workbook Name the external and internal muscles	1) Luchikhin L.A. Examination of otorhinolaryngological patient. – GEOTAR-Media. 2014 . - 256 p.
b) mucosal features		Name	1) Palchun V.T. Otorhinolaryngology: national guidelines –M.: GEOTAR – Media, 2008.- 919 p.
c) blood supply and innervation		Name the main vessels and nerves, features of the innervation of the larynx, its reflexogenic zones	1) Luchikhin L.A Otorhinolaryngology . Textbook. Approved by the Ministry of Education of the RF. GEOTAR-Media. - 2016 . - 584 p.
d) larynx levels		List and diagram in a workbook	1) Nosulya E.V.: Propaedeutics in otorhinolaryngology, - Medical Information Agency. -2009 - P.164-170
Larynx physiology	To know to use to assess the functional state of the larynx	Name the functions of the larynx. List and write down in the workbook the main types of singing children's, male and female voices.	1) Ananyeva, S.V.: Diseases of the ear, throat, nose. - Rostov n / D: Phoenix. - 2011 - 106-139 p. 2) Burbom Hans, Kashke Oliver, Navka Tadeus,: Diseases of the ear, throat and nose, - MEDpress- Inform. 2016 -776 p.
Larynx examination methods	Know to use in the examination and treatment of patients	Name, describe the laryngoscopy picture during breathing and phonation) Kruglikov G.G.: Pathology of the respiratory system. Atlas, - LitTerra.2013 -p.15-23
Anatomical and topographic features of the lower respiratory tract	To revise to use in the study of pathology	Show trachea and main bronchi	
Anatomical and topographic features of the esophagus	To revise to use in the study of pathology	Name the anatomical and physiological narrowing of the esophagus	

Methods of examination of the lower respiratory tract and esophagus	Have an idea	Name	
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Table 14

LESSON PLAN (240 min.)

№ / №	Activity algorithm		Indicative signs		
	Consecutive actions	Means of action	Reason	Control criteria	Time (min.)
1	Mastering the main anatomical and topographic features of the larynx, trachea, bronchi and esophagus.	Revision on models, anatomical preparations, tables, slides.	To deepen the knowledge for later use in the study of diseases of the larynx, lower respiratory tract and esophagus	Description of the endoscopic and laryngoscope picture	120
2	Indirect laryngoscopy	Mastering the study of the methodology for examining the larynx	Developing a skill with the analysis of the laryngoscope picture	Description of the laryngoscope picture	120

ORGANIZATION AND CONTENT OF THE LESSON.

During the interview it is noted that the larynx is divided into 3 sections. Attention should be paid to the function of various muscle groups, the innervation of the larynx, the features of the lymphatic network of the larynx and its regional lymph nodes, the structure of the trachea, in particular the upper section, where incisions are made during tracheostomy, narrowing of the esophagus and their role in fixing foreign bodies in children and adults.

After the interview, students with the help of a teacher, get acquainted with the structure of esophago-, tracheo-, bronchoscopes of various modifications, with the physical justification of stroboscopy. On the phantom and during a video with the technique of using these tools, studying anatomy from drawings, preparations, models, slides and video materials, students imagine the picture visible with indirect laryngoscopy, tracheobronchoscopy, esophagoscopy.

Tests on «Clinical anatomy and physiology of the larynx».

1. TRACHEA BORDERS

- 1) 4-5 cervical vertebra and 6 thoracic vertebra
- 2) 6-7 cervical vertebra and 4-5 thoracic vertebra
- 3) 4-5 cervical vertebra and 5-6 thoracic vertebra
- 4) the lower edge of the thyroid cartilage and the 5th thoracic vertebra

2. INTERNAL MUSCLES OF THE LARYNX ARE DIVIDED INTO GROUPS

- 1) narrowing the glottis, expanding the glottis, stretching the vocal folds
- 2) stretching vocal folds, narrowing the glottis
- 3) expanding and narrowing the glottis
- 4) stretching, expanding the vocal folds, raising the larynx

3. PAIRED CARTILAGES OF THE LARYNX ARE

- 1) thyroid
- 2) epiglottis
- 3) cricoid
- 4) arytenoid

4. LARYNX WHEN SWALLOWING

- 1) is motionless
- 2) moves backward
- 3) rises
- 4) goes down

5. THE LARYNX IN AN ADULT IS AT THE LEVEL OF THE CERVICAL VERTEBRAE

- 1) III-V
- 2) IV-VI
- 3) GU-UN
- 4) V-VII

6. IN CHILDREN THE LARYNX IS AT THE LEVEL OF THE CERVICAL VERTEBRAE

- 1) III-IV
- 2) III-VI
- 3) IV-VI
- 4) VI-VII

7. THE ESOPHAGUS HAS _____ ANATOMICAL NARROWINGS

- 1) one
- 2) two
- 3) three
- 4) four

8. VOCAL CORDS ARE PROJECTED TO THE THYROID CARTILAGE

- 1) on the border of the upper and middle thirds
- 2) on the border of the lower and middle thirds
- 3) in the middle of the thyroid cartilage
- 4) at the base of the thyroid cartilage

9. DURING THE MOVEMENTS OF THE ANTIOCARTILAGES IN THE CRICATERAL JOINTS

- 1) the tension of the vocal cords changes
- 2) the width of the glottis changes
- 3) the epiglottis rises
- 4) the epiglottis descends

10. THE CONICAL LINK IS BETWEEN

- 1) thyroid cartilage and hyoid bone
- 2) cricoid cartilage and trachea
- 3) thyroid cartilage and cricoid cartilage
- 4) thyroid cartilage and epiglottis

11. MAIN FUNCTIONS OF THE LARYNX ARE

- 1) respiratory, voice-forming, protective
- 2) voice-forming, reflex
- 3) reflex, protective
- 4) respiratory, voice-forming

12. INTERNAL BRANCHES OF UPPER LARYNGEAL NERVE

- 1) thyroid ligament
- 2) thyroid membrane
- 3) thyroid cartilage
- 4) cricoid cartilage

13. TENSIONING THE VOICE CORDES CHANGES THE _____ MUSCLE

- 1) posterior cricoid
- 2) lateral cricoarytenoid
- 3) shield-arytenoid
- 4) cricoid

14. MUSCLES THAT LOWER THE EPIGLOTTIS ATTACH TO THE CARTILAGE OF THE LARYNX

- 1) cricoid
- 2) thyroid
- 3) arytenoid
- 4) corniculate

15. THE GLOTTIS IS EXPANDED BY THE MUSCLE

- 1) thyroid cricoid
- 2) thyroid-shaped internal
- 3) posterior cricoid
- 4) vocal muscle

16. EXTERNAL MUSCLE OF LARYNX

- 1) thyroarytenoid
- 2) thyroid-hyoid
- 3) thyroid cricoid
- 4) Thyroepiglottic

17. GAP BETWEEN THYROID AND CRICOID CARTILAGE IS CLOSED BY

- 1) thyroid membrane
- 2) thyroid-epiglottic ligament
- 3) conical ligament

18. THE BEGINNING OF THE ESOPHAGUS CORRESPONDS TO THE PROJECTION OF

- 1) hyoid bone
- 2) the upper edge of the thyroid cartilage
- 3) the lower edge of the thyroid cartilage
- 4) the lower edge of the cricoid cartilage

19. BIFURCATION OF THE TRACHEA IS AT THE LEVEL OF THE THORACIC VERTEBRAE

- 1) III-IV
- 2) IV-V
- 3) V-VI
- 4) VI-VII

20. IN CHILDREN A LOOSE SUBMUCOUS LAYER IS DEVELOPED IN THE FLOOR OF THE LARYNX

- 1) top
- 2) average
- 3) bottom
- 4) top and middle

21. THE EPIGLOTTIS ATTACHES TO THE CARTILAGE

- 1) cricoid
- 2) thyroid
- 3) corniculate

4) arytenoid

22. INTERNAL MUSCLE OF THE LARYNX IS

- 1) thyroid-hyoid
- 2) stylohyoid
- 3) thyroid-epiglottic
- 4) sternothyroid

23. VALLECULES ARE

- 1) depressions between the vocal folds and vestibular folds
- 2) recesses between the median and lateral lingual-epiglottic folds
- 3) recesses between the entrance to the larynx and the side walls of the pharynx
- 4) space above the vocal folds

24. GRINDINGS BETWEEN THE FOLDS OF THE PRELIMINARY AND THE VOICE CORDS ARE CALLED

- 1) pear-shaped pockets
- 2) laryngeal ventricles
- 3) Rosenmuller's pits
- 4) valleculae

25. WHEN PALPATING THE LARYNX YOU CAN FEEL THROUGH THE SKIN

- 1) conical ligament of the larynx
- 2) arytenoid cartilages
- 3) piriform sinuses
- 4) ventricles of the larynx

26. SUPERIOR LARYNGEAL ARTERY IS A BRANCH OF

- 1) internal carotid artery
- 2) superior thyroid artery
- 3) subclavian artery
- 4) thyroid trunk

27. LOWER LARYNGEAL ARTERY IS A BRANCH OF _____ ARTERY

- 1) internal carotid
- 2) external carotid
- 3) lower thyroid
- 4) subclavian

28. THE MAIN OUTFLOW OF VENOUS BLOOD FROM THE LARYNX IS CARRIED OUT INTO THE _____ VEIN

- 1) external jugular
- 2) anterior jugular
- 3) internal jugular
- 4) retromaxillary

29. LYMPH FROM THE LARYNX FLOWS TO THE LYMPH NODES

- 1) submandibular
- 2) deep cervical
- 3) chin
- 4) pharyngeal

30. INNERVATION OF THE LARYNX IS CARRIED OUT BY A NERVE

- 1) trigeminal
- 2) glossopharyngeal
- 3) wandering
- 4) sublingual

31. ANATOMICAL FORMATION OF THE MIDDLE SECTION OF THE LARYNX

- 1) valleculae
- 2) piriform sinuses
- 3) cricoid cartilage

4) laryngeal ventricles

32. UNPAIRED LARYNGEAL CARTILAGE IS

- 1) cricoid
- 2) arytenoid
- 3) wedge-shaped
- 4) corniculate

33. A CONOID LYGAMENT IS

- 1) thyroid cricoid
- 2) ring-tracheal
- 3) thyroid-hyoid
- 4) epiglottis-thyroid

34. THE MUSCLE EXPANDING THE LUMINA OF THE LARYNX IS

- 1) paired lateral cricoid
- 2) steam room posterior cricoid
- 3) steam oblique arytenoid
- 4) unpaired transverse arytenoid

35. SUPERIOR AND LOWER LARGENTIC NERVES PARTIATE FROM THE _____ NERVE

- 1) glossopharyngeal
- 2) trigeminal
- 3) additional
- 4) wandering

36. IMPAIRED SENSATION OF THE UPPER AND MIDDLE FLOOR LARYNX MUCOSA IS CAUSED BY THE NERVE DAMAGE

- 1) lower laryngeal
- 2) trigeminal
- 3) upper laryngeal
- 4) glossopharyngeal

37. _____ NERVE DAMAGE CAUSES PARALYSIS

- 1) lower laryngeal
- 2) trigeminal
- 3) upper laryngeal
- 4) glossopharyngeal

38. THE UPPER LARYNGEAL NERVE INNERVATES THE _____ MUSCLE

- 1) voice
- 2) posterior cricoid
- 3) ary- epiglottic
- 4) cricoid

39. THE BORDERS OF THE ESOPHAGUS CORRESPOND TO THE VERTEBRAE

- 1) CV-TIX
- 2) C VI - T XI
- 3) TI - T X
- 4) T II-T VIII

40. LARYNX IS CONNECTED TO THE HYOID BONE

- 1) conical
- 2) thyroid-hyoid
- 3) stylohyoid
- 4) lingual epiglottis

Keys to the topic :

«Clinical anatomy and physiology of the larynx»

№	Answer	№	Answer	№	Answer	№	Answer
1	2	11	1	21	2	31	4
2	1	12	2	22	3	32	1
3	4	13	4	23	2	33	1
4	3	14	2	24	2	34	2
5	2	15	3	25	1	35	4
6	1	16	2	26	2	36	3
7	3	17	3	27	3	37	1
8	2	18	4	28	3	38	4
9	2	19	2	29	2	39	2
10	3	20	3	30	3	40	2

Homework: diseases of the external ear (otomycosis, sulfur plug, eczema, furuncle, diffuse inflammation of the skin of the ear canal) and middle ear (acute purulent inflammation of the middle ear, mastoiditis, anthritis, catarrh of the middle ear).

LESSON 6

Topic: DISEASES OF THE EXTERNAL EAR (OTOMYCOSIS, SULFUR PLUG, ECZEMA, FUUNCLES, DIFFERENT INFLAMMATION OF THE SKIN OF THE EAR CANAL). DISEASES OF THE MIDDLE EAR (ACUTE PURULENT INFLAMMATION OF THE MIDDLE EAR, MASTOIDITIS, ANTRITHIS, CATARRH OF THE MIDDLE EAR).

Relevance. Acute inflammatory diseases of the ear occur in people of different ages, are very common and can cause hearing loss and a number of severe complications. A doctor of any specialty in his daily work encounters ear pathology, and therefore it is necessary to know the symptoms of otitis externa and otitis media, the tactics and principles of treating patients with this pathology.

Objectives. After studying the topic the student must:

have an idea about the causes of diseases of the external and middle ear, the ways of infection, methods of surgical treatment;

know the main clinical symptoms of diseases of the external and middle ear, their complications, the course of acute suppurative otitis media in infectious diseases and in childhood, the principles of conservative treatment, indications for paracentesis and anthrotomy;

be able to perform otoscopy, evaluate X-ray data in the Schüller style, conduct a differential diagnosis of diseases of the external and middle ear, timely identify complications (primarily mastoiditis), choose rational treatment tactics, and perform some diagnostic and therapeutic manipulations.

Location of the lesson. Thematic training room at the Department of Otorhinolaryngology, ENT clinic or ENT hospital.

Equipment. Frontal reflector, viewing instruments and a set of tuning forks, Janet's syringe, drawings of the external and middle ear, tympanic membrane in normal and otitis media. Table of ototoxic preparations, models or bone preparations with anthrotomy performed. Woyachek's attic probe: attic cannula, magnifying glass at 9x; Politzer bottle with olive; ear manometers; stopwatch; ear tweezers, paracentesis needle; polyp ear loop; ear granulotoma; powder blower, set of instruments for anthrotomy. Bone preparations, tables, radiographs and slides. Radiographs and tomograms of normal temporal bones in and with otitis media, solutions of furacilin, lidocaine (on request). Patients

Table 15
SELF-STUDY ASSIGNMENT FOR THE PRACTICAL TRAINING

Questions	Objectives	Self-control tasks	Sources of information
1. Otitis externa: 1) causes and predisposing factors:	Know how to use in diagnosis, be able to make the correct diagnosis and prescribe adequate therapy	Name two clinical forms of inflammation of the external auditory canal and list additional methods for examining the patient	1) Komarov M. V. [et al.]. Atlas. Otoscopy. Ear pathology in color: a practical guide to otorhinolaryngology St. Petersburg : Poliforum, 2017 2) Otorhinolaryngology national guide / Ed. by V. T. Palchun. - Moscow ed. Gr. "GEOTAR-Media". - 2013 - 954 p.
2) clinical manifestations		Name symptoms	1) Lopatin A.S., Aleksandrova I.A., Varvyanskaya A.V. Rational pharmacotherapy of ear, nose and throat diseases. Guidelines for practicing physicians.-LitTerra.-2013 - P. 210-228
3) treatment		List the physical methods of influence. Write out a prescription ointment for the treatment of ear furuncle	
2.Otomycosis	Know how to use in diagnosis, be able to make the correct diagnosis and prescribe adequate therapy	Name the main symptoms and the most common location	1) Palchun V.T. Diseases of the ear, throat and nose. A textbook for students of institutions of secondary vocational education studying 060101.51 "Medicine" , the discipline "Diseases of the ear, throat and nose". - GEOTAR-Media. - 2016 - 315 p.

3. Sulfur plug	Know how to use in diagnosis, be able to make the correct diagnosis and prescribe adequate therapy	Name the method of removal and write a prescription for ear drops to soften the plug	-//-
4. Acute purulent otitis media: 1) ways of spreading infection	Id	Name	1) Palchun V.T., Magamedov M.M., Luchikhin L.A. Otorhinolaryngology textbook. 2014 - 468-645 p.
2) stages of diseases		Describe the otoscopic picture of II stage	2) Luchikhin L.A. Otorhinolaryngology. Textbook. – Approved by the Ministry of Education of the Russian Federation, - GEOTAR - Media. - 2016 - 584 p.
3) clinical symptoms I, II, III stages		Name. Determine the nature of the hearing loss and enter the relevant data into the auditory passport	
4) peculiarities in children		Name the anatomical features of the structure of the temporal bone, which determine the frequency of occurrence and clinical manifestations in infants. Indicate what children behavior would lead the doctor to suspect otitis media	1) Lopatin A.S., Aleksandrova I.A., Varvyanskaya A.V. Rational pharmacotherapy of ear, nose and throat diseases. Guidelines for practicing physicians.-LitTerra.-2013 - P. 210-228 2) Luchikhin L.A. Otorhinolaryngology. Textbook. Approved by the Ministry of Education of the Russian Federation, - GEOTAR - Media. - 2016 - 584 p. 3) Palchun V.T. Diseases of the ear, throat and nose. A textbook for students of institutions of secondary vocational education studying 060101.51 "Medicine" , the discipline "Diseases of the ear, throat and nose". - GEOTAR-Media. - 2016 - 315 p.
5) features of the course in infectious diseases		Name the diseases and draw an otoscopic picture in acute inflammation of the middle ear of influenza etiology	

5. Mastoiditis, antritis	Have an idea for diagnosis and choosing treatment tactics	List symptoms and diagnostic methods	1) Kosyakov S. Ya. Selected issues of practical otosurgery; monograph / - Moscow: MTsFER. - 2012 - 224 p. 2) Laiko A.A., Zabolotny D.I. Recurrent otitis media - 2001 - 153 p.
6.) Surgical treatment (antrotomy)	Have an idea about the technique of the operation	List the indications	1) Kosyakov S. Ya. Selected issues of practical otosurgery; monograph / - Moscow: MTsFER. - 2012 - 224 p. 2) Laiko A.A., Zabolotny D.I. Recurrent otitis media - 2001 - 153 p.

ORGANIZATION AND CONTENT OF THE LESSON.

Table 16

Tasks for self-preparation for a practical lesson (300 min)

№ / №	Activity algorithm		Indicative signs		
	Consecutive actions	Means of action	Reason	Control criteria	Time (min.)
1	Patient management	Examination of thematic patients in the hospital. Evaluation of the identified changes, differential diagnosis, diagnosis and choice of treatment tactics (use the chart of the medical history)	Developing the skill of examining a patient, analyzing and synthesizing the data obtained	Complaints, medical history data from general clinical examination, objective endoscopic examination of ENT organs, R-graphy of the temporal bone according to Schuller, Mayer, Stenwerm, tone threshold audiograms, tympanograms	100
2	Report on independent work based on the results of management	Students report the results of patients management, agree on the diagnosis and treatment	Developing Clinical Thinking and Skills		85

3	Performing diagnostic and therapeutic procedures	Preparation of ear cotton holders, taking a swab from the ear, introducing turundas with medicinal substances, washing the ear	Developing and Training Skills	Visual	115
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Each subgroup of 2-3 students examines one patient. Students get acquainted with complaints, collect anamnesis, examine ENT organs, make the necessary toilet in the ear canal and, after examining the ear, draw an otoscopic picture. The teacher examines the patients and gives instructions on the necessary additions and clarification of the study data or re-examination. After checking the teacher studies the patients with the whole group. The analysis is structured in such a way that students take an active part in it. Through a survey the teacher determines the preparedness for the classes. When analyzing the patient it should be indicated that they are not always of the same type, that in addition to a pronounced pain symptom, there may be complaints about a feeling of pressure, ear congestion. It is necessary to note that diagnosis is made almost simultaneously with the appearance of pain and hearing loss (in contrast to the furuncle of the ear canal or to radiating pain). It is necessary to dwell on the meaning of the symptom of pulsating noise in order to identify incipient mastoiditis.

When collecting an anamnesis and analyzing the data obtained special attention is paid to general infectious diseases that precede or accompany otitis media, while emphasizing the role of common diseases.

Having noted the great diagnostic value of the patient's complaints it should be emphasized that only the otoscopic picture gives undoubted data on the day of diagnosis. Before analyzing the latter it is necessary to dwell on some external signs of otitis media and mastoiditis, pointing out the significance of such symptoms as pain when pressing on the tragus, swelling behind the ear, etc. Along the way it is necessary to touch on the differential diagnosis between external and middle otitis and mastoiditis.

With catarrhal otitis it is necessary to note the shape of the light cone or its absence, the retraction of the tympanic membrane. Its mobility during examination with a Sigle funnel and blowing. It is obligatory to carry out ear manometry with the determination of the patency of the auditory tubes. Next, auditory and statokinetic functions are examined. After confirming the diagnosis by the teacher, the students outline a plan of therapeutic measures.

Treatment methods should be considered according to the stages of the disease, paying attention to the importance of general treatments (rest, diet, sedatives, sulfa drugs, antibiotics) and local treatment with heat (compresses, sollux) or cold, external ear toilet, ear blowing etc. Paracentesis, indications and technique. With appropriate patients paracentesis should be demonstrated, the effectiveness of drainage of a purulent focus in the ear should be pointed out and the means used to improve the outflow of pus (expansion of the incision, removal of granulomas, papillae, etc.), should be dwelled upon, in particular, the need for careful care of the external ear, especially in children, to prevent diseases of the external auditory canal, which may impede the drainage of the middle ear. From this point of view it is necessary to consider the feasibility of prescribing various ear drops.

Tests on : «Diseases of the external ear (otomycosis, sulfur plug, eczema, furuncle, diffuse inflammation of the skin of the ear canal). Diseases of the middle ear (acute

purulent inflammation of the middle ear, mastoiditis, antritis, catarrh of the middle ear).

1. EXTERNAL DIFFUSIVE OTITIS IN ADULTS IS CHARACTERIZED BY

- 1) pain when pressing on the tragus
- 2) pain on percussion of the mastoid process
- 3) dizziness
- 4) nystagmus

2. THE FURUNCLE OF THE EXTERNAL AUDITORY CANAL IS CAUSED BY

- 1) trauma to the skin of the external auditory canal
- 2) mastoiditis
- 3) catarrhal otitis media
- 4) dysfunction of the temporomandibular joint

3. IN OTOMYCOSIS CAUSED BY ASPERGILLUS NIGER THE COLOR OF THE DISCHARGE WILL BE

- 1) black - brown
- 2) yellowish
- 3) greenish
- 4) white-gray

4. MAIN SYMPTOM OF SALPINGEMPHRAXIS IS

- 1) sharp pain in the ear
- 2) nystagmus
- 3) hyperacusis
- 4) unilateral deafness

5. TO REMOVE SULFUR PLUGS THE WATER TEMPERATURE MUST BE

- 1) 27°C
- 2) 30°C
- 3) 37°C
- 4) 42°C

6. WHEN REMOVING THE SULFUR PLUG FROM THE EAR THE JET OF WATER FROM THE SYRINGE IS DIRECTED ON THE _____ WALLS

- 1) lower back
- 2) upper back
- 3) anteroinferior
- 4) anterior superior

7. TO SOFTEN THE SULFUR PLUG IN THE EAR IS USED

- 1) distilled water
- 2) 3% solution of boric alcohol
- 3) sodoglyceric drops
- 4) hydrocortisone suspension

8. PATIENTS WITH ACUTE OTITIS MEDIA HAVE HEARING LOSS

- 1) perceptual
- 2) mixed
- 3) conductive

9. PARACENTESIS OF THE TYMPANIC MEMBRANE IS DONE IN A _____ QUADRANT

- 1) anterior-upper
- 2) anterior-inferior
- 3) back-upper
- 4) posterior-inferior

10. THE MOST COMMON PATH OF INFECTION INTO THE MIDDLE EAR IS

- 1) through the auditory tube

- 2) through the external auditory canal with an injury to the eardrum
- 3) hematogenous way
- 4) lymphogenous pathway

11. NARROWING OF THE EXTERNAL AUDITORY CANAL IS OBSERVED IN

- 1) otosclerosis
- 2) chronic otitis media
- 3) acute otitis media
- 4) otitis externa

12. IN ACUTE PURULENT OTITIS MEDIA COMPLICATED BY MASTOIDITIS _____ IS OBSERVED

- 1) paracentesis of the tympanic membrane
- 2) anthrotomy
- 3) atticotomy
- 4) antromastoidotomy

13. WHEN THERE IS A SULFUR PLUG IN THE EXTERNAL AUDITORY CANAL _____ HEARING LOSS IS NOTICED

- 1) perceptual
- 2) mixed
- 3) conductive

14. DIAGNOSTIC SIGN OF ACUTE OTITIS MEDIA IS

- 1) hyperemia of the tympanic membrane
- 2) cicatricial changes in the eardrum
- 3) shortening of the malleus handle and light cone
- 4) granulation in the lumen of the external auditory canal

Keys to the topic:

«Diseases of the external ear (otomycosis, sulfur plug, eczema, furuncle, diffuse inflammation of the skin of the ear canal). Diseases of the middle ear (acute purulent inflammation of the middle ear, mastoiditis, anthritis, catarrh of the middle ear).

№	Answer	№	Answer
1	1	8	3
2	1	9	4
3	1	10	1
4	4	11	4
5	3	12	4
6	2	13	3
7	3	14	1

Cases on the topic: “Diseases of the external ear (otomycosis, sulfur plug, eczema, furuncle, diffuse inflammation of the skin of the ear canal). Diseases of the middle ear (acute purulent inflammation of the middle ear, mastoiditis, anthritis, catarrh of the middle ear)

Case № 1

Two weeks before admission to the hospital the patient developed pain in the right ear, temperature was 39°, headache. After 2 days a purulent discharge appeared from the ear. The patient's condition improved. Previously, there was no suppuration from the ear. 2 days ago

the pain in the ear intensified, the amount of purulent discharge increased, and swelling appeared in the ear region.

During otoscopy: mucopurulent discharge in the right auditory canal, the tympanic membrane is hyperemic, a pulsating reflex is visible in the posterior inferior quadrant, overhanging of the posterior-upper wall of the bone section of the auditory canal.

Diagnose the case, prescribe treatment.

Case № 2

A 30-year-old man came to the ENT with complaints of constant itching in the external auditory canals, a sensation of a foreign body, and a slight hearing loss in both ears. Sick for 2 years, the disease periodically worsens.

During otoscopy: the skin of the ear canals is slightly hyperemic, infiltrated. In the membranous-cartilaginous sections there are multiple coarsened scales of the desquamated epidermis; on the skin of the bone sections multiple green threads are clearly visible. The eardrums are slightly hyperemic, infiltrated, covered with films that look like wet blotting paper.

What is the diagnosis? How to treat the patient?

Case № 3

A 19-year-old patient was admitted to the ENT department with complaints of severe pain in the right ear and behind the ear, fever, chills, headache, hearing loss in the right ear. Sick for 10 days.

Objectively: the child's condition is moderate. Temperature 38.3°C. The right auricle is bulging, the skin behind the ear is slightly hyperemic, infiltrated, edematous, fluctuation is palpated. The overhang of the upper-posterior wall of the bone section of the right auditory canal is determined. The tympanic membrane is hyperemic, infiltrated, identification points are not differentiated.

What is the diagnosis? How to treat the patient?

Case № 4

In a patient with acute otitis media on the 15th day after the onset of the disease, on the X-ray of the temporal bone in the Schüller laying in the area of the mastoid process, a significant enlightenment is determined, at the bottom of which the remains of rarefied partitions between the pneumatic cells are traced.

What disease is this x-ray picture typical for?

Case № 5

Patient K., aged 27, came to an ENT doctor. Complaints: discharge from the right ear, pain in it, hearing loss.

From the anamnesis it was established that he fell ill 2 days ago after bathing in cold water. There was a sharp pain in the right ear, could not sleep at night. After applying a compress and introducing drops of camphor oil the pain somewhat decreased. Didn't go to the doctor.

That morning he saw that a purulent discharge appeared from the ear, the pain decreased, but the hearing remained reduced.

Objectively: the area of the mastoid process and the auricle are not changed, there is mucopurulent discharge in the external auditory canal. After the washing the ear a hyperemic, edematous, tympanic membrane without identification points is determined in the posterior-lower quadrant of which a perforation is visible, purulent discharge enters through the perforation.

Diagnose the case. Prescribe treatment.

Case № 6

Patient K., aged 24, complains of pain in the left ear, swelling and soreness in the left ear, hearing loss, headache, and general weakness.

From the anamnesis it is known that 4 days ago, after hypothermia, shooting pain in the left ear increased at night. In the following days the pain intensified, the temperature rose to 38 ° C, and her health deteriorated sharply.

Objectively: the skin of the mastoid process is hyperemic, pasty, soft tissues are infiltrated, there is sharp pain on palpation.

Otосcopy: narrowing of the bony part of the external auditory canal due to the omission of the posterior superior wall, the tympanic membrane is hyperemic, edematous, there are no identification points.

Diagnose the case. Prescribe treatment.

Case № 7

Patient N., 29 years old, was delivered by ambulance to the ENT department in critical condition with complaints of excruciating headache, aggravated by noise, light, nausea, and repeated vomiting. 5 days ago the left ear was acutely ill, he notes hearing loss.

Objectively: the child's position is forced (bent legs and head thrown back), the face is pale, suffering. Sometimes there is excitement, increased irritability. There is stiff neck, positive symptoms of Kerning, Brudzinsky. Pathological reflexes of Gordon, Babinsky are revealed.

Otосcopy: severe hyperemia and swelling of the tympanic membrane on the left, identification points are not determined. On the right the tympanic membrane is not changed.

Blood test: HB - 16.2 g%, erythrocytes - 4500000, leukocytes - 16000, eosinophils - 0, basophils - 1. stab - 3, segmented - 67, lymphocytes - 23, monocytes - 6, ROE - 56 mm h.

A spinal puncture was performed: the fluid was turbid, the pressure was 400 mm of water column, cytosis of 2000 cells due to polynuclear cells, protein - 2.5%, sugar - 400

mg, chlorides - 400 mg, staphylococcus aureus was sown.

Diagnose the case. Prescribe treatment.

Case № 8

Patient F., 24 years old, was delivered to the ENT department as an emergency with complaints of headache on the right side, purulent discharge from the ear, hearing loss, severe chills, repeated up to 2-3 times during the last two days.

From the anamnesis it was found out that suppuration from the ear occurred at the age of 12.

Objectively: the patient's general condition is of moderate severity, consciousness is preserved, contact is easy.

Otoscopy shows a marginal perforation of the tympanic membrane in the posterior superior quadrant, granulations, whitish masses, and purulent discharge with an odor are determined in the tympanic cavity. The rest of the tympanic membrane is hyperemic. Pain is noted when pressing the mastoid process and along the vascular bundle under the anterior edge of the sternocleidomastoid muscle. The temperature fluctuates during the day from 35.5 ° C to 40.6 ° C, and the rise in temperature is accompanied by chills, and the fall in temperature is accompanied by cold drenching sweat. Metastatic thrombophlebitis was found in the right popliteal fossa.

Blood dialysis: HB-15.2 g / l, erythrocytes-5100000, leukocytes-15700, basophils-2, eosinophils-5, young-2, stab-3, segmented-56, lymphocytes-22, monocytes-10, ROE- 47mm hour. Diagnose the case. Prescribe treatment.

Case № 9

Patient F., 54 years old. Complaints of severe pain in the left ear, hearing loss, fever, headache. She fell ill the night before, there was a severe shooting pain in the ear, which somewhat decreased after taking analgen and applying a warm bandage.

Objectively: the area of the mastoid process and the auricle on the left are not changed, the external auditory canal is wide, clean, the tympanic membrane is sharply hyperemic, protruding in the posterior upper quadrant, identification points are not determined.

Diagnose the case. Prescribe treatment.

Homework: chronic suppurative otitis media. Orogenic intracranial complications. Labyrinthitis.

LESSON 7

Topic: CHRONIC PURULENT OTITIS MEDIA. OTOGENIC INTRACRANIAL COMPLICATIONS. LABYRINTHITIS. NON-PURULENT DISEASES OF THE MIDDLE EAR: CATARRH OF THE MIDDLE EAR, SENSORINEURAL HEARING LOSS, OTOSCLEROSIS, MENIERE'S DISEASE.

Relevance. The prevalence of chronic purulent inflammation of the middle ear, exacerbations leading to temporary and sometimes permanent disability, the development of hearing loss and severe life-threatening complications determine the social significance of this disease. A doctor of any specialty should know the symptoms of chronic purulent otitis media and its complications in order to prevent their development in time, and if they occur, send the patient to the ENT hospital in a timely

manner for emergency care. Orogenic intracranial complications are serious, life-threatening diseases, the lethality of which takes the first place in the structure of otorhinolaryngological morbidity. They can occur as a result of infection from the ear into the cranial cavity and amount to 2-3% of the total number of patients with purulent diseases of the middle ear, much more often with chronic purulent epitympanitis. The outcome of the disease depends on the timely recognition of the symptoms of an incipient complication and the correct orientation in treatment tactics, in connection with which knowledge of this material is a test of the maturity of the student's thinking and is important in practice. Severe hearing loss, which makes it difficult for people to communicate, in 91% of cases is due to non-purulent ear diseases. Hearing loss, often accompanied by excruciating tinnitus, affects a person's ability to work, his morale. A child who lost his hearing early usually cannot learn to speak and grows up deaf and mute. No less painful are vestibular disorders that lead to long-term disability and even complete disability. All this determines the social significance of the problem of non-purulent ear diseases.

Objectives. After studying the topic the student must:

have an idea about the causes leading to the chronic course of otitis media, cholesteatoma, methods of surgical treatment; about the ways of penetration of infection from the middle and inner ear into the cranial cavity and the stages of its spread, methods of surgical treatment;

have an idea about the etiology and pathogenesis of non-purulent ear diseases, methods of surgical treatment; the main clinical symptoms of otogenic intracranial complications (meningitis, abscess of the brain and cerebellum) and otogenic sepsis, the principles of their treatment and prevention;

know the main symptoms and clinical forms of chronic suppurative otitis media, its complications, the principles of conservative treatment and indications for surgical intervention; prevention, medical examination; main clinical symptoms of middle ear catarrh, sensorineural hearing loss, otosclerosis, Meniere's disease, principles of their treatment;

be able to perform otoscopy, evaluate X-ray data in the Schüller and Mayer layout, make a diagnosis and conduct a differential diagnosis of clinical forms of chronic suppurative otitis media, recognize the symptoms of complications in a timely manner and choose rational treatment tactics;

perform some diagnostic and therapeutic manipulations; perform an otoscopy, describe the X-ray data in the Stenvers style, examine the auditory and vestibular functions and assess their condition, choose an adequate treatment strategy, provide assistance during an attack of Meniere's disease.

Equipment. Forehead reflector, viewing instruments, tuning fork set, ear probe, ear tweezers, attic irrigation cannula, ear loop, radical ear surgery and tympanoplasty instrument kits. Bone preparations, tables, radiographs and slides.

Location of the lesson. Thematic training room at the Department of Otorhinolaryngology, ENT clinic, ENT hospital.

Table 17

Tasks for self-preparation for a practical lesson

Questions	Objectives	Self-control tasks	Sources of information
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<p>1. Mesotympanitis: 1) localization of the inflammatory process, the nature of perforation of the tympanic membrane and discharge from the ear 2) clinical manifestations</p>	<p>Know to use in diagnosis, be able to diagnose and choose treatment tactics</p>	<p>Draw an otoscopic picture and indicate the location of the perforation List and name the type of hearing loss</p>	<p>1) Palchun V.T., Magamedov M.M., Luchikhin L.A. Otorhinolaryngology: textbook M.: GEOTAR-Media, 2014 2) Palchun V.T. Otorhinolaryngology: national guidelines -M. : GEOTAR - Media. - 2013 - 919 p.</p>
<p>2 Epitympanitis: 1) localization of the inflammatory process, the nature of perforation of the tympanic membrane and discharge from the ear 2) clinical manifestations 3) Cholesteatoma. 4).Conservative treatment of chronic suppurative otitis media Surgical treatment of chronic suppurative otitis media: 5) Radical operation tympanoplasty</p>	<p>The same Know for diagnostics Know for future practical application Have general idea of the operation techniques</p>	<p>Draw an otoscopic picture and indicate the location of the perforation Enter in the auditory passport data characteristic of left-sided chronic suppurative otitis media List diagnostic methods Name the principles and stages List indications and name types</p>	<p>1) Barton M. Diseases of the ear, throat and nose. Brief guide for doctors and students. St. Petersburg: Nevsky dialect; M.: Binom, 2002 2)Palchun V. T., Kryukov A. I., Magomedov M. M. Otorhinolaryngology: textbook M.: Geotar-Media, 2020 3) Komarov M. V. [et al.]. Atlas. Otoloscopy. Ear pathology in color: a practical guide to otorhinolaryngology St. Petersburg : Poliforum, 2017 4) Gulya E.J.: Glasscock-Shambo ear surgery. In 2 volumes (number of volume: 2 Panfilova.-2015, 864p</p>
<p>3. Labyrinthitis</p>	<p>The same</p>	<p>List treatment forms and principles</p>	<p>otorhinolaryngology St. Petersburg : Poliforum, 2017</p>
<p>4. Ways of penetration of infection from the ear into the cranial cavity and stages of its spread</p>	<p>Have an idea for prevention complications</p>	<p>List and write in workbook</p>	<p>4) Gulya E.J.: Glasscock-Shambo ear surgery. In 2 volumes (number of volume: 2 Panfilova.-2015, 864p</p>
<p>5. Otogenic diffuse purulent meningitis</p>	<p>Know to use for diagnostics and for choosing treatment tactics</p>	<p>Name the symptoms. List diseases for a differential diagnosis</p>	<p>1) Babiak V.I., Hoffman V.R., Nakatis Ya.A. Neurootorhinolaryngology. Guide for doctors. - 2002 - 727 p. 2) Babiyak V.I., Nakatis Ya.A. Clinical</p>
<p>6. Stages of the course of brain and cerebellum abscess</p>		<p>List and write in workbook</p>	<p>otorhinolaryngology, a guide for physicians. -</p>

7. Brain abscess		List four groups of main clinical symptoms. Record the examination plan in the workbook	2005 - 200 p. 3) Blotsky A.A., Karpishchenko S.A. Emergency conditions in otorhinolaryngology. - St. Petersburg: "Eskulap", 2009. - 175 p.
8. Cerebellum abscess		Name the clinical symptoms and indicate the diseases for a differential diagnosis	
9. Orogenic sepsis		Name two of its forms and list general and focal symptoms. Write down in the workbook the diseases for a differential diagnosis	1) Blotsky A.A., Karpishchenko S.A. Emergency conditions in otorhinolaryngology. - St. Petersburg: "Eskulap", 2009. - 175 p. 2) Palchun V.T., Luchikhin L.A., Kryukov A.I. Inflammatory diseases of the pharynx. M.: GEOTAR Media, 2007.
10. Principles of treatment of otogenic complications	Name a complex of therapeutic measures, indicating their sequence.	Know for practical application	1) Altman Ya. A., Tavartkiladze G. A. Guide to audiology. - M.: DMK Press, 2003. - 360 p.
11. Middle ear catarrh	Know to use for diagnostics and for choosing treatment tactics	Name the symptoms Describe the otoscopic picture. Determine the type of hearing loss. List complex of medical measures	2) Babanov S.A.: Occupational sensorineural hearing loss. Monograph, - Infra-M, Vuzovsky textbook. - 2017 - 98 p. 3) Babiyak V. I., Hoffman V. R., Nakatis Ya. A. Neurootorhinolaryngology. Guide for doctors. - 2002 - 727 p.
12. Sensorineural hearing loss		Make up an auditory patient passport for sensorineural hearing loss. List complex of medical measures	

13. Otosclerosis		List the main symptoms. Indicate the type of hearing loss in the initial stage of the disease, name and evaluate the tuning fork test confirming the diagnosis. Determine the treatment tactics	
14. Meniere's disease	Know to use for diagnostics and for choosing treatment tactics	Name and write down in the workbook the triad of symptoms. List the complex of therapeutic measures used during an attack of the disease. Name three types of surgery	Gersdorf M.: Surgery of the middle ear. Atlas, - Binom.-2014.- 28-143 p..

Table 19

Self-work plan (300 min.)

№ / №	Activity algorithm		Indicative signs		
	Consecutive actions	Means of action	Reason	Control criteria	Time (300min.)
1	Patient management	Examination of thematic patients in the hospital. Reporting a medical record.	Developing the skill of examining a patient, analyzing and synthesizing the data obtained	Complaints, anamnesis of the disease, data from general clinical examination, objective endoscopic examination of the ENT organs, R-graphy of the temporal bone according to Schuller, Mayer, Stenwerm, tone threshold audiograms, tympanograms	200
2	Performing diagnostic and therapeutic procedures	Determination of the patency of the auditory tube, blowing out	Developing and drilling the skills	Visual, verbal	100

		the ear, the introduction of vasoconstrictors into the nasal cavity and nasopharynx			
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When analyzing patients attention should be paid to the need for a clear analysis of complaints and anamnestic data, allowing to a certain extent to identify the cause of the duration of the inflammatory process in the ear, its nature and dynamics. At the same time, accounting frequency of exacerbations, presence of labyrinthine attacks, headaches and other manifestations that characterize the dynamics of the course of otitis media and often allow to correctly solve the diagnostic problem.

When examining the ear it is necessary to pay attention to the large differential diagnostic value of the quantity and nature (color, smell, consistency) of the purulent discharge. In cases of epitympanitis probing of the epitympanic space is demonstrated (determining the size of the stroke and the presence of cariously altered areas of bone tissue) and washing it with a cannula.

Students examine the tympanic cavity after inserting the probe into the attic, after which they independently carry out this manipulation. After washing the attic, the nature of the washing liquid is studied (the presence of films, scales, epidermis on the surface of the liquid, its turbidity, the presence of thick pus, strands of mucus, crumbly pus in it). At the same time the great diagnostic value of such a study of the liquid is noted.

The teacher checks the students' ability to use tuning forks and speech (whispered or spoken) to determine the state of hearing, as well as the correctness of the healthy ear being turned off. If an x-ray examination of the temporal bones of the patient has already been performed, then these x-rays are shown to the student. Demonstration of X-rays from the training set with different patterns of bone changes. After that the patient is analyzed taking into account all the data obtained during his examination in order to clarify the diagnosis (meso or epitympanitis, complicated or not complicated).

Having settled on the characteristics of the ear lesion being analyzed with epitympanitis, it is necessary to actively monitor the patient, examine or hospitalize him.

Particular attention is paid to the possibility of developing intracranial complications.

Tests on the topic: "Chronic suppurative otitis media. Labyrinthitis. Non-suppurative diseases of the middle ear: catarrh of the middle ear, sensorineural hearing loss, otosclerosis, Meniere's disease.

1. TREATMENT OF PATIENTS WITH CHRONIC EXUDATIVE OTITIS MEDIA INCLUDES

- 1) general cavitary ear surgery
- 2) mastoidectomy
- 3) myringotomy
- 4) stapedectomy

2. GENERAL EAR SURGERY IS INDICATED IN

- 1) adhesive otitis media
- 2) otosclerosis
- 3) exudative otitis media
- 4) chronic purulent-destructive epitympanitis

3. CHARACTERISTIC OTOSCOPIC SIGN OF CHRONIC PURULENT OTITIS MEDIA IS

- 1) scars on the eardrum
- 2) lime deposits on the eardrum
- 3) perforation of the eardrum
- 4) dull color of the eardrum

4. OTOSCLEROSIS IS MORE COMMON IN

- 1) girls
- 2) boys
- 3) men
- 4) women

5. THE PATHOGENESIS OF OTOSCLEROSIS IS BASED ON

- 1) osteodystrophic process
- 2) decrease in intralabyrinthine pressure
- 3) increased intralabyrinthine pressure and edema (hydrops) of the labyrinth
- 4) cicatricial process in the tympanic cavity

6. OTOSCOPIC SIGN OF OTOSCLEROSIS IS

- 1) thickening of the eardrum
- 2) normal appearance OR thinning of the eardrum
- 3) perforation of the tympanic membrane in the stretched part
- 4) the presence of scars and petrifications on the eardrum

7. SURGICAL TREATMENT OF PATIENTS WITH OTOSCLEROSIS IS

- 1) tympanoplasty
- 2) antromastoidotomy
- 3) stapedoplasty
- 4) atticotomy

8. IN OTOSCLEROSIS THE PRIMARY OTOSCLEROTIC FOCUS IS LOCALIZED IN THE AREA OF

- 1) oval window
- 2) round window
- 3) eardrum
- 4) tympanic opening of the auditory tube

9. HEARING LOSS IS DETECTED IN TYMPANAL FORM OF OTOSCLEROSIS

- 1) perceptual
- 2) mixed
- 3) conductive
- 4) scalar

10. IN A PATIENT WITH DAMAGE TO THE SOUND-RECEIVING DEPARTMENT OF THE SOUND ANALYZER IN THE RIGHT EAR, SOUND WILL BE DIRECTED IN WEBER'S EXPERIMENT

- 1) to the right
- 2) to the left
- 3) both ways
- 4) to the center of the head

11. WHEN CARRYING OUT TONE THRESHOLD AUDIOMETRY IN A PATIENT WITH DAMAGE TO THE SOUND CONDUCTION DEPARTMENT OF THE SOUND ANALYZER WE OBSERVE

- 1) reduction of air sound conduction
- 2) decrease in bone and air sound conduction
- 3) decrease in bone sound conduction
- 4) islands of sound

12. PETROSITE IS CHARACTERISED BY

- 1) paresis or paralysis of the facial nerve
- 2) trihemiparesis
- 3) bilateral hearing loss
- 4) pain when chewing

13. PERMANENT SYMPTOM OF CHRONIC OTITIS MEDIA IS

- 1) increased body temperature
- 2) ear pain
- 3) perforation of the tympanic membrane
- 4) violation of Romberg's gait

14. THE PATHOGENETIC BASIS OF MENIERE'S DISEASE IS CONSIDERED TO BE

- 1) labyrinthine hydrops
- 2) the presence of cholesteatoma in the tympanic cavity
- 3) labyrinthitis
- 4) arterial hypertension

15. CHOLESTEATOMA IS CHARACTERISTIC FOR

- 1) otosclerosis
- 2) adhesive otitis media
- 3) chronic purulent mesotympanitis
- 4) chronic purulent epitympanitis

16. WHEN THE CHRONIC PURULENT MESOTYMPANITIS IS AGGRAVATED _____ IS OBSERVED

- 1) swelling of the soft tissues behind the ear
- 2) increased suppuration from the ear
- 3) nystagmus
- 4) stiff neck

17. MASTOIDITIS IS A COMPLICATION OF

- 1) acute purulent otitis media
- 2) chronic mesotympanitis
- 3) tubootitis
- 4) adhesive otitis media

18. SIGNS OF EPITYMPANITIS

- 1) perforation in the loose part of the eardrum
- 2) perforation in the stretched part of the tympanic membrane
- 3) intact eardrum
- 4) central perforation

19. MEDICINE USED DURING AN ATTACK OF MENIERE'S DISEASE

- 1) 2.4% solution of eufillin 10 ml into a vein
- 2) 0.1% atropine sulfate solution 1 ml under the skin
- 3) 50% solution of analgin 2 ml into the muscle
- 4) 5% solution of ascorbic acid 2 ml into a vein

20. OPERATION IS PERFORMED TO TREAT PATIENTS WITH MENIERE'S DISEASE

- 1) stapedoplasty
- 2) stapedectomy
- 3) drainage of the endolymphatic sac
- 4) otomastoidectomy

21. INDICATION FOR HEARING PROSTHETICS IS INCREASING THE THRESHOLDS OF PERCEPTION TO

- 1) speech frequencies at 10dB
- 2) speech frequencies at 20dB
- 3) speech frequencies at 40 dB or more

4) ultrasound

22. IN PURULENT MESOTYMPANITE _____ IS PERFORATED

- 1) relaxed part of the eardrum
- 2) stretched part of the eardrum
- 3) stretched and relaxed part of the eardrum
- 4) missing

23. IN SENSORINEURAL HEARING LOSS THE HEARING LOSS IS CAUSED BY A DISTURBANCE IN

- 1) sound conduction
- 2) sound perception
- 3) sound conduction and sound perception

24. CONDUCTIVE HEARING LOSS CAN BE CAUSED BY

- 1) tubootitis
- 2) neurinoma of the VII pair of medical sciences.
- 3) Meniere's disease
- 4) atrophy and degeneration of cells of the organ of Corti

25. IN CHRONIC MESOTYMPANITIS THE PROCESS IS MAINLY ON THE FLOOR OF THE TYMPANIC CAVITY

- 1) top
- 2) average
- 3) top and middle

26. ADHESIVE OTITIS MEDIA IS CHARACTERISED BY

- 1) perforation of the eardrum
- 2) mucopurulent discharge in the ear canal
- 3) retraction and scars on the eardrum
- 4) granulations, polyps in the tympanic cavity

27. ____ IS OF GREAT IMPORTANCE IN THE DIAGNOSIS OF MENIERE'S DISEASE

- 1) tympanometry
- 2) otoscopy
- 3) glycerol test
- 4) tone threshold audiometry

28. A CGILD IS BORN DEAF BECAUSE OF

- 1) treatment of the mother during pregnancy with ototoxic antibiotics
- 2) ultraviolet irradiation of the mother
- 3) incorrect position of the fetus
- 4) purulent otitis media in the mother

29. ONE OF THE SYMPTOMS OF SENSORINEURAL HEARING LOSS IS

- 1) objective noise in the ear
- 2) subjective tinnitus
- 3) paracusis of Willis
- 4) autophony

30. PARACUSIS Willisii IS OBSERVED IN

- 1) Meniere's disease
- 2) otosclerosis
- 3) sensorineural hearing loss
- 4) adhesive otitis media

31. STAPHOPLASTY IS PERFORMED IN

- 1) chronic suppurative otitis media
- 2) Meniere's disease
- 3) sensorineural hearing loss
- 4) otosclerosis

32. CHARACTERISTIC OBJECTIVE SYMPTOM OF CHRONIC PURULENT EPITHYMPAPITIS IS

- 1) perforation of the tympanic membrane and stretched part
- 2) cicatricial changes in the eardrum
- 3) pus in the external auditory canal
- 4) flow to the attic

33. PATIENTS WITH SENSORINEURAL HEARING LOSS COMPLAIN OF

- 1) suppuration from the ear
- 2) hearing loss, subjective tinnitus
- 3) itching in the ear
- 4) Hearing improvement in noisy environments

34. IN PATIENTS WITH SENSORINEURAL HEARING LOSS TONE THRESHOLD AUDIOMETRY IS DETECTING THE TYPE OF BONE AND AIR CURVES

- 1) descending without air-bone interval
- 2) descending with an interval between them 5 - 10 dB
- 3) ASCENDING with an interval between them 5 - 10 dB
- 4) horizontal with an interval between them of 35 - 40 dB

35. AT OTOSCOPY IN PATIENTS WITH SENSORINEURAL HEARING LOSS SHOWS

- 1) perforation of the tympanic membrane in the loose part
- 2) scar-changed tympanic membrane
- 3) retracted eardrum
- 4) unchanged eardrum

36. LEADING CAUSE OF SENSORINEURAL HEARING LOSS IS

- 1) infectious diseases and vertebrobasilar insufficiency
- 2) acute and chronic otitis media
- 3) drug intoxication and ear injury
- 4) work in conditions of noise and vibration

37. SYMPTOM OF ZYGOMATICITIS IS

- 1) trigeminitis
- 2) paresis or paralysis of the facial nerve
- 3) pain when chewing
- 4) hyperacusis

38. IN RADICAL SURGERY THE EAR IS UNITED INTO A COMMON CAVITY

- 1) tympanic cavity and external auditory canal
- 2) external auditory canal and antrum
- 3) tympanic cavity, antrum and external auditory canal
- 4) mastoid process and tympanic cavity

39. PATIENTS WITH ADHESIVE OTITIS MEDIA COMPLAIN OF

- 1) hearing loss
- 2) ear pain
- 3) suppuration from the ear
- 4) dizziness

40. THE CARHART NOTCH ON AUDIOGRAMS HAPPENS IN

- 1) Meniere's disease
- 2) adhesive otitis media
- 3) otosclerosis
- 4) exudative otitis media

41. IN EXUDATIVE OTITIS MEDIA ____ IS A REQUIRED EXAMINATION

- 1) tone threshold audiometry
- 2) tone suprathreshold audiometry

3) tympanometry

4) tone threshold audiometry and tympanometry

42. TYMPANOGRAM TYPE IS CHARACTERISTIC FOR EXUDATIVE OTITIS MEDIA

1) A

2) B

3) C

4) D

43. TYMPANOGRAM TYPE IS CHARACTERISTIC FOR SENSORINEURAL HEARING LOSS

1) A

2) B

3) C

4) D

44. TYMPANOGRAM TYPE IS CHARACTERISTIC FOR TUBO-OTITIS

1) A

2) B

3) C

4) D

45. TYMPANOGRAM TYPE IS CHARACTERISTIC FOR OTOSCLEROSIS

1) A

2) B

3) C

4) As

46. COCHLEAR IMPLANTATION IS CARRIED OUT FOR

1) atrophy and degeneration of cells of the organ of Corti

2) violation of the movement of the endolymph inside the labyrinth

3) mechanical compression of the nerve

4) atrophy of nerve cells in the auditory zone of the cerebral cortex

47. EAR NOISE IN SENSORINEURAL HEARING LOSS IS

1) physiological vibrator

2) pathological vibratory

3) non-vibrator

4) mixed

48. IN THE TREATMENT OF PATIENTS WITH SENSORINEURAL HEARING LOSS CAUSED BY IMPAIRED BLOOD FLOW IN THE LABYRINTH THE MOST EFFECTIVE IS

1) drug therapy

2) fluctuation

3) hyperbaric oxygenation

4) electropuncture

KEYS TO THE TOPIC:

“Chronic suppurative otitis media. Labyrinthitis. Non-suppurative diseases of the middle ear: catarrh of the middle ear, sensorineural hearing loss, otosclerosis, Meniere's disease”.

№	ANSWER	№	ANSWER	№	ANSWER	№	ANSWER
1	3	15	4	29	2	43	1
2	4	16	2	30	2	44	3
3	3	17	1	31	4	45	4
4	4	18	1	32	4	46	1
5	1	19	2	33	2	47	3

6	2	20	3	34	1	48	1
7	3	21	3	35	4		
8	1	22	2	36	1		
9	3	23	2	37	3		
10	2	24	1	38	3		
11	1	25	2	39	1		
12	2	26	3	40	3		
13	3	27	3	41	4		
14	1	28	1	42	2		

Tests on:

«Otogenic intracranial complications».

1. THE MOST COMMON PATH OF THE INFECTION INTO THE CAVITY SKULLS FROM THE MIDDLE AND INNER EAR IS

- 1) by contact
- 2) lymphogenous
- 3) hematogenous
- 4) labyrinth

2. SURGICAL INTERVENTION IS CARRIED OUT IN CHRONIC PURULENT OTITIS MEDIA COMPLICATED BY MENINGITIS

- 1) extended radical ear surgery
- 2) mastoidectomy
- 3) endoaural atticotomy
- 4) antromastoidotomy

3. FOR THE DIAGNOSTICS OF CHRONIC PURULENT OTITIS MEDIA COMPLICATED BY MENINGITIS IS CARRIED OUT

- 1) otoscopy, otoneurological examination
- 2) otoscopy, CT scan of the skull, blood test
- 3) otoscopy, CT scan of the skull, lumbar puncture, otoneurological examination
- 4) otoscopy, blood test, history taking

4. SYMPTOM OF OTOGENIC PURULENT MENINGITIS

- 1) ptosis
- 2) diplopia
- 3) nystagmus
- 4) positive symptoms of Kernig, Brudzinsky, stiff neck

5. OTOGENIC INTRACRANIAL COMPLICATIONS INCLUDE

- 1) petrositis
- 2) sinus thrombosis
- 3) zygomaticitis
- 4) Bezold's mastoiditis

6. SYMPTOM CHARACTERISTIC FOR OTOGENIC ABSCESS OF THE CEREBELLUM IS

- 1) adiadochokinesis
- 2) hyperacusis
- 3) amnesic aphasia
- 4) the position of the patient in the position of "pointing dog"

7. IN ACUTE PURULENT OTITIS MEDIA COMPLICATED WITH MASTOIDITIS AND SUBPERIOSTAL ABSCESS _____ IS PERFORMED

- 1) paracentesis of the tympanic membrane
- 2) antromastoidotomy
- 3) atticotomy

4) antrotomy

8. FORCED POSITION OF THE HEAD IS A CHARACTERISTIC SYMPTOM FOR

- 1) subdural abscess
- 2) sinus thrombosis
- 3) otogenic abscess of the cerebellum
- 4) extradural abscess

9. TEMPERATURE IS OBSERVED WITH SINUS THROMBOSIS

- 1) febrile
- 2) normal
- 3) subfebrile
- 4) hectic

10. A SUBDURAL ABSCESS IS A COLLECTION OF PUS

- 1) between the dura mater and the bone
- 2) in the depths of the substance of the brain
- 3) between the dura and arachnoid meninges
- 4) in the cerebellum

11. AN OPERATION IS PERFORMED IN OTOGENIC INTRACRANIAL COMPLICATIONS

- 1) extended radical ear surgery
- 2) atticotomy
- 3) tympanoplasty
- 4) antrotomy

12. BRADYCARDIA IS NOTICED IN

- 1) brain abscess
- 2) sinus thrombosis
- 3) otogenic meningitis
- 4) otogenic sepsis

13. TACTICS OF TREATMENT OF PATIENTS WITH SUBDURAL ABSCESS

- 1) mastoidectomy
- 2) antibacterial, symptomatic, detoxification therapy
- 3) extended radical ear surgery
- 4) extended radical ear surgery with obligatory opening of the abscess, antibacterial, symptomatic and detoxification therapy

14. MOST COMMON LOCALIZATION OF HEADACHE IN CEREBRAL ABSCESS IS

- 1) frontal area
- 2) occipital region with possible irradiation along the back of the neck
- 3) parietal region
- 4) temporal region

15. THE MOST COMMON SYMPTOM IN RIGHT-HANDED PEOPLE WITH AN ABSCESS OF THE LEFT TEMPORAL LOBE IS

- 1) agraphia
- 2) alexia
- 3) amnesic aphasia
- 4) motor aphasia

16. ADIADOCHOKINESIS IS A SPECIFIC SYMPTOM OF DAMAGE TO

- 1) temporal lobe of the brain
- 2) cerebellum
- 3) frontal lobe of the brain
- 4) labyrinth

17. AMNESTIC APHASIA IS OBSERVED IN

- 1) abscess of the frontal lobe of the brain

- 2) abscess of the cerebellum
- 3) meningitis
- 4) abscess of the temporal lobe of the brain

18. SPINAL PUNCTURE IS DONE IN THE DEPARTMENT OF THE SPINE

- 1) neck
- 2) breastfeeding
- 3) lumbar

19. IN THE CLINIC OF OTOGENIC ABSCESS OF THE BRAIN THE STAGES ARE DISTRIBUTED

- 1) one
- 2) two
- 3) three
- 4) four

20. HEMIANOPSY IS OBSERVED IN

- 1) abscess of the frontal lobe of the brain
- 2) abscess of the temporal lobe of the brain
- 3) abscess of the cerebellum
- 4) leptomeningitis

21. SENSORY APHAASIA IS OBSERVED IN PATIENTS WITH

- 1) abscess of the frontal lobe of the brain
- 2) abscess of the temporal lobe of the brain
- 3) cerebellar abscess
- 4) labyrinthite

22. CHANGE IN MUSCLE TONE IS OBSERVED WITH CEREBELLUM ABSCESS

- 1) decrease on the side of the lesion
- 2) decline on the opposite side
- 3) increase on the side of the lesion
- 4) rise on the opposite side

23. MENINGEAL SYMPTOMS IN OTOGENIC INTRACRANIAL COMPLICATIONS ARE THE CONSEQUENCE OF

- 1) infringement of the brain stem and cerebellum in the foramen magnum
- 2) extensive destructive changes in the bone walls of the tympanic cavity and mastoid process
- 3) inflammation of the substance of the brain
- 4) swelling and irritation of the meninges

24. AMONG THE OTOGENIC INTRACRANIAL COMPLICATIONS THE MOST COMMON IS

- 1) arachnoiditis
- 2) meningitis
- 3) brain abscess
- 4) sigmoid sinus thrombosis

25. EPILEPTIFORM SYNDROME IS ONE OF THE SYMPTOMS IN DISEASES OF

- 1) temporal lobe of the brain
- 2) frontal lobe of the brain
- 3) cerebellum
- 4) parietal lobe of the brain

26. THE PATH OF THE INFECTION FROM THE LABYRINTH TO THE CRANIAL CAVITY IS THROUGH

- 1) round window
- 2) oval window
- 3) snail plumbing
- 4) sylvian aqueduct

27. TEMPERATURE IS CHARACTERISTIC FOR TEMPERATURE BRAIN ABSCESS

- 1) hectic
- 2) febrile
- 3) subfebrile
- 4) normal

28. OTOGENIC ENCEPHALITIS IS CALLED

- 1) inflammation of the substance of the brain, spreading over a significant area without the formation of an abscess
- 2) inflammation of the substance of the brain, spreading over a significant area with the formation of an abscess
- 3) acute brain abscess
- 4) chronic brain abscess

29. A SYMPTOM OF VISUAL FIELDS LOSS IN TEMPORAL LOBE ABSCESS IS CALLED

- 1) hemiplegia
- 2) sensory aphasia
- 3) amnesic aphasia
- 4) hemianopsia

KEYS TO THE TOPIC:

«Otogenic intracranial complications».

№	Answer	№	Answer	№	Answer
1	1	11	1	21	2
2	1	12	1	22	1
3	3	13	4	23	4
4	4	14	2	24	2
5	2	15	3	25	1
6	1	16	2	26	3
7	2	17	4	27	3
8	3	18	3	28	1
9	4	19	4	29	4
10	3	20	2		

Case № 1

Patient K., 26 years old, came to an ENT doctor with complaints of dizziness, nausea, vomiting, imbalance. Dizziness is expressed in the sensation of rotation of surrounding objects. With sharp turns of the head and tilts of the body these symptoms are somewhat intensified.

From the anamnesis it was found out that the patient had been suffering from a disease of the left ear for about 10 years. Periodically observed purulent discharge from the ear with an unpleasant odor.

A spontaneous III degree horizontal small-sweeping nystagmus to the right is revealed.

Otoscopy: in the external auditory canal on the left there is a purulent discharge with a pungent odor, upon removal of which a marginal perforation of the tympanic membrane is visible with a passage to the attic. Granulations and whitish masses are also determined here. On the X-ray of the temporal bones according to Schüller and Mayer bone melting in the region of the antrum on the left is visible.

Diagnose the case and prescribe treatment.

Case № 2

Patient M., 16 years old, complains of hearing loss in the left ear. From the anamnesis it is known that the left ear fell ill 5 years ago after an exposure to cold, a purulent discharge appeared which did not stop for a long time. He was in the hospital for about a month - he was given antibiotics. About a year later the disease recurred. For the past two years he began to notice that he hears worse in his left ear.

Objectively: the right tympanic membrane is not changed, identification points are well expressed. The left tympanic membrane is retracted, cicatricial - changed, thickened, whitish plaques on its inner surface.

Right ear	Audiometry	Left ear
-	Subjective noise	Low tone
6 meters	Whispered speech	2 meters
6 meters	Normal speech	4 meters
6 meters	Loud speech	6 meters
-	Sound lateralization	-
+	Bone ratio	-
19	Bone conduction norm C128	22
38		15
60	C 2048-60	30

Case № 3

A 29-year-old patient suffering from left-sided chronic purulent mesoepithympanitis developed a severe headache, especially in the occipital region, nausea, vomiting, and gait disturbance.

Objectively: the general condition is severe. Temperature 38.4°C. Adiadochokinesis. Missing with a finger-nose test. Large-scale horizontal nystagmus to the left. On the left in the ear canal there is mucopurulent discharge. The tympanic membrane is hyperemic, the posterior - upper part of the tympanic membrane is destroyed. In the attic there are cholesteatoma masses. The area of the mastoid process is not changed, painless. On the X-ray of the temporal bones according to Schüller and Mayer there is destruction of the upper wall of the attic.

The fundus of the eye: the vessels are plethoric, tortuous. Lumbar puncture: cerebrospinal fluid flows out under pressure, clear. Cellular elements 15/3.

What is the diagnosis? How to treat the patient?

Case №. 4

A 20-year-old patient was delivered to the ENT department in serious condition, temperature 39.2°C, constant headache. Suffering from bilateral chronic otitis since childhood. Exacerbation happens periodically. The patient in bed lies on his side, in the position of a "pointing dog" (head thrown back, legs bent at the knees and pressed to the stomach), eyes closed, groaning. Rigidity of the occipital muscles, Kernig's symptom is determined. Lumbar puncture: the fluid flows out in a jet, turbid, pronounced pleocytosis. Positive reaction of Nonne-Apelt and Pandey. The content of sugar and chloride in the blood is reduced.

What is the diagnosis? Your actions?

Case № 5

Determine the type of hearing loss according to the following data

AD	TESTS	AS
0	Subjective noise	+
6 m	Whispered speech	At the auricle
> 6 m	Normal speech	2m
Muted	"Scream" with a ratchet	+
115s	C128 in (norm 120)	185s
50 s	C128 to (norm 60 s)	-
45s	s2048 in (norm 50	20s

Case № 6

Determine the type of hearing loss according to the following data

AD	TESTS	AS
+	Subjective noise	0
1,5m	Whispered speech	6 m
4,5m	Normal speech	>6m
+	"Scream" with a ratchet	muted
50s	C128 in (norm 120)	120 s
70 s	C128 to (norm 60 s)	-
35s	s2048 in (norm 50	55 s

Case № 7

Determine the type of hearing loss according to the following data

AD	TESTS	AS
0	Subjective noise	0
6 m	Whispered speech	0
>6m	Normal speech	1,5
muted	"Scream" with a ratchet	0
125 s	C128 in (norm 120)	15s
55 s	C128 to (norm 60 s)	-

50s	s2048 in (norm 50	5 s
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Case № 8

What localization of a pathology can be suggested according to the following data?

AD	TESTS	AS
0	Subjective noise	+
6 m	Whispered speech	0,5 m
> 6	Normal speech	2,5 m
muted	"Scream" with a ratchet	+
110s	C128 in (norm 120)	75 s
55 s	C128 to (norm 60 s)	-
50 s	s2048 in (norm 50	15s

Case № 9

Determine the type of hearing loss according to the following data

AS	TESTS	AS
+	Subjective noise	+
2 m	Whispered speech	1 m
5m	Normal speech	3,5
+	"Scream" with a ratchet	-
85s	C128 in (norm 120)	80 s
40 s	C128 to (norm 60 s)	40 s
20s	s2048 in (norm 50	10s

Case № 10

What localization of a pathology can be suggested according to the following data?

AD	TESTS	AS
+	Subjective noise	0
2 m	Whispered speech	6 m
6 m	Normal speech	>6 m.
+	"Scream" with a ratchet	muted
55 s	C128 in (norm 120)	125s
65 s	C128 to (norm 60 s)	-

40 s	s2048 in (norm 50	50 s
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Case № 11

How can vestibular dysfunction be explained by the following vestibular passport data:

AD	Tests	AS
0	Subjective sensations	+
0	Spontaneous nystagmus	+
+	Caloric nystagmus	+
25s	Postrotational nystagmus	50s
0	Pressor nystagmus	0

Case № 12

How can vestibular dysfunction be explained by the following vestibular passport data:

AD	Tests	AS
+	Subjective sensations	0
+	Spontaneous nystagmus	0
+	Caloric nystagmus	+
30 s	Postrotational nystagmus	15s
0	Pressor nystagmus	0

Case № 13

How can vestibular dysfunction be explained by the following vestibular passport data:

AD	Tests	AS
+	Subjective sensations	0
+	Spontaneous nystagmus	0
+	Caloric nystagmus	0
30c	Postrotational nystagmus	10s
0	Pressor nystagmus	0

Case № 14

In what ear disease are the following data of vestibular deportation observed? How are they explained?

AD	Tests	AS
0	Subjective sensations	0
0	Spontaneous nystagmus	0
+	Caloric nystagmus	+
25s	Postrotational nystagmus	30s
0	Pressor nystagmus	0

Case № 15

Determine the localization of the pathological process according to the auditory passport and the following vestibular disorders:

AD	TESTS	AS
0	Subjective noise	+
5,5 m	Whispered speech	0,5 m
> 6 m	Normal speech	3 m
Muted	"Scream" with a ratchet	+
115s	C128 in (norm 120)	70s
55 s	C128 to (norm 60 s)	-
50s	s2048 in (norm 50	15 s

When performing finger-finger and finger-nose tests the patient misses to the right. In the Romberg position and when walking with closed eyes he deviates to the right.

Case № 16

A 25-year-old patient was diagnosed with left-sided adhesive nonperforative otitis media with severe hearing loss. A violation of barofunction on the side of the diseased ear was revealed.

What is the plan for clarifying clinical examination and treatment tactics?

Case № 17

The patient complained of a sudden decrease in hearing, a feeling of transfusion in the ear, autophony, noise in the ear. The general condition is satisfactory, the temperature is 36.7°, the blood test is within the normal range. Conductive hearing loss.

What is the diagnosis? What is the otoscopic picture? Medical tactics?

Case № 18

Patient I., 27 years old, was delivered to the ENT clinic by medical aviation with complaints of excruciating diffuse headache, suppuration from the left ear, and hearing loss.

From the anamnesis it was possible to establish that suppuration from the left ear has been bothering the patient for the last 6 years. As for the ear disease, he was treated in a hospital, they suggested surgery, but the patient categorically refused. Three weeks before the present illness the patient bathed in the river, in the evening the temperature rose to 38 ° C, pain in the ear, feeling generally unwell, weakness, nausea, and vomiting twice occurred. He did not go to the doctor, he took antibiotics by himself for 3 days. There was an improvement, the patient did not stop working. A sudden worsening of the state of health occurred three days ago.

Objectively: the patient's general condition is severe, he makes contact with difficulty, he is not fully oriented in time and space. The patient falls into an unconscious state, delirious. The skin is pale. Pulse 52 beats per minute, satisfactory filling, rhythmic, A / D-110/60 mm Hg. Art. Tapping on the left parietal bone is painful. Weakly positive Kernig's symptom, amnesic aphasia is clearly defined (the patient is right-handed).

Otосcopy: in the external auditory canal, profuse, creamy, purulent discharge with an odor. Total perforation of the tympanic membrane. The attic contains a large number of cholesteatoma masses.

Make a diagnosis and prescribe treatment.

Case № 19

Patient M., 19 years old, complains of hearing loss in the left ear. From the anamnesis it is known that the left ear hurt 5 years ago after exposure to cold. A purulent discharge appeared, which did not stop for a long time. She was in the hospital for about a month and was given antibiotics. About a year later the disease recurred. For the last two years, she began to notice that she hears worse in her left ear.

Objectively: the right tympanic membrane is not changed, identification points are well expressed. The left tympanic membrane is retracted, cicatricially changed, thickened, there are whitish plaques on its (inner) surface.

AD	Audiometry	AS
Low	Subjective noise	low
6m	Whispered speech	2m
6m	Normal speech	4m
6 m	Loud speech	6 m
-	Sound lateralization	-
+	The ratio of bone and air conduction	+
19	Bone conduction norm C128-20	22
38	Air conductivity C 128-40	15
60	From 2048-60	30

Diagnose the case, prescribe treatment

Case № 20

Patient A., aged 20, complains of a significant hearing loss in the left ear, occasional dizziness, accompanied by nausea and unpleasant subjective sensations.

From the anamnesis it is known that three years ago the patient had an attack of dizziness during work, which was accompanied by nausea and vomiting. An ambulance was called and the patient with suspected food poisoning, was taken to the infectious diseases clinic. The next day the patient felt well and was soon discharged. After 3 months the attack recurred and was accompanied by noise in the left ear, severe dizziness. The attack lasted about 2 hours. For the last 6 months attacks have been repeated every month, and the patient, feeling the approach of an attack, tries to sit down on something or lie down.

Objectively: the external auditory canals are of normal width, the tympanic membranes are not changed, the identification points are well expressed.

AD	Audiometry	AS
High tone	Subjective noise	High tone
3M	Whispered speech	1M
6M	Normal speech	2M
-	Loud speech	6M
+	Sound lateralization	2
+	The ratio of bone and air conduction	-

10	Bone conduction norm C128-20	5
25	Air conductivity C 128-40	74
40	From 2048-60	15

Diagnose the case, prescribe treatment

Case № 21

Patient I., 16 years old, was delivered by ambulance to the ENT department in serious condition with complaints of excruciating headache, aggravated by noise, light, also worried about nausea, repeated vomiting. Five days ago the left ear was acutely ill, there was a decrease in hearing.

Objectively: the patient's position is forced (bent legs and head thrown back), the face is pale, suffering. Sometimes there is excitement, increased irritability. There is stiff neck, positive symptoms of Kernig, Brudzinsky. Pathological reflexes of Gordon, Babinsky, Otoscopy: severe hyperemia and swelling of the tympanic membrane on the left, identification points are not determined; on the right eardrum is not changed.

Blood test: Hb - 16.2 g%, erythrocytes - 4500000, leukocytes - 16000, eosinophils - 0, basophils - 1. stab -3, segmented - 67, lymphocytes -23, monocytes - 6, ROE -56 mm per hour.

The patient underwent a lumbar puncture: the liquid was turbid, the pressure was 400 mm of water column, cytositis of 2000 cells due to polynuclear cells, protein - 2.5%, sugar - 40 mg, chlorides - - 400 mg, staphylococcus aureus is sown.

Diagnose the case, prescribe treatment

Case № 22

Patient E., 17 years old, was delivered to the ENT department by ambulance. From the anamnesis it was found out that the disease began 2 weeks ago, when there were shooting pains in the left ear, purulent discharge from it.

He was treated in the clinic, after which there was an improvement. Three days ago the patient's condition deteriorated sharply. The temperature again rose to 38°C, the amount of purulent discharge from the ear increased significantly, pain appeared with irradiation to the behind-the-ear region and to the back of the head.

An objective examination revealed: significant swelling in the area of the mastoid process on the left, the auricle protruded. On palpation of the surface of the mastoid process fluctuation, sharp pain is determined. In the left external auditory canal there is an abundant creamy purulent discharge after the removal of which the overhanging of the posterior-upper wall, the bony part of the auditory canal, is determined. Visible areas of the tympanic membrane are edematous, hyperemic, a pulsating reflex is visible.

Diagnose the case, prescribe treatment

Case № 23

Patient P., aged 27, complains of hearing loss in the right ear, an unpleasant sensation that increases with a change in head position, and subjective noise in the right ear. From the anamnesis it is known that 10 years ago the patient went fishing and was exposed to cold. A runny nose started, but the patient continued to work. Due to operational needs, the patient was urgently sent on a business trip to the Far East. The plane, on which the patient was flying, landed twice and in both cases the

patient experienced a sharp congestion in the ears. On return these phenomena recurred, but over the past 4-5 days the patient notes a sharp deterioration in hearing in the right ear.

Objectively: there is no discharge in the external auditory canal on the right. The tympanic membrane is retracted, there is no light cone and injected vessels are visible along the handle of the malleus. Through the tympanic membrane a horizontal level of fluid is visible, which remains when the position of the head changes.

Diagnose the case. Prescribe treatment.

Case № 24

Patient K., 19 years old, turned to an ENT doctor with complaints of dizziness, nausea, vomiting, imbalance. Dizziness is expressed in the sensation of rotation of surrounding objects. With sharp turns of the head and tilts of the body these symptoms are somewhat intensified.

From the anamnesis it was found out that the patient had been suffering from a disease of the left ear for about 10 years. Periodically observed purulent discharge from the ear with an unpleasant odor.

Examination reveals spontaneous III degree horizontal finely sweeping nystagmus to the right.

Otoscopy: in the external auditory canal on the left there is a purulent discharge with a pungent odor, upon removal of which a marginal perforation of the tympanic membrane is visible with a passage to the attic. Granulation and whitish masses are also determined here. The radiograph of the temporal bones according to Schüller and Mayer shows the straightening of the bone in the region of the antrum on the left.

Diagnose the case. Prescribe treatment.

Homework: diseases of the nose and paranasal sinuses: deviated septum, furuncle, acute and chronic rhinitis, acute and chronic sinusitis, polyposis rhinosinusitis, rhinogenic complications.

Lesson 8

Topic. DISEASES OF THE NOSE AND PARANASAL SINUSES: DEVIATED SEPTUM, FURUNCLE, ACUTE AND CHRONIC RHINITIS, ACUTE AND CHRONIC SINUSITIS, POLYPOSIS RHINOSINUSITIS, RHINOGENIC COMPLICATIONS.

Relevance. The pathology of the nose and paranasal sinuses occupies one of the first places in incidence rate of ENT organs and is often the cause of temporary disability. Knowledge of the clinical symptoms and treatment of nasal diseases, as well as timely diagnosis of rhinogenic intraorbital and intracranial complications, leading in some cases to death, are necessary for a doctor of any specialty.

Aim. After studying the topic, the student must:

have an idea about the etiology and pathogenesis of diseases, nose and paranasal sinuses, ways of infection penetration, methods of surgical treatment;

know the main clinical symptoms of diseases of the nose and paranasal sinuses, their complications, the principles of conservative treatment and indications for surgical intervention;

be able to perform anterior and posterior rhinoscopy, assess radiographs of the paranasal sinuses, make a diagnosis and conduct differential diagnosis, timely identify rhinogenic

complications, choose rational treatment tactics, and perform some diagnostic and therapeutic manipulations.

Location of the lesson. ENT room in the clinic.

Equipment. Frontal reflector, a set of viewing instruments, a nasal cotton holder, bayonet-shaped tweezers, nasal loops, a nasal conchotome, a needle for puncture of the maxillary sinus, a scalpel, a set of V. I. Voyachek for the study of smell, radiographs, slides.

Table 20
SELF-STUDY ASSIGNMENT FOR THE PRACTICAL CLASS

Questions	Objectives	Self –check tasks	References
1. Deviated septum	To know for diagnosis and choosing treatment	Draw an endoscopic picture for various types of the nasal septum deviation	Palchun V.T., Magamedov M.M., Luchikhin L.A. Otorhinolaryngology: textbook M.: GEOTAR-Media, 2014
2. Furuncle of the nose	- //-	Determine the tactics of the doctor and name the complex of therapeutic measures	Ovchinnikov Yu.M., Gamov V.P. Diseases of the nose, pharynx, larynx and ear: textbook M.: Medicine, 2003 Palchun V.T., Luchikhin L.A., Kryukov A.I. Inflammatory diseases of the pharynx. M.: GEOTAR-Media, 2007
3. Acute rhinitis	To know for diagnosis and choosing treatment	Name the stages of acute rhinitis. Write out prescriptions for his treatment	Palchun V. T. Otorhinolaryngology: national guide M. : GEOTAR-Media, 2008
4. Chronic rhinitis: a) catarrhal b) hypertrophic c) atrophic d) vasomotor	To know for diagnosis and choosing treatment	Conduct a differential diagnosis of catarrhal and hypertrophic rhinitis Name the forms and methods of treatment, draw a rhinoscopy picture Name the forms, conduct their differential diagnosis. Write out an ointment for treatment. Name the forms, draw their differential diagnostics	1) Lopatin Andrey Stanislavovich: Rhinitis: pathogenetic mechanisms and principles of pharmacotherapy, - LitTerra. -2013 - 368 p. 2) Palchun V.T. Otorhinolaryngology: national guidelines -M. : GEOTAR - Media. 2013 - 919 p.

5. Acute sinusitis		Name the main clinical symptoms, diagnostic methods. Indicate the localization of the pathological discharge in the nasal cavity in case of damage to various paranasal sinuses	Palchun V. T. Otorhinolaryngology: national guide M. : GEOTAR-Media, 2008
6. Chronic sinusitis		Name treatment methods	1) Piskunov G. Z., Piskunov S. Z. Clinical rhinology. - M.: MIA. - 2013. - 560 p. 2) Piskunov G. Z., Piskunov S. Z., Kozlov V. S., Lopatin A. S. Diseases of the nose and paranasal sinuses: endomicrosurgery. - M.: Collection "Top Secret". - 2003. - 208 p. 3) Piskunov G. Z. Polypous rhinosinusitis. - Moscow ed. gr. GEOTAR-Media. - 2016 - 96 p.
7. Rhinogenic intraorbital complications		Name. Write in a workbook. Determine treatment strategy	-Piskunov I.S., Zavyalov F.N., Piskunov V.S., Kuznetsov M.V. Diagnosis and treatment of rhinosinusogenic orbital complications.-Kursk.-2004-112 p.
8. Rhinogenic intracranial complications		Name. Determine treatment strategy	1) Kryukov A.I. A guide to emergency care for diseases of the ear and upper respiratory tract. - GEOTAR-Media. - 2016 - 386 p.

Table 21

Lesson plan (240 min.)

№ / №	Activity algorithm		Indicative signs		
	Consecutive actions	Means of action	Reason	Control criteria	Time (min.)
1.	Management of patients	Outpatient reception of	Confirm the ability to	Evaluation of the identified changes, conducting	120

		patients: 1) with nose diseases and paranasal sinuses; 2) with other diseases of the ENT organs.	examine the patient, analyze and synthesize the data obtained	differential diagnosis, diagnosis and choice of treatment tactics. Use a case history chart	
2.	Report on independent work based on the results of curation of out patients		Developing clinical thinking skills	Students report the results of curation of patients, agree on the diagnosis and treatment; draw up medical documentation (outpatient card, referrals, prescriptions)	50
3.	Performing diagnostic and therapeutic procedures	Preparation of nasal cotton holders, lubrication of the nasal cavity, administration of medicinal substances on swabs, taking a swab from the nose, insufflation of drugs	Developing and training skills		70

Tests on : «Diseases of the nose and paranasal sinuses: deviated septum, furuncle, acute and chronic rhinitis, acute and chronic sinusitis, polyposis rhinosinusitis, rhinogenic complications»

1. SYMPTOM IN CHRONIC POLYPOSIS ETHMOIDITIS

- 1) thinning of the nasal mucosa
- 2) mucous discharge from the nose
- 3) discharge from the nose with a putrid odor
- 4) recurrent nosebleeds

2. THE RHINOSCOPIC PICTURE OF ACUTE NON-SPECIFIC RHINITIS IS CHATACTERIZED BY

- 1) hyperemia of the nasal mucosa
- 2) enantheams in the mucous membrane
- 3) thinning of the nasal mucosa
- 4) papillary hyperplasia of the mucous membrane of the turbinates

3. IN PURULENT SPHENOIDITIS DISCHARGE IN THE NOSE IS FOUND IN THE NASAL PASSAGE

- 1) average
- 2) bottom
- 3) top

4) general

4. THE PRESENCE OF BLUE AND WHITE SPOT ON THE MUCOSA OF THE NOSE SHELLS IS CHARACTERISTIC OF RHINITIS

- 1) chronic vasomotor
- 2) chronic hypertrophic
- 3) chronic atrophic
- 4) acute nonspecific

5. RADIOLOGICAL SIGN OF PURULENT MAXILLARY SINUSITIS IS

- 1) parietal darkening of the maxillary sinus
- 2) inhomogeneous decrease in the transparency of the maxillary sinus
- 3) homogeneous intensive decrease in the transparency of the maxillary sinus
- 4) spherical shadow in the projection of the maxillary sinus

6. X-RAY SIGN OF CATARRHAL SINUSITIS

- 1) parietal darkening of the maxillary sinus
- 2) inhomogeneous decrease in the transparency of the maxillary sinus
- 3) homogeneous intensive decrease in the transparency of the maxillary sinus
- 4) spherical shadow in the projection of the maxillary sinus

7. THE DEVELOPMENT OF THE FURUNCLES IN THE NOSE IS CAUSED BY

- 2) leukemia
- 3) thyrotoxicosis
- 4) diabetes

8. MAXILLARY SINUSITIS OCCURS MORE OFTEN

- 1) odontogenic
- 2) rhinogenic
- 3) traumatic
- 4) orbitogenic

9. PAIN IN THE UPPER MOLAR WHEN BITING IS A SIGN OF

- 1) acute sinusitis
- 2) cysts of the maxillary sinus
- 3) acute periodontitis
- 4) polyposis hemisinuitis

10. RHINOGENIC MAXILLARY SINUSITIS IS DIFFERENTIATED FROM ACUTE PURULENT PERIOSTITIS OF THE UPPER JAW

- 1) the nature of pain
- 2) the presence of changes in the tissue of the alveolar process
- 3) teeth percussion data
- 4) changes in white blood cells

11. PUNCTION OF THE MAXILLARY SINUS IS CARRIED OUT THROUGH

- 1) superior nasal passage
- 2) middle nasal passage
- 3) lower nasal passage
- 4) the anterior wall of the sinus

12. ACUTE RUNNY NOSE HAS STAGES

- 1) one
- 2) two
- 3) three

4) four

13. SYMPTOM CHARACTERISTIC FOR THE CURVED SEPTUM IS

- 1) difficulty in nasal breathing
- 2) putrid smell
- 3) rhinorrhea
- 4) anosmia

14. OZENA SYMPTOM IS

- 1) wide nasal passages
- 2) polyposis hyperplasia of the nasal mucosa
- 3) recurrent nosebleeds
- 4) turbinate hypertrophy

15. METHOD OF TREATMENT OF CHRONIC HYPERTROPHIC RHINITIS

- 1) submucosal vasotomy
- 2) galvanocaustics
- 3) submucosal conchotomy
- 4) intranasal blockades

16. ANOSMIA IS OBSERVED IN

- 1) simple atrophic rhinitis
- 2) vasomotor rhinitis
- 3) ozena
- 4) hypertrophic rhinitis

17. BACILLA LEFLERA IS DETECTED IN

- 1) ozena
- 2) diphtheria
- 3) scleroma
- 4) syphilis

18. A STINKING RUNNY NOSE IS OBSERVED IN

- 1) hypertrophic rhinitis
- 2) simple trophic rhinitis
- 3) vasomotor rhinitis
- 4) ozena

19. INDICATION FOR RADICAL SURGERY ON THE MAXILLARY SINUS IS

- 1) rehabilitation of the focus of chronic inflammation
- 2) cyst removal
- 3) removal of a foreign body

20. TREPAN PUNCTURE IS CARRIED OUT FOR

- 1) maxillary sinus
- 2) cells of the ethmoid labyrinth
- 3) frontal sinus
- 4) sphenoid sinus

21. WHEN THE OLFACTORY RECESS IS CLOSED IT IS

- 1) essential hypo- or anosmia
- 2) respiratory hypo- or anosmia
- 3) cocasmia
- 4) hyperosmia

22. INFLAMMATION OF ALL PARANASAL SINUSES IS CALLED

- 1) polysinusitis

- 2) pansinusitis
- 3) hemisinusitis
- 4) rhinosinusitis

23. SINUS THROMBOSIS OCCURS IN A FURUNCLE OF THE NOSE

- 1) cavernous
- 2) sigmoid
- 3) transverse
- 4) longitudinal

24. SURGICAL METHOD OF TREATMENT OF NEURO-VEGETATIVE FORM OF VASOMOTOR RHINITIS

- 1) conchotomy
- 2) submucosal vasotomy
- 3) galvanocaustics
- 4) submucosal resection of the nasal septum

25. ANEMIZATION OF THE MUCOUS MEMBRANE OF THE LOWER NASAL CONCHA IS CARRIED OUT FOR DIFFERENTIAL DIAGNOSIS WITH

- 1) vasomotor and atrophic rhinitis
- 2) vasomotor and catarrhal rhinitis
- 3) vasomotor and hypertrophic rhinitis
- 4) catarrhal and hypertrophic rhinitis

26. IN THE EXAMINATION OF CHRONIC PURULENT-POLYPOSIS IT SHOULD BE CARRIED OUT

- 1) trepanopuncture of the frontal sinus
- 2) conservative therapy
- 3) radical surgery on the frontal sinus
- 4) endonasal opening of the frontal sinus

27. TREPANOPUNCTURE OF THE FRONTAL SINUSES IS DONE THROUGH THE WALL

- 1) bottom
- 2) medial
- 3) front
- 4) lateral

28. IN PURULENT-POLYPOSIS MAXILLARY SINUSITIS IT IS CARRIED OUT

- 1) physiotherapy and antibiotic therapy
- 2) radical surgery on the maxillary sinus
- 3) puncture of the maxillary sinus
- 4) maxillary sinusectomy

29. IN AN ABSCESED FORM OF FURUNCLES OF THE NOSE IT IS NECESSARY TO

- 1) prescribe symptomatic therapy and physiotherapy
- 2) open the boil, prescribe antibiotic therapy, dehydration therapy
- 3) prescribe antibiotic therapy, symptomatic therapy and physiotherapy
- 4) prescribe antibiotic therapy, dehydration therapy, physiotherapy

30. VASOMOTOR RHINITIS IS CHARACTERIZED BY

- 1) recurrent nosebleeds, difficulty in nasal breathing, paroxysmal sneezing
- 2) paroxysmal sneezing, mucopurulent discharge, fetid odor from the nose
- 3) paroxysmal sneezing, mucous discharge, difficulty in nasal breathing
- 4) recurrent nosebleeds, fetid odor from the nose, difficulty in nasal breathing

31. CHARACTERISTIC SYMPTOM FOR OZENA IS

- 1) anosmia

- 2) hyperosmia
- 3) recurrent nosebleeds
- 4) hypertrophy of the nasal mucosa

32. ODONTOGENIC MAXILLARY SINUSITIS IS CHARACTERIZED BY

- 1) watery nasal discharge with bouts of sneezing
- 2) dryness in the nose, crusts
- 3) alternate "stuffing" of the nose, itching in the nose
- 4) discharge from the nose with a putrid odor

33. DEVELOPMENT OF CHRONIC ATROPHIC RHINITIS IS MOSTLY CAUSED BY

- 1) humid and cold climate
- 2) dry and hot climate
- 3) curvature of the nasal septum
- 4) maritime climate

34. WHEN PUSHING A TOOTH INTO THE MAXILLARY SINUS IT IS NECESSARY TO

- 1) remove it through the hole
- 2) plug the well
- 3) remove it during microstomy
- 4) perform a radical operation on the maxillary sinus

35. THE MOST COMMON PATH OF INFECTION DURING INTRACRANIAL COMPLICATION OF ACUTE SINUSITIS IS

- 1) contact
- 2) hematogenous
- 3) lymphogenous
- 4) mixed

36. A SIGN OF PURULENT INFLAMMATION OF THE SPHENOID SINUS AND POSTERIOR CELLS OF THE ETHMOID LABYRINTH IS THE PRESENCE OF PUS IN THE NASAL CANAL

- 1) general
- 2) average
- 3) bottom
- 4) top

37. SYMPTOM OF ACUTE SINUSITIS IS

- 1) cocasmia
- 2) hyperosmia
- 3) hyposmia
- 4) smoothness of the nasolabial fold

38. TYPICAL SYMPTOM OF ACUTE ETHMOIDITIS IS

- 1) recurrent nosebleeds
- 2) impaired sense of smell
- 3) mucous discharge from the nose
- 4) violation of the timbre of the voice

39. INFLAMMATION OF THE PARANASAL SINUSES IS DEFINED IN HEMISINUITIS

- 1) all
- 2) one
- 3) several

4) all on one side

40. REASON FOR THE DEVELOPMENT OF PNEUMOCELE IS

- 1) increase in the virulence of the microflora of the paranasal sinuses
- 2) traumatic damage to the paranasal sinuses
- 3) closure of the natural openings of the paranasal sinuses
- 4) decrease in local immunological reactivity.

41. RADICULAR CYSTS OF THE MAXILLARY SINUS ARE TREATED WITH

- 1) physiotherapy treatment
- 2) micromaxillary
- 3) puncture of the maxillary sinus
- 4) radical operation according to Caldwell - Luke

42. RHINOPHONIA IS NOTICED IN

- 1) acute rhinitis
- 2) catarrhal pharyngitis
- 3) hyperkeratosis of the pharynx
- 4) acute laryngitis

43. TO CLARIFY THE DIAGNOSIS A PATIENT WITH LESION OF THE SPHENOID SINUS MUST DO

- 1) radiography of the base of the skull in a lateral projection
- 2) RKT
- 3) MRI
- 4) CT + MRI

44. RHINOGENIC ABSCESES OF THE BRAIN ARE MOSTLY LOCALISED IN

- 1) temporal part
- 2) parietal part
- 3) occipital part
- 4) frontal part

45. VOMITING IN BRAIN ABSCESES IS OCCURS MOSTLY

- 1) while eating
- 2) after eating
- 3) at the height of the headache
- 4) during physical activity

46. CHANGES IN THE PSYCHE IN THE FORM OF INADEQUATE ACTIONS, UNREASONED EUPHORIA ARE CHARACTERISTIC FOR

- 1) abscess of the cerebellum
- 2) abscess of the frontal lobe of the brain
- 3) abscess of the temporal lobe of the brain
- 4) leptomeningitis

47. RHINOGENIC INTRACRANIAL COMPLICATIONS APPEAR AS A COMPLICATION OF

- 1) sinusitis
- 2) frontitis
- 3) ethmoid
- 4) sphenoid

Tests on: «Diseases of the nose and paranasal sinuses: deviated septum, furuncle, acute and chronic rhinitis, polyposis rhinosinusitis, rhinogenic complications»

№	ANSWER	№	ANSWER	№	ANSWER	№	ANSWER	№	ANSWER
1	2	12	3	23	1	34	3	45	3
2	1	13	1	24	2	35	1	46	2
3	3	14	1	25	3	36	4	47	2
4	1	15	3	26	3	37	3		
5	3	16	3	27	3	38	2		
6	1	17	2	28	2	39	4		
7	4	18	4	29	2	40	3		
8	2	19	1	30	3	41	4		
9	3	20	3	31	1	42	1		
10	2	21	2	32	4	43	4		
11	3	22	2	33	2	44	4		

Case № 1

Patient Yu was admitted to the ENT clinic. 18 years old, complaining of headache, runny nose, swelling of the right half of the face.

From the anamnesis it was found out that he had been suffering from a runny nose for three months. For the last two weeks a feverish state (temperature up to 39.5°C and chills), malaise and swelling of the eyelids on the right side have been noted.

Objectively: the eyelids, especially the upper one on the right, are sharply infiltrated, the skin is hyperemic. The eyeball is rejected from top to bottom and outwards. There is exophthalmos. An accumulation of pus was found in the middle nasal passage on the right. The mucous membrane is edematous.

On the radiograph the entire right orbit, right frontal, and maxillary sinuses and anterior cells of the ethmoid labyrinth are darkened. Puncture of the right maxillary sinus resulted in pus.

What is the presumptive diagnosis? Assign a plan for examination and treatment of the patient.

Case № 2

Patient N., 19 was admitted to the ENT clinic with complaints of headache, chills, vomiting, difficulty in nasal breathing, purulent discharge from the left half of the nose. Temperature up to 37.6c. From the anamnesis it was found out that he has been suffering from a persistent runny nose for a month, the beginning of which he associates with hypothermia.

Objectively: the patient is lethargic, refuses to eat, makes contact poorly. There is a weakening of the muscular-articular, tactile, pain, temperature sensitivity of the right half of the body, hemiplegia on the right, motor aphasia.

Fundus of the eye: congestive nipples of the optic disc, more on the left. The mucous membrane of the left half of the nose is hyperemic, edematous, there is an abundant amount of pus in the middle nasal passage, the middle and lower shells are in contact with the nasal septum. On the survey radiograph of the paranasal sinuses, there is a decrease in pneumatization of the left frontal sinus, the cells of the ethmoid labyrinth on the left are not differentiated.

Blood test: erythrocytes - 4,300,000, hemoglobin - p.8g%, leukocytes - 12,800, stab -1%. Segmented - 69%, monocytes - 5%. Eosinophils - 6%, lymphocytes - 19%, roe - 52 mm/hour.

Make a diagnosis. Design a treatment plan for the patient.

Case № 3

The patient complains of nasal congestion, watery discharge from the nasal passages, sneezing, lacrimation. An increase in body temperature, purulent discharge from the nasal passages is not noted. Considers himself ill for 2 weeks. In the last 4-5 years, similar phenomena have been observed annually, usually in May-June.

Objectively: the turbinates are edematous, moderately hyperemic, there is a watery discharge in the nasal passages. The conjunctiva is hyperemic, there is pronounced lacrimation.

Diagnosis? Methods of treatment and prevention.

Case № 4

A 23-year-old patient came to the ENT clinic with complaints of lack of nasal breathing, pain in the nose for four days, high temperature up to 38.9 C in the evenings. A week ago, according to the patient, a nose injury occurred. There was no bleeding. A day later it became worse to breathe through the nose. Didn't see the doctors.

On examination there is swelling of the skin of the nose, sharp pain on palpation of the external nose. Nasal breathing is absent.

With anterior rhinoscopy the mucous membrane is sharply hyperemic, the lumen of the nasal passages is not determined, fluctuation when probing the area of the nasal septum.

Make a diagnosis and prescribe treatment.

Case № 5

The patient complains of nasal congestion, sneezing, lacrimation, watery discharge from both halves of the nose. The temperature is normal. Sick for 2 weeks. A similar phenomenon happened last year in the same month (August).

Objectively: the turbinates are edematous, pale gray in color, there is watery discharge in the nasal passages. The conjunctive of the eyes is hyperemic, there is pronounced lacrimation.

Diagnosis? Methods of treatment and prevention?

Case № 6

Examination of a patient with a nasal furuncle revealed exophthalmos, chemosis, paresis of the abducens nerve, and pronounced congestion of the optic nerve papilla on the left. There are chills in anamnesis and high fever.

Make a diagnosis, prescribe treatment.

Case № 7

After an acute rhinitis the patient developed: swelling, redness, soreness of the skin of the nose, more on the left. The pain radiates to the teeth, the temple of the RT is the region of the left orbit. The temperature rose to 38°C, there was a feeling of chilling.

Objectively: a limited swelling of a bright red color with a pustule in the center on the wing of the nose on the left.

What is the diagnosis? How to treat the patient?

Case № 8

In a 16-year-old patient, a day after he squeezed out a purulent core of a boil on the skin of the nose on the left, the general condition worsened. There appeared: severe chills, profuse sweating, hectic temperature (with drops up to 4 ° C during headache). Locally - furuncle of

the left wing of the nose, swelling and infiltration of the soft tissues of the cheek and lip on the left.

What complication can be suspected? What should be the doctor's tactics?

Case № 9

The patient complains of a feeling of stuffiness in the nasal cavity, watery discharge from the nose, sneezing, watery eyes, sore throat, temperature of 37.3 ° C. These symptoms appeared 3 days ago after hypothermia.

At rhinoscopy: the mucous membrane of the nasal cavity is hyperemic, infiltrated, abundant mucous discharge in the nasal passages. Nasal breathing is difficult, the sense of smell is reduced. Pain in the nasal sinuses is not defined. Pharyngoscopy shows hyperemia of the mucous membrane of the posterior pharyngeal wall.

What is the diagnosis? How to treat the patient?

Case № 10

A 19-year-old patient was admitted to the ENT clinic with complaints of severe headache, purulent runny nose, difficulty in nasal breathing. The disease began 5 days ago with pain in the area of the superciliary arches and the right maxillary sinus, temperature up to 38°C. When pressed, pain is noted in the projection of the frontal and maxillary sinuses on both sides.

During rhinoscopy the mucous membrane of the nasal cavity is sharply hyperemic, infiltrated, creamy pus in the middle nasal passages on both sides.

On the radiograph of the paranasal sinuses a homogeneous darkening of the frontal and maxillary sinuses is determined.

What is the diagnosis? How to treat the sick?

Case № 11

The patient complains of sudden attacks of nasal congestion with copious mucous-watery discharge, sneezing, coughing, headache. Attacks occur after exposure to cold. Sick for about three years.

Rhinoscopy: the mucosa of the inferior turbinates is swollen, bluish, in places bluish-white spots are visible. After lubrication with a 1% solution of adrenaline, the turbinates are sharply reduced in volume.

What is the diagnosis? What are the principles of treatment?

Case № 12

A 34-year-old patient developed purulent right-sided sinusitis after influenza. Treatment does not work. Temperature 39.4°C, weakness, malaise, headache intensified.

Objectively: the patient is weak, sweating of the skin. Exophthalmos and tissue infiltration of the upper eyelid on the right is determined. The mobility of the right eyeball is limited.

At rhinoscopy: the mucous membrane of the nasal cavity is hyperemic, infiltrated, purulent discharge in the middle nasal passage on the right. Soreness on palpation of the superciliary region on the same side.

What complication of sinusitis can you think of? What additional examination is needed? What is the doctor's strategy?

Case№ 13

A 16-year-old patient was delivered to the ENT clinic because of nosebleeds. Such bleeding, more or less profuse, often occurs in the premenstrual period. On examination the skin and visible mucous membranes are pale, the pulse is rhythmic -88 beats per minute.

At rhinoscopy: bloody clots in the nasal passages, on the left in the anteroinferior section of the septum, the vessels are sharply dilated. Other ENT organs without pathology.

What is the diagnosis? What is the best way to deal with the patient in this case?

Case№ 14

A 15-year-old patient complained of lack of nasal breathing and hearing loss in the right ear, frequent nosebleeds from the right half of the nose. Sick for more than two years.

Anterior rhinoscopy: the mucous membrane of the nasal cavity is swollen, on the right in the posterior sections a bright red formation is determined, which is not associated with the wall of the nasal cavity. Nasal breathing is absent.

Posterior rhinoscopy: the nasopharyngeal cavity is occupied by a smooth formation that almost completely covers the choana. On palpation: the consistency is dense. On the radiograph of the paranasal sinuses the veil of the right half of the nose and the displacement of the lateral wall outwards are determined. On the side picture the shadow of the soft tissue formation has gone beyond the nasopharyngeal cavity, the main sinus and is being introduced into the nasal cavity.

What is the diagnosis? Are additional research methods needed? How to treat the patient?

Case № 15

The patient complains of constant pain in the forehead. The pain appeared 4 months ago.

Objectively: the patient's condition is satisfactory, there are no deviations from the norm in the internal organs.

When examining the ENT organs, no pathology was found. On the radiograph of the paranasal sinuses, there is a rounded shadow of bone density with smooth edges in the region of the left frontal sinus. In the lateral image the shadow reaches the level of the cerebral wall of the frontal sinus.

What is the diagnosis? How to treat the patient?

Case № 16

The patient complains of periodic nasal congestion, watery discharge from the nasal passages, sneezing. These symptoms are aggravated during the cleaning of the apartment. In the nasal secretion and in the peripheral blood there is an increased content of eosinophils.

What is the diagnosis? How to treat the patient?

Homework: **diseases of the pharynx: acute and chronic pharyngitis, pharyngomycosis, tonsillitis, diphtheria, paratonsillar abscess, pharyngeal abscess, chronic tonsillitis, hypertrophy of the palatine and pharyngeal tonsils.**

Lesson 9

Topic. DISEASES OF THE PHARYNX: ACUTE AND CHRONIC PHARYNGITIS, PHARYNGOMYCOSIS, ANGINA, DIPHTHERIA, PARATONZILLARY ABSCESS, ORGANIC ABSCESS, CHRONIC TONSILLITIS,

HYPERTROPHY OF THE PALATINE AND PHARYNGEAL TONSILS

Relevance. Diseases of the pharynx are very common in clinical practice and can be diagnosed by doctors of any specialty. Tonsillar pathology is a general medical problem that is of interest not only to otorhinolaryngologists, but also therapists, infectious disease specialists, pediatricians, rheumatologists, etc. Its social significance is determined by the high incidence of tonsillitis and chronic tonsillitis, especially among children and adults of the most able-bodied age. Tonsillitis can cause severe complications, contribute to the onset and worsening of many diseases, including those of the cardiovascular system, which give the highest overall mortality.

Target. After studying the topic, the student must:

have an idea about the etiology and pathogenesis of diseases of the pharynx, methods of their surgical treatment;

know the classification of tonsillitis, the main clinical symptoms of acute and chronic tonsillitis, their complications and related diseases, the principles of conservative treatment, prevention and medical examination, clinical manifestations of other diseases of the pharynx;

be able to perform pharyngoscopy, correctly diagnose a disease of the pharynx, conduct a differential diagnosis of acute primary tonsillitis with lesions of the tonsils in infectious diseases and pathology of the blood system, timely identify complications, choose therapeutic tactics, and perform some diagnostic and therapeutic manipulations.

Location of the lesson. ENT - an office in a polyclinic.

Equipment. Frontal reflector, set of examination instruments, pharyngeal cotton holder, sterile swab for taking a swab from the oropharynx, insufflator, spray gun for irrigating the pharynx, cannula for washing palatine tonsil lacunae, galvanocautery and cryoapplicators, scalpel for opening paratonsillar and pharyngeal abscesses, nasal forceps, tonsillotomy, adenotomy, conchotomy.

Table 22

SELF-STUDY ASSIGNMENT FOR THE PRACTICAL CLASS

Questions	Objectives	Self –check tasks	References
1. Tonsillitis classification	To know for using in diagnosis	Draw a classification scheme according to I. B. Soldatov	1) Palchun V.T., Magamedov M.M., Luchikhin L.A.

<p>2. Acute primary tonsillitis: 1) forms 2) clinical manifestations 3) differential diagnosis with secondary tonsillitis 4) complications 5) treatment</p>	<p>To be able to correctly diagnose, prescribe treatment, prevent complications and damage to other organs and systems</p>	<p>Compile a differential diagnostic table of lacunar tonsillitis and diphtheria of the pharynx. List the complex of therapeutic measures for acute primary tonsillitis. Draw a pharyngoscopic picture with a right-sided paratonsillar abscess</p>	<p>Otorhinolaryngology textbook.-2007-250-324s. 2) Burbom Hans, Kashke Oliver, Navka Tadeus Diseases of the ear, throat and nose. - MEDpress-Inform. - 2016 - 776 p.</p>
<p>3. Chronic tonsillitis: 1) clinical forms 2) local signs 3) treatment methods 4) prevention and medical examination</p>	<p>To know how to correctly formulate the diagnosis of chronic tonsillitis in accordance with the classification of I. B. Soldatov, and choose the appropriate treatment tactics</p>	<p>Name. List the diseases associated with chronic tonsillitis</p>	<p>1) Palchun V.T. Luchikhin L.A., Magomedov M.M.: A guide to practical otorhinolaryngology. MIA. - 2011 - 565 p. Palchun V.T. Luchikhin L.A., Magomedov M.M.- MIA. -2011- 344 p. 2) Andrey Ivanovich Kryukov: Inflammatory diseases of the pharynx. - GEOTAR-Media.- 2014.- 102-285 p.</p>
<p>4. Pharyngitis 1) clinical forms 2) treatment methods</p>	<p>Know how to correctly diagnose and prescribe treatment</p>	<p>Name. Write out a prescription for gargling with atrophic pharyngitis</p>	
<p>5. Retropharyngeal abscess</p>	<p>Know how to correctly diagnose and prescribe treatment</p>	<p>Name at what age the retropharyngeal abscess is most common, draw a pharyngoscope picture with the designation of localization process</p>	

6. Hypertrophy of the pharyngeal tonsil (adenoids)		List diagnostic methods. Draw a picture of the nasopharynx and indicate the localization of the adenoids	1) Tsvetkov E.A.: Adenotonsillitis and their complications in children. - St. Petersburg: ELBI-SPb. 2003 - 124 p. 2) Luchikhin L.A.: Otorhinolaryngology. Textbook. Approved by the Ministry of Education of the Russian Federation.-GEOTAR-Media.- 2016 - 584 p.
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Table 23

LESSON PLAN (240 min.)

№ / №	Activity algorithm		Indicative signs		
	Consecutive actions	Means of action	Reason	Control criteria	Time (min.)
1	Management of patients	Outpatient reception of patients: 1) with diseases of the pharynx 2) with other diseases of the ENT organs	Evaluation of the identified changes, conducting differential diagnosis and choice of treatment tactics. Use a case history chart	Confirm the ability to examine the patient, analyze and synthesize received data	120
2	Report on independent work based on the results of outpatients management		Develop clinical thinking skills	Students report the results of patients management, agree on the diagnosis and treatment, draw up medical documentation (outpatient cards, referrals, prescriptions)	60
3	Performing diagnostic and therapeutic procedures		Development and training of skills	Preparation of pharyngeal cotton holders and lubrication of the pharynx,	60

				insufflation of medicinal substances, taking a swab from the pharynx, washing the lacunae of the palatine tonsils	
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Tests on: «Diseases of the pharynx: acute and chronic pharyngitis, pharyngomycosis, tonsillitis, diphtheria, paratonsillar abscess, pharyngeal abscess, chronic tonsillitis, hypertrophy of the palatine and pharyngeal tonsils».

1. CHRONIC PHARYNGITIS IS CHARACTERISED BY

- 1) sore throat
- 2) difficulty swallowing
- 3) throat irritation
- 4) cough with sputum

2. CHARACTERISTIC CHANGES OF THE MUCOUS MEMBRANE IN CHRONIC ATROPHIC PHARYNGITIS ARE

- 1) bright hyperemia
- 2) dryness
- 3) puffiness
- 4) vascular injection

3. ANGINAS ARE MORE COMMON AFTER THE AGE

- 1) up to 5 years
- 2) 5 to 30 years
- 3) 30 to 50 years old
- 4) from 50 and older

4. A PLAQUE ON THE TONSILS SPREADS OUTSIDE IT DURING

- 1) diphtheria of the pharynx
- 2) lacunar angina
- 3) ulcerative necrotic angina
- 4) catarrhal angina

5. CAUSE OF IMPAIRMENT OF THE SOFT PALATE MOBILITY IN DIPHThERIA OF THE PHARYNGEA

- 1) swelling of the soft tissues of the pharynx
- 2) toxic paresis of the muscles of the palatine curtain
- 3) paresis of the glossopharyngeal nerve

6. NECROTIC CHANGES IN THE TONSILS HAPPEN IN

- 1) agranulocytosis
- 2) pharyngitis
- 3) flu
- 4) catarrhal angina

7. OPEN RHYNOALIA HAPPENS IN

- 1) cleft palate
- 2) retropharyngeal abscess
- 3) chronic tonsillitis
- 4) laryngitis

8. THE CAUSES OF SIMANOVSKY- PLAUT - VINCENT ANGINA ARE

- 1) yeast-like fungi and streptococci
- 2) fusiform rod and oral spirochete
- 3) pale treponema and E. coli
- 4) Escherichia coli and Staphylococcus aureus

9. THE CAUSE OF ODONTOGENIC PARATONSILLARY ABSCESS CAN BE

- 1) the last molar of the upper jaw
- 2) the last molar of the lower jaw
- 3) premolar of the upper jaw
- 4) mandibular premolar

10. ACCORDING TO ITS LOCALIZATION PARATONSILLARY ABSCESS CAN BE

- 1) lateral, lower, posterior, anterior
- 2) medial, lateral, anterior
- 3) lower, medial, lateral
- 4) posterior, lateral, medial, anterior

11. PARATONSILLITIS IS CAUSED BY

- 1) chronic pharyngitis
- 2) acute pharyngitis
- 3) angina
- 4) adenoiditis

12. CONE-SHAPED YELLOW-WHITE FORMATIONS ON THE PALATINE TONSILS AND ON THE TONGUE ARE A SIGN OF

- 1) follicular tonsillitis
- 2) lacunar tonsillitis
- 3) pharyngomycosis
- 4) catarrhal angina

13. PINK GRANULES ON THE BACK OF THE PHARYNX ARE OBSERVED IN

- 1) catarrhal pharyngitis
- 2) subatrophic pharyngitis
- 3) atrophic pharyngitis
- 4) granulosa pharyngitis

14. PARATONSILLARY ABSCESS IS DIFFERENT FROM ACUTE PURULENT PERIOSTITIS OF THE LOWER JAW IN

- 1) pharyngoscopic picture
- 2) the presence of trismus of chewing muscles
- 3) pain in the submandibular and parotid regions
- 4) type of fever

15. REMOVAL OF THE PHARYNGEAL TONSILS IS CALLED

- 1) adenotomy
- 2) tonsillectomy
- 3) tonsillotomy

16. ANGINA IS MAINLY CAUSED BY

- 1) green streptococcus
- 2) Staphylococcus aureus
- 3) beta-hemolytic streptococcus group A
- 4) adenoviruses

17. DIAGNOSIS OF MONOCYTARY ANGINA IS ESTABLISHED AFTER EXAMINATION

- 1) bacteriological
- 2) blood
- 3) cytological

18. RETROPHARYNGIAL ABSCESS DEVELOPS MOSTLY WITH

- 1) children's
- 2) youthful
- 3) elderly
- 4) age does not matter

19. A PATIENT WITH ANGINA IF NECESSARY IS HOSPITALIZED TO THE DEPARTMENT OF THE HOSPITAL

- 1) infectious
- 2) otorhinolaryngological
- 3) therapeutic
- 4) surgical

20. IN THE TOXIC-ALLERGIC FORM OF THE II DEGREE OF CHRONIC TONSILLITIS IS CARRIED OUT

- 1) washing the lacunae of the palatine tonsils
- 2) tonsillotomy
- 3) tonsillectomy
- 4) physiotherapy treatment

21. EXAMINATION OF SMABS FROM THE THROAT FOR BACILLA LEFLERA IS REQUIRED FOR DIAGNOSIS OF

- 1) ozena
- 2) diphtheria
- 3) scleromas
- 4) syphilis

22. IN PARATONSILLARY ABSCESS _____ IS CARRIED OUT

- 1) diagnostic puncture
- 2) opening of the abscess through the fossa supratonsillaris
- 3) dissection of the lacunae of the tonsils
- 4) cryotherapy

23. THE MOST EFFECTIVE METHOD OF TREATMENT OF PARATONSILLARY ABSCESS IS

- 1) diagnostic puncture
- 2) opening of the abscess through the anterior palatine arch
- 3) opening of the abscess through the fossa supratonsillaris
- 4) abscess tonsillectomy

24. A CAUSE OF RECURRENT ADENOIDS IS

- 1) technical errors when performing adenotomy
- 2) flu
- 3) angina
- 4) pharyngitis

25. ULCER-NECROTIC ANGINA IS CHARACTERISED BY

- 1) dirty gray plaque on the tonsil
- 2) grayish-yellow plaque on the tonsil
- 3) lack of plaque on the tonsil
- 4) islands of curdled white masses on the tonsil

26. DIPHTHERIA OF THE PHARYNX IS CHARACTERISED BY

- 1) plaque which does not extend beyond the tonsil
- 2) lack of plaque
- 3) plaque which is easily removed
- 4) raids on the tonsils, arches, tongue

27. PATIENTS WITH PARATONSILLARY ABSCESS ARE HOSPITALIZED IN THE _____ DEPARTMENT OF THE HOSPITAL

- 1) therapeutic

- 2) infectious
- 3) otorhinolaryngological
- 4) surgical

28. DENSE DIRTY GRAY, DIFFICULTLY REMOVABLE FILMS ON THE PALATINE TONSILS, SOFT PALATE ARE CHARACTERISTIC FOR

- 1) lacunar tonsillitis
- 2) diphtheria of the pharynx
- 3) ulcerative necrotic tonsillitis
- 4) angina with scarlet fever

29. SOFT PALATE PARALYSIS IS ACCOMPANIED BY

- 1) hoarseness
- 2) closed nasality
- 3) open nasality
- 4) difficulty in nasal breathing

30. ORGANIC ABSCESES OCCUR MORE OFTEN AFTER THE AGE OF

- 1) up to 3 years of life
- 2) from 3 to 10 years
- 3) 10 to 20 years
- 4) from 20 years and older

31. CHARACTERISTIC OBJECTIVE SIGN OF CHRONIC ADENOIDITIS IS

- 1) open nasality
- 2) serous discharge from the nose
- 3) smoothness of the nasolabial fold
- 4) gothic palate

32. MEDIASTENITIS MAY BE COMPLICATED BY

- 1) acute tonsillitis
- 2) paratonsillitis
- 3) retropharyngeal abscess
- 4) pharyngitis

33. TREATMENT OF PARATONSILLARY ABSCESS IS

- 1) physiotherapy
- 2) hyperbaric oxygenation
- 3) surgical
- 4) medication

34. YELLOW "MILLING" POINTS ON THE SURFACE OF THE TONSILS ARE OBSERVED IN

- 1) catarrhal angina
- 2) follicular angina
- 3) lacunar angina
- 4) herpetic sore throat

35. RHINOLALIA IS OBSERVED IN

- 1) laryngitis
- 2) granulosa pharyngitis
- 3) diphtheria of the nose and pharynx
- 4) atrophic pharyngitis

36. ADENOIDS ARE HYPERTROPHY OF _____ TONSILS

- 1) palatine
- 2) pipe
- 3) lingual
- 4) pharyngeal

37. PATIENTS WITH DIPHTHERIA OR WITH SUSPECT OF DIPHTHERIA OF THE THROATS SHOULD BE HOSPITALIZED IN THE _____ DEPARTMENT OF THE HOSPITAL

- 1) otorhinolaryngological
- 2) intensive care
- 3) infectious
- 4) therapeutic

38. A SIGN OF DIPHTHERIA PLAQUE IN THE THROAT IS

- 1) dirty gray color
- 2) yellow-green color
- 3) loose consistency
- 4) easily removed from the surface of the mucous membrane

39. HYPERTROPHIC PHARYNGITIS IS CHARACTERISED BY

- 1) hyperemia of the mucous membrane of the posterior pharyngeal wall, pronounced vascular pattern
- 2) hypertrophy of the mucous membrane of the posterior pharyngeal wall and lateral ridges
- 3) thinning and dryness of the mucous membrane of the posterior pharyngeal wall
- 4) hypertrophy of the palatine tonsils, hyperemia of the palatine arches

40. ANGINA VULGARIS INCLUDES

- 1) monocytic
- 2) follicular
- 3) agranulocytic
- 4) diphtheria

41. DIPHTHERIA IS DIAGNOSED ON THE BASIS OF

- 1) blood test
- 2) bacteriological research
- 3) Serological study
- 4) cytological examination

42. WHEN OPENING A PARATONZILLARY ABSCESS _____ IS NECESSARY

- 1) injection of an abscess with antibiotics
- 2) washing the cavity of the abscess
- 3) abscess puncture
- 4) dilution of the edges of the abscess

43. ACUTE ADENOIDITIS IS

- 1) hypertrophy of the pharyngeal tonsil
- 2) angina of the pharyngeal tonsil
- 3) abscess of the pharyngeal tonsil

44. PARATONZILLITIS IS CAUSED BY

- 1) pharyngitis
- 2) laryngitis
- 3) angina
- 4) rhinitis

45. AGRANULOCYTIC ANGINA IS CHARACTERISED BY

- 1) hyperemia and a sharp increase in palatine tonsils
- 2) swelling of the mucous membrane of the larynx
- 3) raids on the palatine tonsils
- 4) necrosis and deep ulcers on the palatine tonsils and other parts of the pharynx

46. TONSILLOTOMY IS CARRIED OUT FOR HYPERTROPHY OF THE TONSILS

- 1) second degree in combination with chronic tonsillitis
- 2) second degree without chronic tonsillitis
- 3) third degree without chronic tonsillitis

4) third degree in combination with chronic tonsillitis

47. HEARING LOSS IN ACUTE ADENOIDITIS IS CAUSED BY

- 1) violation of nasal breathing
- 2) intoxication of receptor and ganglion formations of the sound analyzer
- 3) closing the mouths of the auditory tubes

48. CHOKING IS COMMON IN _____ ANGINA

- 1) laryngeal
- 2) follicular
- 3) catarrhal
- 4) lacunar

Keys to the topic: "Diseases of the pharynx: acute and chronic pharyngitis, pharyngomycosis, tonsillitis, diphtheria, paratonsillar abscess, pharyngeal abscess, chronic tonsillitis, hypertrophy of the palatine and pharyngeal tonsils."

№	ANSWER	№	ANSWER	№	ANSWER	№	ANSWER	№	ANSWER
1	3	11	3	21	2	31	4	41	2
2	2	12	3	22	2	32	3	42	4
3	2	13	4	23	4	33	3	43	2
4	1	14	1	24	1	34	2	44	3
5	2	15	1	25	2	35	3	45	4
6	1	16	3	26	4	36	4	46	3
7	1	17	2	27	3	37	3	47	3
8	2	18	1	28	2	38	1	48	1
9	2	19	1	29	3	39	2		
10	I	20	3	30	1	40	2		

Case № 1

Patient A., 24 years old, came to the clinic with complaints of sore throat, general weakness, malaise, bad breath, fever up to 39°C. He had been ill for two days and associated the disease with exposure to cold.

Objectively: severe hyperemia and swelling of the mucous membrane of the pharynx, palatine tonsils are juicy, edematous, the orifices of the lacunae are covered with a fibrinoid-necrotic film that does not extend beyond the arches. In addition, hyperemia and edema of the mucous membrane of the lingual, pharyngeal tonsils and lymphogranules of the posterior pharyngeal wall are determined.

What is your diagnosis? Prescribe treatment.

Case № 2

Patient K., 19 years old, was taken to the emergency room by ambulance. Complaints of sharp soreness in the throat, shooting pains in the right ear, profuse salivation, bad breath, general weakness, malaise and fever up to 40 °C.

From the anamnesis it was found out that about 10 days ago he had a sore throat, weakness, malaise. The district doctor diagnosed a catarrhal sore throat. The prescribed treatment was taken irregularly. Pain disappeared 5 days after the onset of the disease. However, after 3 days the temperature suddenly increased, sore throat and fever increased rapidly. For two days he refused eating, because of severe pain he did not sleep at night. A history of angina up to 6 - 8 times a year from the age of 7.

Objectively: mouth opening is sharply difficult. Pharyngoscopy: pronounced asymmetry of the pharynx due to infiltration of the soft palate on the right, when touched with a padded jacket, fluctuation is determined. The palatine tonsil on the right is sharply edematous and reaches the uvula, the latter is displaced to the left. On the left the palatine tonsil is not enlarged. Regional lymphadenitis.

Diagnose the case. Prescribe treatment.

Case № 3

Patient P., aged 44, came to the clinic with complaints of a sensation of a foreign body in the throat, periodically there is soreness in the throat. The disease is associated with the removal of the palatine tonsils, which was performed three years ago. Initially, there was dryness, perspiration, and after a year and a half, pain in the throat began to occur periodically, the temperature did not rise.

Objectively: there are hypertrophied lymphogranules on the mucous membrane of the posterior wall of the oropharynx, the lateral ridges are thickened, the palatine tonsils are absent.

Diagnose the case and prescribe treatment.

Case № 4

A 25-year-old patient went to an ENT doctor complaining of sore throat, malaise, bad breath, fever up to 39. Sick for 3 days. The disease is associated with hypothermia.

At pharyngoscopy: severe hyperemia and swelling of the palatine tonsils, the mouths of the lacunae are covered with white fibrinous plaque, which does not extend beyond the tonsils and is easily removed.

Diagnose the case. Prescribe treatment.

Case № 5

An 18-year-old patient was taken to the ENT department by an ambulance. Complaints of sore throat, aggravated by swallowing and trying to open the mouth, profuse salivation, bad breath, general weakness, fever up to 40°C.

Objectively: opening of the mouth is difficult, the head is tilted to the right, asymmetry of the pharynx due to infiltration of the soft palate on the right, the right palatine tonsil is edematous and reaches the uvula displaced to the left. On the left, the palatine tonsil is not enlarged, the maxillary lymph nodes are enlarged, painful on palpation, more on the right.

Make a diagnosis. Prescribe treatment.

Case № 6

A 22-year-old patient came to the clinic with complaints of sore throat, general weakness, pain in the joints, near the heart, fever up to 38°C. Sick for 4 days. The disease is associated with hypothermia.

Objectively: the palatine tonsils are hyperemic, edematous, with a large number of yellowish dots the size of millet grain (a picture of the starry sky), the maxillary lymph nodes are significantly enlarged and painful on palpation.

Make a diagnosis. Prescribe treatment.

Case № 7

A 25-year-old patient consulted an otorhinolaryngologist with complaints of tonsillitis, recurring 1-2 times a year. From the anamnesis it was found out that the patient suffers from rheumatism. Three years ago, a heart disease was diagnosed - mitral valve insufficiency.

At pharyngoscopy: hyperemia and ridge-like thickening of the edges of the palatine arches, loose tonsils, caseous plugs in the lacunae, the maxillary lymph nodes are not palpable.

Make a diagnosis, prescribe treatment.

Case № 8

Patient E, 19 years old, came to the clinic with complaints of frequently recurring tonsillitis up to 3-4 times a year, which occur at any time of the year after exposing the pharynx to cold. At the age of 7 he suffered from angina, after which there was a rheumatic attack. Six months later, the rheumatic attack recurred and a heart defect developed. Due to

rheumatism he was repeatedly in hospitals. The patient is given seasonal bicillin-drug prevention therapy. Conservative treatment for chronic tonsillitis was not carried out. Objectively: the palatine tonsils are atrophic, dense, cicatricially soldered to the arches. The mouths of the lacunae are narrow, the lacunae are convoluted, with a small amount of purulent plugs. Festering follicles are visible through the mucous membrane. Regional lymphadenitis. Blood and urine tests are normal. Make a diagnosis and prescribe treatment.

Case № 9

A 22-year-old patient complains of discomfort in the throat: perspiration, burning, which appeared after she had eaten a large amount of ice cream the day before. On pharyngoscopy a bright hyperemia of the mucous membrane of the posterior pharyngeal wall and its moderate infiltration are determined. Other ENT organs without pathological changes.

What is the diagnosis? How to treat the patient?

Case № 10

A 17-year-old girl complains of severe sore throat aggravated by swallowing, fever up to 38 C, malaise, headache, lack of appetite.

On pharyngoscopy white plaques on the hyperemic mucous membrane are easily removed. Submandibular lymph nodes are enlarged, painful on palpation.

What is the diagnosis? How to treat the sick?

Case № 11

A 16-year-old patient was admitted to the ENT clinic with complaints of severe sore throat on the right side, profuse salivation, difficulty swallowing, it was difficult to breathe at night. A few days ago he had a sore throat.

Objectively: the temperature is 39 C. The head is tilted to the right, the mouth is half open, saliva flows out. With pharyngoscopy: the mouth opens 1/3 due to trismus of masticatory muscles. A sharp hyperemia and infiltration of the right half of the soft palate is observed with a displacement of the uvula to the healthy side. Soft tissue infiltration extends to the left lateral wall of the pharynx and descends down to the pyriform sinus. Submandibular lymph nodes are enlarged, painful on palpation. The entire right half of the neck is occupied by a diffuse infiltrate of woody density. What complication of angina can be assumed? What is the medical strategy?

Case № 12

With underlying long-term antibiotic therapy a weakened patient with pneumonia had a fever, sore throat, hyperemia of the mucous membrane of the pharynx, raids on the tonsils and arches, and the side walls of the pharynx. What is the diagnosis? How to treat the patient?

Case № 13

A 16-year-old patient was delivered to the ENT department with complaints of general malaise, headache, sore throat. Sick for the second day. A week ago, the patient was in contact with a child who was hospitalized in the infectious diseases department.

The patient's condition is moderate, weakened. Sits up in bed with difficulty. The skin is pale, moist, the temperature is 38C. The mucous membrane of the pharynx is hyperemic with a bluish tint, the tonsils and arches are covered with a dirty gray coating, which is

difficult to remove, the underlying tissue bleeds. Smell from the mouth. In the submandibular region, swelling of the soft tissues and surrounding regional lymph nodes, which are not enlarged, is determined.

What is the expected diagnosis? What should be done to clarify the diagnosis? What is the doctor's strategy?

Case № 14

A 24-year-old girl complains of sore throat, malaise, fever. I fell ill three days ago after a few days of mild malaise.

Objectively: the state of moderate severity, the skin is moist, the temperature is 40 C. Hyperemia of the pharyngeal mucosa. Tonsils covered with white coating. An increase in the supramandibular upper cervical, axillary and inguinal lymph nodes is determined.

In blood tests: leukocytes $12 \times 10^9/l$, eosinophils - 0%, basophils 1%, stab neutrophils - 0%, segmented neutrophils - 23%, lymphocytes - 50%, monocytes - 26%.

What is the diagnosis? How to treat the patient?

Case № 15

A 19-year-old patient complains of sore throat when swallowing, headache, high fever up to 39°C, has been ill for a week. The disease was preceded by malaise for 4-5 days.

The general condition is satisfactory. Increased submandibular, maxillary, axillary and inguinal lymph nodes. The liver protrudes from under the costal arch by two fingers.

Pharyngoscopy: hyperemia of the mucous membrane of the pharynx, purulent follicles on the surface of the tonsils. Swallowing is painless.

Blood test: erythrocytes $3.5 \times 10^{12/l}$, leukocytes $20 \times 10^9/l$, lymphocytes 50%, monocytes - 40%.

What is the diagnosis? How to treat the patient?

Case № 16

The patient complains of a slight sore throat on the left, bad breath.

Objectively: the general condition is not disturbed, the body temperature is 36.6° C. No changes were found in the internal organs.

At pharyngoscopy: at the upper pole of the left palatine tonsil - a grayish plaque, after the removal of which a rather deep ulcer with an uneven bottom was found. There is no pathology from other ENT organs.

What is the expected diagnosis? What examination is needed to clarify the diagnosis?

Case № 17

A 25-year-old patient complains of frequent tonsillitis accompanied by high fever, pain in the area of the heart, joints, prolonged subfebrile condition. Has been suffering from angina since childhood. History of paratonsillitis.

On pharyngoscopy: tonsils of I degree. Infringed in the arches, liquid pus in the gaps. The tonsils are soldered to the surrounding tissues, the anterior palatine arches are stagnantly hyperemic. Submandibular lymph nodes are enlarged, painless.

What is the diagnosis? How to treat the patient?

Case № 18

A 23-year-old patient had a tooth removed at 12 noon under local novocaine anesthesia. 20 minutes after the introduction of novocaine appeared profuse salivation and difficulty in

swallowing and breathing.

Delivered to the ENT department. What is the expected diagnosis?

Case № 19

A 30-year-old patient complains of sore throat when swallowing, weakness. Sick for two days.

On examination the temperature is 37.6 C, the tonsil arches are pink, the tonsils do not protrude from the arches, hyperemia of the posterior pharyngeal wall, submandibular lymph nodes are loose, painless.

What is the diagnosis? How to treat the patient?

Case № 20

The patient went to the ENT clinic with complaints of intense headache, difficulty in swallowing, pain in the joints. He fell ill acutely three days ago, after hypothermia.

General condition of moderate severity, skin and visible mucous membranes are dry, pale, pulse 82 beats per minute, tense, rhythmic, temperature 38.6°C.

Pharyngoscopy: the mouth opens freely, the mucous membrane is hyperemic, moderately edematous at the arches, ulcers are determined in the oral cavity, putrid breath, palatine tonsils are covered with a dirty gray necrotic coating, there are de-epithelializations. Gums are bleeding. Clinical blood test shows an increased ESR, a decrease in platelets, reticulocytes and granulocytes.

What is the diagnosis? How to treat the patient?

Case № 21

The patient examined the oral cavity in the mirror and found “plugs” on the palatine tonsils. The otorhinolaryngologist revealed cone-shaped formations of yellow-gray color, rising above the surface of the mucous membrane of the palatine and lingual tonsils. Similar single formations are also determined on the lateral ridges of the pharynx.

What is the diagnosis? Is it possible to surgically treat this disease?

Case № 22

The patient complains of foreign body sensation in the throat, tingling, pain when swallowing saliva. Sick for about a year. Didn't go to the doctor.

On pharyngoscopy multiple semicircular elevations from 1 to 3 mm in diameter are visible on the back of the pharynx, dark red in color. On the mucous membrane of the posterior wall of the pharynx, a viscous transparent secret is determined.

What is the diagnosis? What are the treatments? Is cryotherapy possible for this disease?

Case № 23

A 23-year-old patient had a tonsillectomy five years ago. Currently, he complains of sharp pains when swallowing and sticking his tongue in, shortness of breath with little physical exertion, salivation.

Trismus is determined, submandibular lymphadenitis on both sides, soreness when touching the root of the tongue with a spatula, hyperemia of the entire mucous membrane. On the root of the tongue there are single dot formations of a gray-yellow color. General condition of the patient is of moderate severity, temperature 38.2°C.

What is the diagnosis? What complications are possible for this disease?

Homework: diseases of the larynx: acute and chronic laryngitis, acute laryngotracheitis in children, edema, diphtheria, paresis and paralysis of the muscles of the larynx, acute and chronic stenosis of the larynx.

Lesson 10

Topic: DISEASES OF THE LARYNX: ACUTE AND CHRONIC LARYNGITIS, ACUTE LARYNGOTRACHEITIS IN CHILDREN, EDEMA, DIPHTHERIA, PARESIS AND PARALYSIS OF THE MUSCLES OF THE LARYNX, ACUTE AND CHRONIC STENOSIS OF THE LARYNX

R e l e v a n c e . Acute and chronic diseases of the larynx, occurring with impaired respiratory and vocal functions, are often encountered in clinical practice. The most urgent is the problem of acute laryngotracheitis in children - one of the leading ones not only in pediatric otorhinolaryngology, but also in pediatrics in general, due to the high frequency and severe course of the disease - 99% of acute laryngeal stenosis in young children resulting from laryngotracheitis occur in acute respiratory viral infections (ARVI). Patients with acute stenosis due to various diseases of the larynx require emergency medical care, which should be provided by a doctor of any specialty.

Objectives. After studying the topic, the student must:

have an idea about the causes of acute and chronic diseases of the larynx, the dynamics of respiratory failure in stenosis of the larynx;

know the main clinical symptoms of diseases of the larynx, the course of stenosis of the larynx in childhood, the principles of conservative treatment, indications for intubation and tracheostomy;

be able to perform indirect laryngoscopy, make a diagnosis and conduct a differential diagnosis, determine the stage of laryngeal stenosis, choose the appropriate treatment tactics, perform some medical manipulations, perform tracheostomy if indicated, and in an extreme situation - cricotomy or cricoconicotomy.

Location of the lesson. ENT hospital, specialized laryngitis department, ENT room in the clinic.

Equipment. Forehead reflector, examination instrument set, laryngeal cotton holders, scalpel, syringe, laryngoscope, thermoplastic tubes for intubation, tracheostomy set.

Table 24
SELF-STUDY ASSIGNMENT FOR THE PRACTICAL CLASS

Questions	Objectives	Self –check tasks	References
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1. Acute laryngitis	To know in order to be able to make the correct diagnosis and prescribe adequate treatment	Name the causes and main symptoms. List and write down in the workbook a set of therapeutic measures	1) Luchikhin L. A., Otorhinolaryngology. Textbook. Approved by the Ministry of Education of the Russian Federation.- GEOTAR-Media - 2016. - 584 p. 2) Palchun V.T. Otorhinolaryngology: national guidelines -M. : GEOTAR - Media, 2013 -919 p.
2. Acute laryngotracheitis in children	The same	Draw a laryngoscope picture. List the leading symptoms. Name and write down in the workbook the stages of intensive care for decompensated stenosis. List and write in the workbook the causes.	3) Palchun V.T., Magamedov M.M., Luchikhin L.A. Otorhinolaryngology textbook. 355-404 p.
3. Laryngeal edema	The same	The same	1) Atlas of ENT diseases. 4th edition. Bull T.R. Ed. M.R. Bogomilsky. - 2007. 180-200 p. 2) Palchun V.T. Inflammatory diseases of the larynx and their complications. Management. - Moscow ed. Gr. GEOTAR - Media.
4. Diphtheria of the larynx		List and write down in the workbook the diseases with which differential diagnosis is carried out	

5. Chronic laryngitis		Name the main clinical forms. Draw a laryngoscope picture of one of the forms of limited hypertrophic laryngitis. Write out a prescription for inhalation with atrophic laryngitis	- 2013. - 176 p. 3) Marc Remacle, Hans Edmund Eckel Surgery of the larynx and trachea. - Binom. - 2015. - - 31-193 p
6. Paresis and paralysis		Draw a laryngoscope picture for paralysis of the left recurrent laryngeal nerve and list its causes.	
7. Stenosis of the larynx	Know to assess the severity of respiratory failure and determine treatment tactics	List and write down in the workbook forms and stages, a set of therapeutic measures	1) Yanfaza P. Surgical anatomy of the head and neck - Panfilov Publishing House / Binom. Knowledge Lab. - 2014 -896 p.
8. Tracheostomy	To know to use in practice	Name the indications and types of tracheotomy	1) Kryukov A.I.: A guide to emergency care for diseases of the ear and upper respiratory tract. - M: GEOTAR-Media. - 2016 - 31-50 p.

Table 25

LESSON PLAN (240 min.)

№ / №	Activity algorithm		Indicative signs		
	Consecutive actions	Means of action	Reasons	Control criteria	Time (min)

1	Management of patients	Examination of thematic patients (adults and children) in a hospital.	Confirm the ability to examine the patient, analyze and synthesize the data obtained	Evaluation of the identified changes, differential diagnosis, diagnosis and choice of treatment tactics. Use a case history chart	120
2	Report on independent work based on the results of management		Developing Clinical Thinking Skills	Students report the results of patients management. Agree on diagnosis and treatment	60
3	Performing diagnostic and therapeutic procedures		Development and training of skills	Preparation of laryngeal cotton holders, completing a set of instruments for tracheostomy, processing tracheocannulas	60

Tests on: «Diseases of the larynx: acute and chronic laryngitis, acute laryngotracheitis in children, edema, diphtheria, paresis and paralysis of the muscles of the larynx, acute and chronic stenosis of the larynx».

1. IN STENOSIS OF THE LARYNX IN CHILDREN _____ IS PERFORMED

- 1) upper tracheostomy
- 2) middle tracheostomy
- 3) lower tracheostomy
- 4) conicotomy

2. URGENT TRACHEOTOMY IS INDICATED IN ACUTE STENOSIS OF THE LARYNX

- 1) 1st degree
- 2) 2nd degree
- 3) 3rd degree
- 4) 4th degree

3. ABSOLUTE INDICATION FOR TRACHEOTOMY IS

- 1) the level of stenosis of the larynx
- 2) the degree of stenosis of the larynx
- 3) causes of stenosis of the larynx
- 4) patient's age

4. AFTER THE CONICOTOMY

- 1) anti-inflammatory therapy should be prescribed
- 2) a tracheotomy should be performed
- 3) fibroskonia should be carried out
- 4) a tomogram of the larynx should be performed

5. IN CONICOTOMY THE _____ LIGAMENT IS DISCUTED

- 1) cricotracheal
- 2) scoop-epiglottic
- 3) cricoid
- 4) thyroid sublingual

6. ACUTE STENOSIS OF THE LARYNX IS CAUSED BY

- 1) chronic hypertrophic laryngitis
- 2) cancer of the larynx
- 3) scleroma of the larynx
- 4) diphtheria of the larynx

7. STAGE OF ACUTE STENOSIS OF THE LARYNX WHICH REQUIRES URGENT TRACHEOTOMY IS

- 1) compensation
- 2) incomplete compensation
- 3) decompensation
- 4) terminal

8. IN PERACUTE STENOSIS OF THE LARYNX IN THE STAGE OF ASPHYXIA IT IS NECESSARY TO PERFORM

- 1) tracheotomy
- 2) intubation
- 3) conicotomy
- 4) laryngectomy

9. FOR ALL TYPES OF TRACHEOTOMY THE _____ TRACHEAL RINGS SHOULD BE INSERTED

- 1) 1 and 2
- 2) 2 and 3
- 3) 3 and 4
- 4) 4 and 5

10. IN ADULTS WITH STENOSIS OF THE LARYNX IN THE STAGE OF DECOMPENSATION _____ IS PERFORMED

- 1) lower tracheostomy
- 2) middle tracheostomy
- 3) upper tracheostomy
- 4) conicotomy

11. FOR SUBCUTANEOUS NECK EMPHYSEMA AFTER TRACHEOSTOMY _____ IS MOST EFFECTIVE

- 1) introduction of a tracheostomy tube with an inflatable cuff into the trachea
- 2) changing the tracheostomy tube to a larger diameter tube
- 3) wide opening of the skin wound

12. FALSE CROUP ATTACKS ARE MORE COMMON

- 1) in the evening
- 2) at night
- 3) in the morning
- 4) in the afternoon

13. STENOSIS OF THE LARYNX COMES WITH _____ NERVE PARALYSIS

- 1) glossopharyngeal
- 2) lower laryngeal
- 3) upper laryngeal
- 4) sublingual

14. UNILATERAL RECURRENT NERVE PARALYSIS CAUSES

- 1) voice disorder (hoarseness)
- 2) difficulty breathing
- 3) violation of the passage of food

15. THE MOST SEVERE COMPLICATION OF ACUTE LINGERING LARYNGITIS IS

- 1) persistent dysphonia
- 2) acute stenosis of the larynx

- 3) asthmatic bronchitis
- 4) hypersensitivity of the larynx

16. COMPLEX OF SYMPTOMS CHARACTERISTIC FOR PNEUMONOUS LARYNGITIS ARE

- 1) dysphonia and pain in the larynx
- 2) dysphonia, dysphagia, pain in the larynx, dyspnea
- 3) dysphagia, chest pain
- 4) dysphagia, pain when swallowing

17. CONICOTOMY IS INDICATED IN ACUTE LARYNGEAL STENOSIS IN THE STAGE OF

- 1) compensation
- 2) incomplete compensation
- 3) decompensation
- 4) terminal

18. CLINICAL MANIFESTATION OF SINGER NODES IS

- 1) pain sensations
- 2) paroxysmal cough
- 3) persistent dysphonia
- 4) are not clinically manifested

19. SYMPTOMS CHARACTERISTIC FOR STENOSIS OF THE LARYNX IN THE STAGE OF COMPENSATION

- 1) inspiratory dyspnea at rest, pallor of the skin, restlessness of the patient
- 2) slowing down and deepening of breathing, loss of pauses between inhalation and exhalation
- 3) breathing is frequent and superficial, forced position of the patient, cyanosis of the lips, frequent pulse
- 4) breathing - such as Cheyne-Stokes, loss of consciousness, involuntary urination and defecation

20. SYMPTOMS CHARACTERISTIC FOR STENOSIS OF THE LARYNX IN THE STAGE OF INCOMPLETE COMPENSATION ARE

- 1) inspiratory dyspnea at rest, pallor of the skin, restlessness of the patient
- 2) slowing down and deepening of breathing, loss of pauses between inhalation and exhalation
- 3) breathing is frequent and superficial, forced position of the patient, cyanosis of the lips, frequent pulse
- 4) Cheyne-Stokes breathing, loss of consciousness, involuntary urination and defecation

21. SYMPTOMS CHARACTERISTIC FOR STENOSIS OF THE LARYNX IN THE STAGE OF DECOMPENSATION ARE

- 1) inspiratory dyspnea at rest, pallor of the skin, restlessness of the patient
- 2) slowing down and deepening of breathing, loss of pauses between inhalation and exhalation
- 3) breathing is frequent and superficial, forced position of the patient, cyanosis of the lips, frequent pulse
- 4) Cheyne-Stokes breathing, loss of consciousness, involuntary urination and defecation

22. CHONDROPERICHONDRIITIS OF THE LARYNX HAPPENS IN

- 1) purulent inflammation of the mucous membrane of the larynx
- 2) purulent inflammation of the submucosal layer of the larynx
- 3) inflammation of the perichondrium with trophic changes in the cartilage

4) purulent inflammation of the cartilage of the larynx

23. A PATIENT WITH DIPHTHERIA OF THE LARYNX IS HOSPITALIZED IN THE _____ DEPARTMENT OF THE HOSPITAL

- 1) therapeutic
- 2) otorhinolaryngological
- 3) infectious
- 4) surgical

24. WITH FALSE CROUP, THE MOST PRONOUNCED INFLAMMATORY CHANGES OCCUR IN THE LARYNX

- 1) vestibule
- 2) vocal fold area
- 3) under the vocal folds

Keys to the topic: «Diseases of the larynx: acute and chronic laryngitis, acute laryngotracheitis in children, edema, diphtheria, paresis and paralysis of the muscles of the larynx, acute and chronic stenosis of the larynx».

№	ANSWER	№	ANSWER	№	ANSWER
1	3	11	1	21	3
2	3	12	2	22	3
3	2	13	2	23	3
4	2	14	1	24	3
5	3	15	2		
6	4	16	2		
7	3	17	4		
8	3	18	3		
9	2	19	2		
10	3	20	1		

Case № 1

Patient K., 26 years old, turned to the doctor with complaints of tickling sensation, feeling of rawness, congestion in the throat, dry cough, hoarseness of voice. He considers himself sick for 2 days. On laryngoscopy there is hyperemia of the vocal folds, their swelling. The glottis during respiration is free, wide; during phonation an oval-shaped slit is formed between the vocal folds.

Diagnose the case and prescribe treatment.

Case № 2

Patient B., 18 years old, turned to an ENT doctor with complaints of perspiration, sensation of a foreign body, cough, muffled voice, pain when swallowing with irradiation to the ears. Sick for 6 months.

On laryngoscopy: in the region of the laryngeal surface of the epiglottis an infiltrating form of tumor growth was found. The lymph nodes of the neck are not palpable.

What is your expected diagnosis? Assign treatment and examination plan.

Case № 3

At five o'clock in the evening the nurse on duty urgently called the doctor on duty into

the corridor of the clinic. He saw a patient lying down who had been admitted the day before with acute stenosis of the larynx in the stage of compensation. Attention was drawn to the sharp cyanosis of the skin, complete cessation of breathing and convulsive twitching of the limbs.

What type of urgent throat section is most appropriate in this situation?

Homework: tumors and infectious granulomas of the upper respiratory tract and ear.

Lesson 11

Topic. TUMORS AND INFECTIOUS GRANULOMAS OF THE UPPER RESPIRATORY AND EAR. INJURIES, FOREIGN BODIES, ENT BLEEDING AND EMERGENCY CARE FOR THEM

Relevance. Among the causes of death malignant neoplasms occupy a significant place. In connection with the increasing frequency of oncological diseases of the upper respiratory tract and the variety of their clinical manifestations a practical doctor of any profile needs to be guided in the diagnosis and treatment of benign and malignant neoplasms of the ENT organs, to know the principles of prevention and medical examination of this group of patients. For the differential diagnosis of tumor lesions it is necessary to know the epidemiology and clinic of infectious granulomas of the upper respiratory tract and ear.

In peacetime and wartime traumatic injuries, foreign bodies and bleeding from the ENT organs are quite common, requiring emergency care, the rules for which doctors of any specialty should know. The favorable outcome of the disease, and sometimes the life of the patient, often depends on the correct choice of treatment tactics and the timely provision of urgent care.

Objectives. After studying the topic the student must:

have an idea about the epidemiology of tumors and infectious granulomas, classification of tumors of the upper respiratory tract and ear, methods of surgical treatment;

have an idea about the frequency and nature of injuries and foreign bodies of the ear, respiratory tract and esophagus, bleeding from them

know the clinical manifestations of the most common neoplasms and infectious granulomas, the principles of their treatment and prevention;

know the causes, clinical manifestations, basic principles of treatment, prevention, first aid tactics for these diseases;

be able to perform endoscopic methods for examining the upper respiratory tract and ear, timely detect early symptoms of neoplasms and carry out their differential diagnosis with infectious granulomas and inflammatory diseases, perform some diagnostic and therapeutic manipulations.

be able to perform endoscopic research methods, perform primary treatment of wounds, remove foreign bodies of the ear, nose, pharynx, perform anterior nasal tamponade.

Location of the lesson. ENT - office in the clinic, emergency room ENT - clinic or ENT - hospital.

Equipment. Forehead reflector, set of viewing tools, set of hooks for removing foreign bodies from the nose, pharyngeal and laryngeal forceps, Janet syringe, swabs for anterior and posterior tamponade, soft rubber catheter, radiographs and slides.

Table 26

SELF-STUDY ASSIGNMENT FOR THE PRACTICAL CLASS

Questions	Objectives	Self –check tasks	References
1. Malignant tumors of the nose	To know how to use in diagnosis	List the main symptoms	1) Luchikhin L.A. Otorhinolaryngology. Textbook. Approved by the Ministry of Education of the Russian Federation. - M: GEOTAR-Media. - 2016 - 584 p.
2. Juvenile angiofibroma of the nasopharynx	To know how to use in diagnosis	List, characterize	2) Palchun V. T., Magamedov M. M., Luchikhin L. A. Otorhinolaryngology textbook. - 2011 - 690-739 p.
3. Poorly differentiated tonsillar tumors	To know how to use in diagnosis	List, characterize	3) Atlas of ENT diseases. 4th edition. Bull T.R. Ed. M.R. Bogomilsky. - 2007 - 272s.
4. Benign tumors		Name, describe the laryngoscopy picture, list the main symptoms of laryngeal papillomatosis in children	
5. Cancer of the larynx	To know how to use in diagnosis	List the stages. Name the leading clinical symptoms in lesions of various floors of the larynx. List and write in the workbook the treatment methods	
6. Scleroma	To know how to use in diagnosis	Name the most common localization of specific infiltrates in the respiratory tract. List the stages of the disease	1) Palchun V.T. Diseases of the ear, throat and nose. A textbook for students of institutions of secondary vocational education studying 060101.51 "Medicine" in the discipline "Diseases of the ear, throat and nose". - GEOTAR-Media. - 2016 - 315 p.
7. Tuberculosis of the larynx	To know how to use in diagnosis	List the diseases with which differential diagnosis is carried out.	2) Yanfaza P.: Surgical anatomy of

8. Syphilis of the upper respiratory tract	To know how to use in diagnosis	Name the most frequent localization of the process in the tertiary period. List the diseases with which differential diagnosis is carried out.	the head and neck. - Ed. Panfilova / Binom. Knowledge Lab. - 2014 - 896 p.
1. Ear injury	To know in order to correctly diagnose and determine adequate treatment tactics	List and write down in the workbook the types of injuries	1) Palchun V. T. Otorhinolaryngology: national guide - M. : GEOTAR - Media - 2013. - 919 p.
2. Nose injury	The same	Name the types of fractures of the bones of the nose	2) Govorun M.I. : Damage to the ENT organs and the neck in peacetime and wartime. A guide for doctors, - SpecLit - 2010 - 126 p.
3. Hematoma and abscess of the nasal septum 4. Injuries of the larynx and other organs of the neck		Name the main symptoms and determine the treatment tactics. Write down in the workbook the sequence of neck wounds toilet; accompanied by bleeding, impaired breathing and swallowing	3) Kryukov A.I.: A guide to emergency care for diseases of the ear and upper respiratory tract, - M: GEOTAR-Media. - 2016 - 180-192 p. 4) Luchikhin L.A. Otorhinolaryngology. Textbook. Approved by the Ministry of Education of the Russian Federation. - GEOTAR - Media. - 2016 -584 p.
5. Chemical burns of the pharynx, larynx, esophagus		List the degrees of burns. Name clinical symptoms	
6. Foreign bodies of the ear		Name the removal method	
7. Foreign bodies of the nose	Name the most common localization	Name the methods of removal of foreign bodies	

8. Foreign bodies of the pharynx, larynx, trachea and bronchi	To know in order to correctly diagnose and determine adequate treatment tactics	List the main symptoms. List the methods for diagnosing a foreign body in the bronchi. Determine treatment strategy	
9. Nasal bleeding	Name the most common localization	Name the methods of stopping (conservative and operational)	

Table 27

LESSON PLAN (300 min.)

№ / №	Activity algorithm		Indicative signs		
	Consecutive actions	Means of action	Reasons	Control criteria	Time (min)
1	Patients management	Examination of cancer patients.	Evaluation of the identified changes, conducting differential diagnosis, diagnosis and choice of treatment tactics. Using a case history chart	Confirm the ability to examine the patient, analyze and synthesize the data obtained for a diagnosis	120
2	Report on independent work based on the results of patient management		Developing skills for clinical thinking	Students report the results of curation of patients, agree on the diagnosis and treatment	80
3	Performing diagnostic and therapeutic manipulations	Taking smears of prints, processing tracheocannulas	Development and training of skills		100

Tests on: «Tumors and infectious granulomas of the upper respiratory tract and ear».

1. UNILATERAL SENSORINEURAL HEARING LOSS SHOULD BE DIFFERENTIATED FROM

- 1) neuroma of the vestibulocochlear nerve
- 2) otosclerosis
- 3) adhesive otitis media
- 4) tubootitis

2. FOR THE DIAGNOSIS OF CRANIAL NERVE VIII NEURINOMA THE MOST INFORMATIVE WILL BE

- 1) radiography of the temporal bones according to Stanvers
- 2) RKT
- 3) MRI
- 4) spiral RKT

3. VOLKOVICH FRISCH'S SPATULA IS DISCOVERED IN

- 1) ozena
- 2) diphtheria
- 3) scleroma
- 4) syphilis

4. PNEUMOCELE IS DEVELOPED BECAUSE OF

- 1) increase in the virulence of the microflora of the paranasal sinuses
- 2) traumatic injury to the paranasal sinuses
- 3) closure of the natural openings of the paranasal sinuses
- 4) decrease in local immunological reactivity.

5. IN RADICULAR CYSTS OF THE MAXILLARY SINUS _____ IS CARRIED OUT

- 1) physiotherapy treatment
- 2) micromaxillary
- 3) puncture of the maxillary sinus
- 4) radical operation according to Caldwell – Luke

6. CYSTOID DISTENSION OF THE PARANASAL SINUS WITH AIR IN IT IS

- 1) pneumocele
- 2) pyocele
- 3) hemocele
- 4) mucocele

7. BENIGN TUMOR OF THE NOSE CAVITY RESEMBLING A CAULIFLOWER IS

- 1) inverted papilloma
- 2) angioma
- 3) bleeding polyp
- 4) angiofibroma

8. JUNIOR ANGIOFIBROMA IS A BENIGN TUMOR OF

- 1) base of the skull
- 2) nasopharynx
- 3) nasal cavity
- 4) maxillary sinus

9. LARYNX CANCER IS MORE COMMON

- 1) in men
- 2) in women
- 3) equally common in men and women

10. EARLY SYMPTOM OF A TUMOR OF THE MIDDLE PART OF THE LARYNX IS

- 1) dysphonia
- 2) dysphagia
- 3) dyspnea

11. INFECTIOUS GRANULOMAS IN THE LARYNX ARE FORMED IN

- 1) papillomatosis
- 2) scleroma
- 3) Wegener's granulomatosis
- 4) diphtheria

12. AIR CYSTES OF THE LARYNX COME FROM

- 1) valleculas
- 2) piriform sinuses
- 3) laryngeal ventricles
- 4) interarytenoid space

13. CICATRICIAL STENOSIS OF THE AIRWAYS IN THE PLACES OF ANATOMICAL NARROWING IS CHARACTERISTIC FOR

- 1) diphtheria
- 2) tuberculosis
- 3) scleromas
- 4) syphilis

14. BLEEDING FROM THE LARYNX IS CAUSED BY

- 1) a foreign body
- 2) a fibroma of the larynx
- 3) a decaying tumor of the larynx
- 4) a laryngocele

15. INDICATION FOR MICROGENIOTOMY IS

- 1) polyposis-purulent sinusitis
- 2) maxillary sinus cyst
- 3) neoplasm of the maxillary sinus
- 4) purulent sinusitis complicated by osteomyelitis

Keys to the topic:

«Tumors and infectious granulomas of the upper respiratory tract and ear».

№	ANSWER	№	ANSWER
1	1	8	1
2	3	9	1
3	3	10	1
4	3	11	2
5	4	12	3
6	1	13	3
7	1	14	3
		15	2

Tests on: «Injuries, foreign bodies, bleeding from the ENT organs and emergency care for them»

1. INSTRUMENT REQUIRED TO REMOVE A FOREIGN BODY FROM THE EXTERNAL AUDIO CANAL IS

- 1) tongs
- 2) Voyachek hook
- 3) tweezers
- 4) probe

2. THE CONSEQUENCE OF OTHEMATOMA CAN BE

- 1) hearing loss
- 2) deformation of the auricle
- 3) autophony
- 4) dizziness

3. A TRANSVERSAL FRACTURE OF THE TEMPORAL BONE IS CHARACTERIZED BY

- 1) liquorrhea from the ear
- 2) bleeding from the ear
- 3) prolapse of the functions of the inner ear and paralysis of the facial nerve
- 4) tympanic membrane rupture

4. A LONGITUDINAL FRACTURE OF THE TEMPORAL BONE IS MOSTLY CHARACTERIZED BY

- 1) bleeding from the ear
- 2) prolapse of the functions of the inner ear and paralysis of the facial nerve
- 3) hematotympanum
- 4) systemic dizziness

5. PATIENTS WITH A FRACTURE OF THE TEMPORAL BONE PYRAMID GET ASSISTANCE IN THE DEPARTMENT OF THE HOSPITAL

- 1) otorhinolaryngological
- 2) neurological
- 3) therapeutic
- 4) neurosurgical

6. BLOOD CUMULATION IS CHARACTERISTIC FOR OTHEMATOMA

- 1) in the tympanic cavity
- 2) in the maze
- 3) in the external auditory canal
- 4) between the cartilage and the perichondrium of the auricle

7. RECURRENT NOSE BLEEDING IS CAUSED BY

- 1) vasomotor rhinitis
- 2) bleeding polyp
- 3) curvature of the nasal septum
- 4) hypertrophic rhinitis

8. NOSE BLEEDING IS OBSERVED IN CHRONIC RHINITIS

- 1) vasomotor

- 2) hypertrophic
- 3) catarrhal
- 4) atrophic

9. "CLASSICAL" SYMPTOM OF A LOOSE-LYING FOREIGN BODY IN THE TRACHEA IS

- 1) lung atelectasis
- 2) a symptom of suffocation
- 3) symptom of "balloting"
- 4) cough

10. IN AN INJURY OF THE LARYNX COMPLICATED BY BLEEDING THE INJURED SHOULD BE

- 1) sitting
- 2) lying on your back
- 3) lying on the opposite side of the injury
- 4) lying on the side of the injury or on the stomach

11. TO STOP BLEEDING IN NECK INJURY _____ SHOULD BE APPLIED

- 1) cold
- 2) a ligature to a bleeding vessel
- 3) tamponade of the wound

12. A BLEEDING POLYP OF THE NOSE CAVITY IS LOCALIZED ON

- 1) perpendicular to the plate of the lattice labyrinth
- 2) the bottom of the nasal cavity
- 3) the bone part of the nasal septum
- 4) cartilaginous part of the nasal septum:

13. HEMATOSINUS CAN BE CAUSED BY

- 1) curvature of the nasal septum
- 2) trauma of the upper jaw
- 3) acute sinusitis
- 4) choanal polyp

14. DOCTOR'S TACTICS IN DETECTING THE MAXILLARY HEMATOSINUS SINUSES IS

- 1) radical surgery on the maxillary sinus
- 2) puncture of the maxillary sinus
- 3) antibiotic therapy
- 4) washing the sinus by the method of moving the liquid

15. THE MOST OPTIMAL TIME FOR REPOSITION OF BONE FRAGMENTS IN NOSE INJURY IS

- 1) within a week after the injury
- 2) 2 weeks after injury
- 3) immediately
- 4) 6 weeks after injury

16. A GAUZE PLUG SHALL REMAIN IN THE NOSE CAVITY IN ANTERIOR TAMPONADING MAXIMUM FOR

- 1) 1 day
- 2) 2-3 days
- 3) 3-5 days
- 4) 10 days

17. AFTER REPOSITION OF THE NOSE BONES FOR FIXATION OF BONE FRAGMENTS IT IS GOOD TO PERFORM ANTERIOR TAMPONADE WITH 1)

- 1) aminocaproic acid
- 2) paraffin
- 3) synthomycin emulsion
- 4) olive oil

18. WHEN THE BONES OF THE NOSE ARE BROKEN IT IS NECESSARY TO TAKE CARE OF

- 1) nose deformities
- 2) difficulty in nasal breathing
- 3) traumatic brain injury
- 4) mobility of the bones of the nose

19. THE SIZE FOR THE POSTERIOR NASAL GAUZE SHOULD BE SUITABLE FOR THE SIZE OF THE NAIL BONES

- 1) doctor's thumbs
- 2) the patient's thumbs
- 3) doctor's index fingers
- 4) index fingers of the patient

20. IN FRACTURE OF THE NOSE BONES WITH DISPLACEMENT ____ IS CARRIED OUT

- 1) finger reduction
- 2) osteosynthesis
- 3) fixation with a sling bandage
- 4) instrumental reduction

21. RHINOLITIS IS A

- 1) cyst of the nasal cavity
- 2) benign formation of the nasal cavity
- 3) malignant formation of the nasal cavity
- 4) nasal stone

22. ONE OF THE CONSEQUENCES OF THE UPPER JAW INJURY IS

- 1) curvature of the nasal septum
- 2) hematosinus
- 3) exophthalmos
- 4) deformation of the external nose

23. ANOSMIA AND NASAL LIQUORRHEA IS A SIGN OF FRACTURE OF

- 1) perforated plate of the ethmoid bone
- 2) paper plate of the ethmoid bone
- 3) nasal bones
- 4) perpendicular plate of the ethmoid bone

24. AT NOSE BLEEDING THE PATIENT SHOULD TAKE POSITION

- 1) sitting with head tilted back
- 2) sitting with head down
- 3) horizontal
- 4) semi-sitting

25. REASON FOR THE FORMATION OF RHINOLITIS IS

- 1) atrophic rhinitis
- 2) vasomotor rhinitis
- 3) hypertrophic rhinitis
- 4) foreign body of the nasal cavity

26. A FOREIGN BODY IN THE NOSE CAVITY IS MOST CLEARLY DEFINED BY

- 1) radiography
- 2) anterior rhinoscopy

3) posterior rhinoscopy

4) rhinomanometry

27. CAUSE OF HEMATOMA OF THE NOSE PARTITION IS

1) nose injury

2) nosebleed

3) foreign body of the nose

4) neoplasm of the nasal cavity

28. IN HEMATOMA OF THE NOSE PARTITION IT IS NECESSARY TO

1) open the cavity and anterior tamponade of the nasal cavity

2) open the cavity and installing drainage

3) perform anterior tamponade

4) perform puncture of the cavity, anterior tamponade of the nasal cavity

29. IN ABSCESS OF THE PARTITION OF THE NOSE IT IS NECESSARY TO

1) open the abscess on both sides, wash and install drainage

2) open the abscess on one side, wash and install drainage

3) abscess puncture

4) open the abscess on both sides, tight tamponade of the nasal cavity

30. NOSE BLEEDING IS COMMONLY CAUSED BY

1) blood diseases

2) tumors of the nose

3) hypertension

4) nose injuries

31. NOSEBLEEDS ARE TYPICALLY LOCATED IN

1) anteroinferior nasal septum

2) posterior superior part of the nasal septum

3) area of the middle nasal passage

4) area of the upper nasal passage

32. IN HYPERTENSION CRISIS AND NOSE BLEEDING FIRST OF ALL IT IS NECESSARY

1) to take measures to stop bleeding

2) to prescribe antihypertensive therapy

3) to prescribe replacement therapy

4) doctor's supervision

33. POSTERIOR NASAL PACKING SHOULD STAY MAXIMUM FOR

1) 6 hours

2) one day

3) two days

4) three days

34. IF THE NOSE PACKAGING FAILS TO STOP NOSE BLEEDING, THE ARTERY IS LIGATED TO

1) maxillary

2) external carotid

3) internal carotid

4) latice

35. ENOPHTHALMOS IN INJURY OF THE FACIAL SKELETAL IS A SIGN OF A FRACTURE OF _____ BONES

1) frontal

2) maxillary

3) latice

4) zygomatic

36. FOREIGN BODIES OF THE BRONCHI ARE MORE LOCALIZED

1) in the left bronchus

- 2) in the right bronchus
- 3) equally often in both the left and right
- 4) in the area of tracheal bifurcation

37. FOREIGN BODIES OF THE ESOPHAGUS ARE MOST COMMON IN

- 1) neck
- 2) breastfeeding
- 3) abdominal

38. IN ASPHYXIA CAUSED BY FOREIGN BODIES OF THE LARYNX FIRST OF ALL IT IS NECESSARY TO

- 1) perform a conicotomy
- 2) remove the foreign body
- 3) intubate
- 4) perform a tracheostomy

39. PERFORATION OF THE WALL OF THE ESOPHAGUS DEVELOPS

- 1) paratonsillitis
- 2) laryngitis
- 3) mediastinitis
- 4) esophagitis

40. DURING PERCUSSION OF THE LUNGS OF A PATIENT WITH A FOREIGN BODY IN THE BRONCH, THAT DOES NOT OBTURATE ITS LUMINAL, THE PERCUTOR SOUND IS DUTTED

- 1) over the corresponding bronchus
- 2) on the opposite side
- 3) not defined
- 4) on the affected side

41. WHEN THE MAIN BRONCH IS OBTURATED BY A FOREIGN BODY DURING INHALATION RADIOSCOPY THE MEDIASTUM IS DISPLACED INTO

- 1) does not move
- 2) healthy side
- 3) sick side

42. FOREIGN BODIES IN THE RESPIRATORY ARE MOST COMMON IN

- 1) larynx
- 2) trachea
- 3) bronchi

43. POSTINTUBATION GRANULOMA IS CAUSED BY

- 1) using a laryngeal mask for anesthesia
- 2) acute laryngitis in the postoperative period
- 3) prolonged intubation of the larynx

44. IN CHEMICAL BURN OF THE LARYNX THE FIRST ORGAN TO DAMAGE IS

- 1) laryngeal surface of the epiglottis
- 2) vestibular folds
- 3) vocal folds
- 4) lingual surface of the epiglottis

45. PREVENTION OF POST-BURN STENOSIS OF THE ESOPHAGUS IS CARRIED OUT BY

- 1) diet therapy
- 2) antibiotic therapy
- 3) bougie
- 4) physiotherapy

46. AIR CYSTES OF THE LARYNX COME FROM

- 1) valleculae
- 2) piriform sinuses
- 3) laryngeal ventricles
- 4) interarytenoid space

47. TO STOP EXCESSIVE BLEEDING FROM THE LARYNX IT IS NECESSARY TO BANDAGE THE CAROTID ARTERY

- 1) general
- 2) internal
- 3) outdoor

48. CLOSED NECK INJURIES ARE DANGEROUS FOR LIFE BECAUSE OF

- 1) swelling of the larynx
- 2) hematoma of the larynx
- 3) catarrhal laryngitis
- 4) angina

Keys to the topic: «Injuries, foreign bodies, bleeding from the ENT organs and emergency care for them».

№	ANSWER	№	ANSWER	№	ANSWER	№	ANSWER	№	ANSWER
1	2	12	4	23	1	34	2	45	3
2	2	13	2	24	2	35	2	46	3
3	3	14	1	25	4	36	2	47	3
4	1	15	3	26	1	37	1	48	1
5	4	16	2	27	1	38	1		
6	4	17	2	28	4	39	3		
7	2	18	3	29	1	40	4		
8	4	19	2	30	3	41	3		
9	3	20	4	31	1	42	3		
10	4	21	4	32	2	43	3		
11	2	22	2	33	4	44	3		

Case № 1

A 6-year-old child complains of pain in the right ear. There were no indications of ear disease in the anamnesis. In otoscopy: the skin of the right auricle and the visible part of the external auditory canal is not changed. The external auditory meatus is obturated by a smooth, dense, rounded formation; there is no discharge.

Make a diagnosis, prescribe treatment.

Case № 2

A 7-year-old girl, playing with beads, put one of them into the ear canal. The nurse, who was asked for help, tried to remove the foreign body with tweezers, but the attempt was unsuccessful, the bead went deep into the ear canal. The girl was taken to the ENT department.

In otoscopy: there is a slight infiltration of the tissues of the left auditory canal, there are isolated abrasions on his skin. In the depth of the auditory canal behind the isthmus a foreign body is determined. The bead is not visible. An attempt to remove a foreign body by washing failed.

What is the further tactics of the doctor?

Case № 3

An ambulance delivered a 2-year-old child to the ENT clinic with paroxysmal whooping cough symptoms. The cough is intermittent, aggravated by the anxiety of the child.

From the anamnesis of the mother, it was found out that the night before he ate watermelon, ran while eating, choked, a short attack of suffocation occurred, after which a paroxysmal cough began to repeat, during which sometimes suffocation also appeared. Objectively: the general condition is satisfactory. Temperature 36.6° C. Noisy breathing. Pronounced inspiratory dyspnea. The child is restless, excited, strives to maintain a forced position in which he suffers less from coughing fits. In the area of the trachea the symptom of "clapping" is heard synchronously with inhalation and exhalation. No other changes were found.

Diagnose the case. What help should be given the patient?

Case № 4

An air medical service delivered to the ENT clinic a child aged 2 years and 8 months. The day before entering the clinic he cracked sunflower seeds, choked, and had an asthma attack. Upon admission the general condition was severe. Shortness of breath, pallor of the skin, cyanosis of the lips, breathing with the participation of auxiliary muscles, retraction of the supraclavicular and jugular fossae are expressed. Coughing, groaning breath, body temperature 38.6°C. On the left the percussion tone is shortened, breathing is not audible throughout. On the right, with percussion, a box sound, scattered dry rales are heard. The borders of the heart are shifted to the left, heart sounds are muffled. X-ray examination established: the left lung field is narrowed, intensely darkened. The shadow of the mediastinum on inspiration shifts to the left, the left dome of the diaphragm is pulled up, motionless. The pulsation of the heart is greatly accelerated.

Make a diagnosis. What help should be given to the child?

Case № 5

During a boxing competition, an athlete, a 17-year-old boy, received a nose injury. The next day there was difficulty in nasal breathing through both halves of the nose. Anterior rhinoscopy revealed swelling in the area of the nasal septum on both sides, the nasal passages were not defined.

What is the diagnosis? What complications can be caused by improper management of such a patient?

Case № 6

Patient K., 12 years old, was admitted to the ENT clinic with complaints of cough. From the anamnesis it was found out that 14 hours ago he cracked pine nuts, choked, turned blue. On admission the patient's general condition was satisfactory. Temperature 36.6 ° C. pale is skin, slight cyanosis of the lips, nose, fingers. The right half of the chest lags behind in the act of breathing. On the right, the percussion sound is shortened. On auscultation weakened breathing is heard in the lungs on the right. An x-ray examination at the height of inspiration shows a shift in the shadow of the heart to the right, and exhalation to the left. Make a diagnosis. What kind of help should be given to the patient?

Case № 7

A 2-year-old child with severe shortness of breath was delivered to the duty ENT hospital.

From the anamnesis of the mother it was found out that a day ago the boy ate a watermelon, laughed, then turned blue and coughed. The asthma attack disappeared, but since then the child is hyposthenic, there is a significant increase in breathing, coughing. On examination attention is drawn to the pallor of the skin - visible mucous membranes, pronounced increased respiration, lagging angle of the scapula on the left during exhalation. Percussion sound above the lungs on the left with a tympanic shade. Auscultatory there is difficulty exhaling, there are dry rales. On x-ray examination the lung on the left is more transparent than on the right. The intercostal spaces of the left half of the chest are wider than on the right. The mediastinal organs move to the right during inhalation. Diaphragm rise on the left is sharply limited. Make a diagnosis. Prescribe treatment.

Case № 8

A 13-year-old girl was admitted to the ENT clinic with complaints of shortness of breath, periodic cough. From the anamnesis it was found out that a week ago when she was eating beans on the street, she received an unexpected push in the back, a convulsive cough immediately appeared, a sharp short-term difficulty in breathing.

Then her breathing resumed, the cough lessened, but during the cough she felt something rolling up her throat. And when she inhaled it went down. After 4 days this feeling passed, there was a malaise, periodically coughing bothered.

When examining pathology from the ENT organs, no pathology was found. Radiologically there is atelectasis of the lower lobe of the right lung .

What is the diagnosis? What is the medical strategy?

References:

1. Alekseeva N.S. Dizziness. Otoneurological aspects. - MedPress-Inform. - 2014 -184 p.
2. Altman Ya. A., Tavartkiladze G. A. Guide to audiology. - M.: DMKPress, 2003. - 360 p.
3. Anan'eva S.V. Diseases of the ear, throat, nose. - Rostov-on-Don: Phoenix. - 2011. - 412 p.
4. Artyushkin S.A.: Chronic polypous rhinosinusitis and hypertension, - Science. - 2009 -112 p.
5. Atlas of ENT diseases. 4th edition. Bull T.R. Ed. M.R. Bogomilsky. - 2007 - 272s.
6. Babanov S.A. Occupational sensorineural hearing loss. Monograph, - Infra-M, Vuzovsky textbook. - 2017 - 98 p.
7. Babiyak V.I., Gofman V.R., Nakatis Ya.A. Neurootorhinolaryngology. Guide for doctors. - 2002 - 727 p.
8. Babiyak V.I., Nakatis Ya.A. Clinical otorhinolaryngology, a guide for physicians. - 2005 - 200 p.
9. Babiyak V. I., Nakatis Ya. A., Pashchinin A. N., Voronov V. A. Fundamentals of otoneurology. A guide for doctors. - St. Petersburg: "Knowledge". - 2015.-720 p.
10. Barton M. Diseases of the ear, throat and nose. Brief guide for doctors and students. St. Petersburg: Nevsky dialect; M.: Binom, 2002
11. Burbom Hans, Kashke Oliver, Navka Tadeus. Diseases of the ear, throat and nose. - MEDpress-Inform. - 2016 - 776 p.

12. Blotsky A.A. Snoring and obstructive sleep apnea syndrome. - St. Petersburg: Special Lit. - 2002. - 176 p.
13. Blotsky A.A., Karpishchenko S.A. Emergency conditions in otorhinolaryngology. - St. Petersburg: "Eskulap", 2009. - 175 p.
14. Bogomilsky M.R. Children's otorhinolaryngology. - M.: Geotar-Media. - 2006. - 432 p.
15. Boboshko M.Yu. Auditory tube. - St. Petersburg: Special Lit. - 2003. - 353 p.
16. Bork K. Diseases of the mucous membrane of the mouth and lips. Clinic, diagnosis and treatment. - M.: Medical literature. - 2011. 448 p.
17. Brandt. T. Dizziness, - Practice. - 2010 - 200 p.
18. Bull T.R. Atlas of ENT diseases M.: GEOTAR-Media, 2007
19. Vasilenko Yu.S. Voice. Foniatic aspects. - M: Energoizdat, 2002. - 480 p.
20. Wiegand M.E., Iro H. Endoscopic surgery of the paranasal sinuses and anterior skull base. - M.: medical. lit. - 2010. - 296 p.
21. Gappoeva E. T. Methodological guide to practical exercises in otorhinolaryngology for students of medical universities (Second edition, revised, supplemented) Vladikavkaz 2012, 260 p. UMO-584;
22. Gappoeva E. T. Sensorineural hearing loss. Ed. SOGU. - 2011 – 232 p.
23. Gappoeva E.T. Textbook on otorhinolaryngology for students studying in the specialty "General Medicine" and "Medicine and prevention", - UMO - 17-29 / 481 - 2012 - 200s.
24. Gersdorf M., J.-M. Gerard. Atlas on Surgery of the middle ear.- Binom. - 2014 - 152 p.,
25. Govorun M.I. ...: Damage to the ENT organs and neck in peacetime and wartime. Guide for doctors. - SpecLit. - 2010 - 126 p.
26. Davudov Kh.Sh. Clinical pathology of the larynx. Guide - an atlas for postgraduate education of specialists of scientific, medical and educational medical institutions. - MIA. - 2009 - 160 p.
27. Dementiev A.S., Zhuravleva N.I., Kochetkov S.Yu., Chepanova E.Yu. Otorhinolaryngology. Standards of medical therapy. - M.: GEOTAR-Media. - 2016. - 320 p.
28. Dunnebir E.A. Radiation diagnostics. Otorhinolaryngology. - M.: MEDpress-inform. - 2013.- 360 p.
29. Epifanov V.A. Rehabilitation for respiratory diseases, - GEOTAR-Media. - 2013 - 656 p.
30. Immunology and allergology for ENT doctors. Edited by D. K. Novikov - Medical Information Agency. - 2006 - 512 p.
31. Kozorez E.S. ENT - diseases. - M.: VLADOS-PRESS. - 2005. - 89 p.
32. Komarov M. V. [et al]. Atlas. Otoscopy. Ear pathology in color: a practical guide to otorhinolaryngology St. Petersburg : Poliforum, 2017
33. Kosyakov S. Ya. Selected issues of practical otosurgery; monograph / - Moscow: MTsFER. - 2012. - 224 p.
34. Kruglikov G.G. Respiratory pathology. Atlas. - LitTerra. - 2013 - 272 p.
35. Kryukov A.I. A guide to emergency care for diseases of the ear and upper respiratory tract. - GEOTAR-Media. - 2016 - 386 p.
36. Kryukov A.I., Fedorova O.K., Antonyan R.G. et al. Clinical aspects of Meniere's disease. M. - 2006. - 240 p.
37. Laiko A.A., Zabolotny D.I. Recurrent otitis media - 2001 - 153 p.
38. Lopatin A. S. Rhinitis: pathogenetic mechanisms and principles of pharmacotherapy. - LitTerra. - 2013 - 368 p.
39. Lopatin A.S., Aleksandrova I.A., Varvyanskaya A.V. Rational pharmacotherapy of ear, nose and throat diseases. Guide for practicing physicians. - LitTerra. - 2013 - 8p.

40. Luchikhin L. A. Diseases of the upper respiratory tract and ear. Practitioner's Handbook. - GEOTAR-Media. - 2016 - 256 p.
41. Luchikhin L.A. Otorhinolaryngology. Textbook. – Approved by the Ministry of Education of the Russian Federation. -GEOTAR-Media. - 2016 - 584 p.
42. Luchikhin L. A. Otorhinolaryngology (with a course of video and media lectures). Moscow: Eksmo, 2008
43. Luchikhin L. A. Examination of an otorhinolaryngological patient. - GEOTAR-Media. - 2014 - 256 p.
44. Mayorov V.A. Smells. Their perception, impact, elimination. - Peace. - 2006 - 366 p.
45. Mark Remakl, Hans Edmund Eckel. Surgery of the larynx and trachea. - Binom. - 2015 - 368 p.
46. Martov V. Yu. Medicines in otorhinolaryngology. - M: Medical literature. - 2009 - 496 p.
47. Nosulya E. V. Propaedeutics in otorhinolaryngology. - Medical Information Agency. - 2009 -180 p.
48. Ovchinnikov Yu. M., Gamov V. P. Diseases of the nose, throat and ear. - M.: Medicine. - 2003 - 320 p.
49. Otorhinolaryngology national guidelines / Ed. member box RAMS V. T. Palchun. - Moscow ed. Gr. "GEOTAR-Media". - 2013 - 954 p.
50. Otorhinolaryngology: textbook ed. I. B. Soldatov SPb., 2001
51. Palchun V.T. Diseases of the ear, throat and nose. A textbook for students of institutions of secondary vocational education studying in the specialty 060101.51 "Medicine" in the discipline "Diseases of the ear, throat and nose". - GEOTAR-Media. - 2016 - 315 p.
52. Palchun V.T. Inflammatory diseases of the larynx and their complications. Management. - Moscow ed. Gr. GEOTAR - Media. - 2013. - 176 p.
53. Palchun V.T. Practical otorhinolaryngology. - M.: Medical Information Agency. - 2006. - 368 p.
54. Palchun V. T. [et al.] Examination of ENT patient. M. : Litterra, 2014.
55. Palchun V. T., Luchikhin L. A. Case history in the ENT hospital / Guidelines. - M: Medicine. - 2004 - 32 p.
56. Palchun V.T., Luchikhin L.A., Kryukov A.I. Inflammatory diseases of the pharynx. - MIA - 2014 - 286 p.
57. Palchun V. T., Luchikhin L. A., Magomedov M. M. Guide to practical otorhinolaryngology. - MIA. - 2011 - 565 p.
58. Palchun V. T., Magamedov M. M., Luchikhin L. A. Otorhinolaryngology textbook. - Moscow ed. Gr. GEOTAR - Media. – 2014
59. Palchun V. T., Magomedov M. M., Kryukov A. I. Guidelines for focal infection in otorhinolaryngology, Moscow ed. gr. GEOTAR-Media. - 2015 - 224 p.
60. Parshin V. D. Tracheostomy. Indications, technique, complications and their treatment. - 2008. - 176 p.
61. Piskunov G. Z. Polypous rhinosinusitis. - Moscow ed. gr. GEOTAR-Media. - 2016 - 96 p.
62. Piskunov I. S., Zavyalov F. N., Piskunov V. S., Kuznetsov M. V. Diagnosis and treatment of rhinosinusogenic orbital complications. -Kursk. - 2004 - 112 p.
63. Piskunov G.Z., Piskunov S.Z. Clinical rhinology. Guide for doctors. - 2nd edition. - M.: LLC "Medical Information Agency". - 2006. - 560 p.
64. Piskunov G. Z., Piskunov S. Z. Clinical rhinology. - M.: MIA. - 2013. - 560 p.
65. Piskunov G. Z., Piskunov S. Z., Kozlov V. S., Lopatin A. S. Diseases of the nose and paranasal sinuses: endomicrosurgery. - M.: Collection "Top Secret". - 2003. - 208 p.
66. Pogosov V.S. Atlas of operative otorhinolaryngology. - 2003 - 413 p.

67. Potapov A. A., Lopatin A. S., Kapitanov D. N. Endoscopic diagnosis and treatment of nasal liquorrhea. - Practical medicine. - 2015 - 216 p.
68. Probst R., Grevers G., Iro G. Otorhinolaryngology in clinical practice. - M.: Practical medicine. - 2012. - 384 p.
69. Guide to audiology and hearing aid / Ed. Lyatkovsky Ya. B. [Trans. from Polish. ed. N. A. Daihes]. - M. - 2009.-240s.
70. Guidelines for emergency care for diseases of the ear and upper respiratory tract Ed. A. I. Kryukov M. GEOTAR-Media, 2013
71. Rulenkova L.I. Audiology and hearing aid. - M.: Academy, 208 p., 2003
72. Ryazantsev S. V., Naumenko N. N., Zakharova G. P. Causes of etiopathogenetic therapy of acute sinusitis / Recomm. - St. Petersburg, 2007. - 38 p.
73. Semizorov A. N. X-ray and computed tomography diagnosis of acute and chronic sinusitis. - Vidar M. - 2012 - 104 p.
74. Stratieva O.V. Clinical anatomy of the ear. - St. Petersburg: Special Lit. - 2004 - 256 p.
75. Thomassin J.M. Atlas of otorhinolaryngology, larynx. - 2002 - 29 p.
76. Thomassin J. M. Atlas of otorhinolaryngology, outer and middle ear. - 2002 - 20s.
77. Thomassin JM Atlas of Otorhinolaryngology, Nose and Paranasal Sinuses. - 2002 - 28 s.
78. Tos M. Guide to middle ear surgery. In 4 volumes. T. 1. Approaches, myringoplasty, ossiculoplasty and tympanoplasty / Tr. from English A. V. Davydov / Ed. A. V. Starokhi - Tomsk: Siberian State University. medical university. - 2004.- 412 p.
79. Textbook on medical terminology in the field of otorhinolaryngology in Latin, Russian, German and English: Guidelines. Vladikavkaz, 2008
80. Glasscock-Shambo ear surgery: in two volumes - E. J. Gulya, L. B. Minor, D. S. Poe; translation from English. Ed. S. A. Karpishchenko - M. : Panfilov Publishing House, 2015. V.1. - 416 p.
81. Glasscock-Shambo ear surgery: in two volumes - E. J. Gulya, L. B. Minor, D. S. Poe; translation from English. Ed. S. A. Karpishchenko - M. : Panfilov Publishing House, 2015. V.2. - 448 p.
82. Tsvetkov E.A.: Adenotonsillitis and their complications in children. - St. Petersburg: ELBI-SPb. - 2003 -124 p.
83. Chissov V.I., Trakhtenberg A.Kh., Paches A.I. Atlas of oncological operations M.: GEOTAR-Media, 2008
84. Chissov V.I., Darialova S.L. Oncology. - Moscow ed. Gr. GEOTAR - Media. - 2007 - 600 p.
85. Chumakov F. I., Deryugina O. V. ENT organs and tuberculosis.- Medicine. - 2004 - 160 p.
86. Shevrygin B.V. Diseases of the ear, throat and nose. - Moscow ed. Gr. GEOTAR - Media. - 2002 - 480 p.
87. Shurakova G. V., Beslekoeva M. G. Medical terminology in otorhinolaryngology: guidelines. Vladikavkaz, 2011 EB SOGMA
88. Yanfaza P. Surgical anatomy of the head and neck. - Panfilov Publishing House / Binom. Knowledge Lab. - 2014 - 896 p. V Paleri, J Hill: ENT Infections: An Atlas of Investigation and Management, 116 c., 2010
89. Palchun V. T., Kryukov A. I., Magomedov M. M. Otorhinolaryngology: textbook M.: Geotar-Media, 2020.