

**DANYLO HALYTSKY LVIV NATIONAL MEDICAL  
UNIVERSITY**

**DENTISTRY FACULTY**

Department of Otorhinolaryngology

**OTORHINOLARYNGOLOGY**

**Methodical recommendations**

**to practical classes on Otorhinolaryngology**

**Second (master's) level of higher education**

**Field of Knowledge 22 "Healthcare"**

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**Faculty, year: Medicine, 4th year**

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**Lviv – 2022**

Danylo Halytsky Lviv National Medical University  
Department of Otorhinolaryngology

**Methodical recommendations  
to practical classes on *Otorhinolaryngology*  
for the 4th year (English) students  
in specialty "Medicine"**

Lviv – 2022

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## Subject plans

**Table 1**

**Subject plan of lectures in the Department of Otorhinolaryngology**

N	Topic of the lecture	Hours
1.	External otitis. Acute purulent otitis media. Mastoiditis. Chronic otitis media. Otogenic intracranial complications.	2
2.	Nose and paranasal sinuses diseases. Rhinogenic orbital and intracranial complications.	2
3.	Acute and chronic tonsillitis. Complications. Laryngeal diseases	2
4.	ENT emergencies.	2
	Total	8

**Table 2**

**Subject plan of independent work in the Department of Otorhinolaryngology**

№	Topic of a lesson	Hours
1.	Differential diagnosis of sound conduction and sound perception disorders.	2
2.	Otogenic intracranial complications, otogenic sepsis.	2
3.	Nasal valve, osteomeatal complex.	2
4.	Deformation of the external nose, rhinoplasty.	3
5.	Functional voice disorders.	3
6.	Physiology of lymph adenoid pharyngeal ring	3
7.	Methods of olfactory research. Olfactory disorders due to SARS-CoV-2 (COVID-19). Rehabilitation methods for olfactory disorders.	3
8.	Allergic diseases of the ENT organs.	3
9.	Mycosis of the ENT organs.	3
10.	Complications of acute tonsillitis	3
11.	Phytotherapy in otorhinolaryngology.	3
12.	Physiotherapy in otorhinolaryngology.	3
13.	Nasal bleedings.	3
14.	Foreign bodies of the ENT organs.	3
15.	Pharyngeal cancer.	3
16.	Premalignant laryngeal lesions.	3

<b>Total</b>	<b>45</b>
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**Table 3**  
**Subject plan of practical classes in the Department of Otorhinolaryngology**

<b>№</b>	<b>Topic of the lesson</b>	<b>Hours</b>
1.	Endoscopic examination of ENT. Clinical anatomy, physiology, methods of investigation of external and middle ear.	3
2.	Clinical anatomy, physiology, methods of investigation of hearing and vestibular apparatus.	3
3.	Clinical anatomy, physiology, methods of investigation of nose, paranasal sinuses, pharynx, larynx, bronchi and esophagus. Chemosensory and sinonasal dysfunction due to SARS-CoV-2 (COVID-19).	3
4.	Diseases of external and middle ear. Acute purulent otitis media. Mastoiditis.	3
5.	Chronic purulent otitis media and its complications. Labirynthitis. Orogenic intracranial complications.	3
6.	Nonpurulent ear diseases.	3
7.	Acute and chronic nose diseases.	3
8.	Acute and chronic diseases of the paranasal sinuses (including symptoms of SARS-CoV-2 (COVID-19)). Rhinogenic intracranial and orbital complications.	3
9.	Acute pharyngeal diseases.	3
10.	Chronic pharyngeal diseases.	3
11.	Acute and chronic laryngeal diseases.	3
12.	Traumas, foreign bodies and hemorrhages of the ENT, airways and esophagus, urgent care.	2
13.	Tumors of the ENT organs. Infectious granulomas of the upper airways.	2
	<b>Total</b>	<b>37</b>

Note:

*Assessment of current performance is carried out at each practical lesson on a **4-point scale**.*

*Students' knowledge is assessed from both theoretical and practical training according to the following **criteria**:*

«**Excellent**» – the student has mastered the theoretical material, demonstrates deep and comprehensive knowledge of the topic or discipline, the main provisions of scientific sources and recommended literature, logically thinks and builds the answer, freely uses the acquired theoretical knowledge in the analysis of practical material, expresses his attitude to certain problems, demonstrates a high level of mastery of practical skills;

«**Good**» – the student has mastered the theoretical material, has the basic aspects of primary sources and recommended literature, argues it; has practical skills, expresses his views on certain issues, but assumes certain inaccuracies and errors in the logic of the presentation of theoretical content or in the analysis of practical;

«**Satisfactory**» – the student has mainly mastered the theoretical knowledge of the discipline, navigates in the primary sources and recommended literature, but unconvincingly answers, confuses concepts, additional questions cause the student uncertainty or lack of stable knowledge of a practical nature, shows inaccuracy in knowledge, can not assess facts and phenomena, to connect them with future activities;

«**Unsatisfactory**» – the student has not mastered the study material of the topic (discipline), does not know the scientific facts, definitions, almost does not navigate in the original sources and recommended literature, there is no scientific thinking, practical skills are not formed.

*A student is considered admitted to the semester control (differential credit) if he has performed all types of work provided for in the curriculum and work program.*

### ***Assessment in the discipline "otorhinolaryngology"***

***Maximum scores*** the student can receive for the current academic activity for the semester for admission to the exam is 120 points.

***Minimum scores*** the student can receive for the current academic activity for the semester for admission to the exam is 72 points.

**The calculation of the number of points** is based on the grades obtained by the student on the traditional scale during the study of the discipline, by calculating the arithmetic mean (A), rounded to two decimal places. The value obtained is converted into points on a multi-point scale as follows:

$$x = \frac{A \times 120}{5}$$

**Recalculation of the average score for current activities in a multi-point scale**

4 – grade scale	200 – grade scale
5	120
4,95	119
4,91	118
4,87	117
4,83	116
4,79	115
4,75	114
4,7	113
4,66	112
4,62	111
4,58	110
4,54	109
4,5	108

4 – grade scale	200 – grade scale
4,45	107
4,41	106
4,37	105
4,33	104
4,29	103
4,25	102
4,2	101
4,16	100
4,12	99
4,08	98
4,04	97
3,99	96
3,95	95

4 – grade scale	200 – grade scale
3,91	94
3,87	93
3,83	92
3,79	91
3,74	90
3,7	89
3,66	88
3,62	87
3,58	86
3,54	85
3,49	84
3,45	83
3,41	82

4 – grade scale	200 – grade scale
3,37	81
3,33	80
3,29	79
3,25	78
3,2	77
3,16	76
3,12	75
3,08	74
3,04	73
3	72
Less than 3	Insufficient

**Maximum scores** the student can receive for the final module control are 80.

**Minimal scores** the student can receive for the final module control are not less than 50 scores.

**The grade for the discipline** is defined as the sum of points for current activity (not less than 72) and points for differential credit (not less than 50).



## Lesson 1

**Topic:** *Endoscopic examination of ENT. Clinical anatomy, physiology and examination methods of the external and middle ear.*

1. **The actuality of a topic:** diseases of the upper respiratory tract and ear are one of the most common pathologies in humans. Therefore, knowledge of the methods and techniques of a visual examination of the upper respiratory tract is an important precondition not only for further practical classes in Otorhinolaryngology, but also for the training of highly professional general practitioners, i.e. - family doctors, as a third of all their patients require medical advice and assistance of Otorhinolaryngologists. Knowledge of the clinical anatomy and physiology of the auditory analyzer provides an opportunity to recognize in time any disorders of the specific organ, establish correct diagnosis, prescribe and perform an adequate treatment.
2. **Lesson duration** – 3 academic hours.
3. **Purpose of a lesson:** to master the techniques and examination equipment for an ENT patient; technique of using a forehead reflector, an otoscope; to master methods of otoscopy, rhinoscopy (front and rear), pharyngoscopy, indirect laryngoscopy; to learn the clinical anatomy and physiology of the external and middle ear.
4. **The student is expected to learn:**
  - organization of a working place of the ENT doctor;
  - procedures, equipment and methods of the endoscopic examination of an ENT patient;
  - endoscopic view of healthy ears, nose, pharynx and larynx;
  - clinical anatomy of the external and middle ears;
  - peculiarities of the structure of the ear in children;
  - normal and pathological physiology of the middle ear.
5. **The student should be able to:**
  - use a headlight reflector, otoscope;
  - conduct an otoscopy and evaluate the obtained endoscopic data;
  - conduct a rhinoscopy (front and rear) and evaluate the obtained endoscopic data;
  - conduct a pharyngoscopy, evaluate the state of the oral cavity and oropharynx;
  - perform an indirect laryngoscopy and evaluate the obtained data.
6. **Recommended literature:**
  1. Otorhinolaryngology: textbook / Yu.V. Mitin, Yu.V. Deyeva, Ya.Yu. Gomza et al. — 6th edition. – Kyiv: «MEDICINE». – 2020. – 264 p.
  2. Color Atlas of ENT Diagnosis, 5th edition / Bull TR, Almeyda JS. – Thieme: Stuttgart. – 2010.– 296 p.
  3. Lecture Notes on Diseases of the Ear, Nose and Throat / Bull PD. – 9th edition. – Blackwell Science Ltd. – 2002.– 181 p.
  4. Ear, Nose and Throat and Head and Neck Surgery: An Illustrated Colour Text / Dhillon R, East C. – 4th edition. – Churchill Livingstone. – 2013.– 132 p.
7. **Control questions:**
  - Endoscopic methods of examining the ENT organs.
  - Anatomic-topographic features of the external ear.

- Dimensions, anatomic part's and shapes of the external auditory meatus in children and adults, peculiarities of skin and cartilagenous framework structure, its influence on middle ear disorders.
- Anatomic structures of the middle ear.
- Anatomy of tympanic cavity (hearing bones, muscles, tympanic sinuses, topographical anatomy of a facial nerve).
- Structure and functions of the eardrum.
- Anatomy and functions of the Eustachian tube.
- Normal and pathological physiology of the Eustachian tube.
- Structure of the mastoid process (types of pneumatization and its influence on the development of pathologic changes in the middle ear).
- Physiology of sound conduction.

## **Lesson 2**

**Topic: Clinical anatomy, physiology, methods of investigation of hearing and vestibular apparatus.**

1. **The actuality of a topic:** knowledge of methods and techniques of hearing and vestibular apparatus examination in adults and children are needed in order to establish of a proper diagnosis and identify further medical tactics. It will make possible to avoid diagnostic errors and serious complications, preserve human hearing, and even life. Among factors affecting hearing may be infectious, toxic, vascular, traumatic, and many others. Therefore, methods of examination of acoustic analyzer should possess various specialty physicians, especially family doctor. Even minor disturbances of the vestibular apparatus could be the first symptoms of brain disorders (tumors, aneurysms, strokes, angiopathy, chronic intoxication, etc.), cerebellum, visual analyzer and other organs and systems. Therefore, knowledge of anatomy and physiology of vestibular apparatus is required for a wide range of professionals.
2. **Lesson duration** – 3 academic hours.
3. **Purpose of a lesson:** to learn how to perform akumetry, to evaluate the results of tone audiometry and acoustic impendansometry. To evaluate radiography, CT and MRI data of a temporal bone. To perform topical and differential diagnosis of the auditory and vestibular apparatus disorders. To study anatomy and physiology of vestibular analyzer, to determine degree of its functions impairment, be able to evaluate vestibulometric results.
4. **The student is expected to learn:**
  - clinical anatomy of the internal ear;
  - age peculiarities of the ear structure;
  - physiology of the auditory analyzer;
  - physiology of the vestibular apparatus;
  - subjective methods of hearing investigation: the study of hearing by speaking and whispering language, tuning fork, tone audiometry, speaking audiometry;
  - objective methods of investigation of hearing: acoustic impendansometry, recording of auditory evoked potentials;
  - the study of spontaneous vestibular disorders: dizziness, spontaneous, and positional and pressing nystagmus, statokinetyc stability, vegetative disorders.
5. **The student should be able to:**
  - perform otoscopy;
  - determine mobility of the eardrum;
  - examine hearing by using language;
  - conduct tuning fork tests (Weber, Shvabaha, Rene, Federichi, Zhelle) and be able to evaluate them;
  - analyze audiogram;
  - evaluate the major types of tympanograms;
  - perform research of spontaneous vestibular disorders;
  - perform research of ampular apparatus according to the method of Barani;

- perform research of otolithic apparatus using the method of Voyachyk;
- conduct differential diagnosis of peripheral and central vestibular syndromes.

**8. Recommended literature:**

1. Otorhinolaryngology: textbook / Yu.V. Mitin, Yu.V. Deyeva, Ya.Yu. Gomza et al. — 6th edition. — Kyiv: «MEDICINE». — 2020. — 264 p.
2. Color Atlas of ENT Diagnosis, 5th edition / Bull TR, Almeyda JS. — Thieme: Stuttgart. — 2010.— 296 p.
3. Lecture Notes on Diseases of the Ear, Nose and Throat / Bull PD. — 9th edition. — Blackwell Science Ltd. — 2002.— 181 p.
4. Ear, Nose and Throat and Head and Neck Surgery: An Illustrated Colour Text / Dhillon R, East C. — 4th edition. — Churchill Livingstone. — 2013.— 132 p.

**6. Control questions:**

- structure of the auditory analyzer (soundconduction and soundperception);
- hearing testing procedure by using language;
- structure of spiral organ;
- characteristics of adequate stimulus for the auditory analyzer;
- soundperception, theory of hearing;
- tuning fork tests (Weber, Shvabaha, Rene, Federichi, Zhelle), technique and purpose of examination;
- principles of tone audiometry;
- characteristic of the main types of audiometric curves;
- methods of test of Eustachian tube;
- principles of objective audiometry and tympanometry.

### Lesson 3

**Topic:** *Clinical anatomy, physiology, methods of investigation of nose, paranasal sinuses, pharynx, larynx, bronchi and esophagus. Chemosensory and sinonasal dysfunction due to SARS-CoV-2 (COVID-19).*

1. **The actuality of a topic:** Patients with pathology of the upper respiratory tract (URT) see practically all types of doctors. Quite often the reason of chronic tracheobronchitis may be a latent sinusitis or, conversely, sinusitis can be caused by a chronic nasal or bronchial pathology. Lymphadenoid pharyngeal ring is a powerful immunologic organ that plays a significant role in the formation of local and systemic immunity, but under the influence of negative factors it can become a source of infection and cause pathological changes in many organs and body systems. Lesion of the larynx, trachea or esophagus (e.g. foreign body) can become a reason of airway stenosis, which requires urgent medical assistance (tracheotomy, esophagoscopy). A number of allergic diseases of the URT are increasing all over the world. It is impossible to understand the mechanisms of the URT disorders, pathogenesis, lesion - related complications or distant organs and systems without a profound knowledge of anatomy, physiology and methods of analysis of the URT.
2. **Lesson duration** – 3 academic hours.
3. **Purpose of a lesson:** to learn clinical anatomy, physiology and methods of examination of the nose, paranasal sinuses, throat, larynx, trachea, bronchi and esophagus
4. **The student is expected to learn:**
  - clinical anatomy of the nose, paranasal sinuses, throat, larynx, trachea, bronchi and esophagus;
  - age peculiarities of these organs;
  - physiology and pathophysiology of the upper respiratory tract (URT), bilateral influence on other organs and systems;
  - methods of examination of the upper respiratory tract (URT)
5. **The student should be able to**
  - conduct an endoscopic examination of the upper respiratory tract;
  - be able to evaluate the obtained endoscopic data and perform differential diagnosis;
  - be able to read X-ray of the paranasal sinuses, nose and ear;
  - conduct data analysis of the CT, MRI of paranasal sinuses, nose and ear;
  - perform diagnostic and therapeutic manipulations (taking smears from the nasal cavity, and pharynx, lubricating of the nasal cavity mucosa);
  - conduct a research of nasal breathing (test with a cotton wool) and olfactory.
6. **Recommended literature:**
  1. Otorhinolaryngology: textbook / Yu.V. Mitin, Yu.V. Deyeva, Ya.Yu. Gomza et al. — 6th edition. – Kyiv: «MEDICINE». – 2020. – 264 p.
  2. Color Atlas of ENT Diagnosis, 5th edition / Bull TR, Almeyda JS. – Thieme: Stuttgart. – 2010.– 296 p.
  3. Lecture Notes on Diseases of the Ear, Nose and Throat / Bull PD. – 9th edition. – Blackwell Science Ltd. – 2002.– 181 p.

4. Ear, Nose and Throat and Head and Neck Surgery: An Illustrated Colour Text / Dhillon R, East C. – 4th edition. – Churchill Livingstone. – 2013.– 132 p.

**7. Control questions:**

- Clinical anatomy of the nose and paranasal sinuses (peculiarities of blood supply, and innervation).
- Physiology of the nose and paranasal sinuses.
- Examination methods of the nose and paranasal sinuses.
- Clinical anatomy of the pharynx (blood supply, and innervation).
- Structure of palatine tonsils and functions of Waldeyer's-Pirogov tonsillar ring.
- Clinical anatomy and physiology of the larynx.
- Examination methods of the larynx and pharynx.
- Clinical anatomy, physiology and methods of examination of trachea, bronchi and esophagus.

## Lesson 4

**Topic:** *Diseases of the external and middle ear. Acute purulent otitis media. Mastoiditis.*

1. **The actuality of a topic:** Acute diseases of the external and middle ear are one of the most common medical problems among the diseases of the URT. Quite often they cause a hearing loss and the increase in a number of deaf people, and also sometimes lead to the development of severe, life-threatening intracranial complications. Knowledge of etiology, pathogenesis and clinics of ear diseases gives an opportunity to recognize its destruction in time, diagnose accurately, and prescribe an appropriate treatment.
2. **Lesson duration** – 3 academic hours.
3. **Purpose of a lesson:** To learn how to diagnose acute processes in the external and middle ear, to make differential diagnosis between them, to provide an appropriate treatment.
4. **The student is expected to learn:**
  - mechanisms of a sulfur crust formation and its removal technique;
  - etiology, pathogenesis, clinical signs of external otitis, otitis media, mastoiditis;
  - peculiarities of acute purulent otitis media in infants and in some acute infectious diseases;
  - principles of treatment of acute inflammation of the external and middle ear;
  - possible complications of acute purulent otitis media.
5. **The student should be able to:**
  - conduct otoscopy;
  - evaluate a condition of the external auditory meatus skin, presence of sulfur crust or any other pathological changes;
  - evaluate a condition of tympanic membrane;
  - determine presence of auditory function injury and its degree;
  - conduct differential diagnosis of the external or middle ear injury;
  - assess data of radiological examination of the temporal bone;
  - perform examination of a hearing function;
  - evaluate data from akumetry and audiometry;
  - plan examination and treatment for acute external otitis and purulent otitis media;
  - clean the external auditory meatus, pneumatic massage of the tympanic membrane;
  - input Turunda in the cavity of the external auditory meatus;
  - apply an ear bandage and a heating compress on the ear.
6. **Recommended literature:**
  1. Otorhinolaryngology: textbook / Yu.V. Mitin, Yu.V. Deyeva, Ya.Yu. Gomza et al. — 6th edition. – Kyiv: «MEDICINE». – 2020. – 264 p.
  2. Color Atlas of ENT Diagnosis, 5th edition / Bull TR, Almeyda JS. – Thieme: Stuttgart. – 2010.– 296 p.
  3. Lecture Notes on Diseases of the Ear, Nose and Throat / Bull PD. – 9th edition. – Blackwell Science Ltd. – 2002.– 181 p.

4. Ear, Nose and Throat and Head and Neck Surgery: An Illustrated Colour Text / Dhillon R, East C. – 4th edition. – Churchill Livingstone. – 2013.– 132 p.

**7. Control questions:**

- Pathogenesis of sulfur crust, removal techniques
- External otitis: etiology, pathogenesis, classification, clinical picture, diagnosis, treatment
- Acute otitis media, classification, etiology
- Pathogenesis of the acute otitis media
- Clinic of different forms of acute otitis media
- Treatment of acute otitis media, paracentesis
- Peculiarities of clinical signs of acute otitis media in infants
- Etiology and pathogenesis of acute mastoiditis
- Clinical signs and principles of treatment of mastoiditis
- Atypical mastoiditis, peculiarities of clinical signs
- Differential diagnosis between mastoiditis and lymphadenitis of intratemporal area.



## Lesson 5

### **Topic: Chronic purulent otitis media and its complications. Labyrinthitis. Otogenic intracranial complications..**

- 1. The actuality of a topic:** Nowadays a high prevalence of chronic suppurative otitis media, which belongs to severe ear diseases still remains actual. This pathological process is one of the main reasons of human deafness and, in addition, leads to appearance of such diseases as labyrinth, facial nerve paresis, intracranial complications. Therefore, knowledge of etiology, pathogenesis, pathological anatomy, clinical features, principles of chronic purulent otitis media treatment and its potential complications is extremely important in the work of wide range of specialists, i.e. - otorhinolaryngologists, neurologists, optometrists, neurosurgeons, internists, pediatricians, infectious disease specialists.

Despite the significant reduction of intracranial complications, pathology is still in the center of attention for otolaryngologists and other medical specialists (neurologists, neurosurgeons, infectious disease specialists, ophthalmologists, anesthesiologists, etc.). According to different authors the number of deaths in the result of intracranial complications ranges from 15% to 50%. So each specialist to whom a patient is referred to, especially a family doctor should, be able to recognize beginning of the intracranial complications in time.

- 2. Lesson duration** – 3 academic hours.
- 3. Purpose of a lesson:** to study etiology, pathogenesis, pathological anatomy, clinical signs of two major forms of chronic purulent otitis media such as chronic purulent otitis media without osteolysis and without cholesteatoma and chronic purulent otitis media with osteolysis and with cholesteatoma. To learn how to diagnose chronic purulent otitis media, make differential diagnosis and determine a rational therapeutic approach. To be familiar with ear surgery. to study etiology, pathogenesis, pathological anatomy, clinical signs, diagnosis, differential diagnosis and treatment principles of different forms of labyrinthitis. To understand the possible ways of spreading of infection from the middle ear cavity to the brain cavity. To study symptoms of the intracranial complications, differential diagnosis and methods of examination in different forms of the intracranial complications. To master the main methods of treatment of otogenic intracranial complications.
- 4. The student is expected to learn:**
  - etiology, pathogenesis, pathological anatomy of chronic purulent otitis media;
  - classification and clinical features of major forms of chronic purulent otitis media;
  - differential diagnosis between chronic purulent otitis media without osteolysis and without cholesteatoma and chronic purulent otitis media with osteolysis and with cholesteatoma;
  - occurrence mechanism and possible complications of cholesteatoma;
  - principles of conservative treatment of major forms of chronic purulent otitis media;

- principles and indications for surgical treatment of major forms of chronic purulent otitis media.
- etiology and pathogenesis of labyrinthitis;
- pathomorphological forms of labyrinthitis;
- division of labyrinthitis depending on the pathways of infection in the inner ear;
- clinical forms of labyrinthitis;
- differential diagnosis of cerebellar abscess and labyrinthitis;
- basic methods of conservative and surgical treatment of various forms of labyrinthitis;
- etiology and pathogenesis of intracranial complications in case of the ear disease;
- pathways and penetration stages of infection from the middle ear cavity to the brain cavity;
- meningeal symptoms in case of otogenic meningitis;
- clinic and principles of otogenic meningitis treatment;
- pathogenesis, clinical signs of the brain and cerebellum otogenic abscesses;
- principles of the brain abscesses treatment;
- pathogenesis, clinical signs of sinus sigmoideus thrombosis;

**5. *The student should be able to:***

- allocate symptoms (including patient's complaints and illness history data) that indicate the presence of chronic purulent otitis media;
- conduct otoscopic examination, evaluate condition of the middle ear - eardrum, tympanic cavity, its pathological contents;
- perform hearing tests, access data from acumetry, audiometry and vestybulometry;
- analyze data from radiographic tests of temporal bone, CT, MRI;
- make a plan of examination and chronic supplicative ear disease treatment – both conservative and surgical;
- be able to wash and clean ears, put ear drops into middle ear cavity and auditory tube, apply ear bandage.
- choose the symptoms of labyrinthitis based on the complaints and anamnesis data, to identify the causes of a disease;
- conduct differential diagnosis between labyrinthitis and pathology of the cerebellum;
- create a plan of treatment for patients with different forms of labyrinthitis;
- diagnose otogenic intracranial complications;
- conduct differential diagnosis between different forms of intracranial complications;
- analyze CT, MRI;
- create a plan of examination and treatment for patients with different forms of intracranial complications;
- conduct otoscopy, examination of hearing using spoken language and tuning fork, evaluate data from audiometry and tympanometry;
- to conduct examinations and assess vestibular function;

## **6. Recommended literature:**

1. Otorhinolaryngology: textbook / Yu.V. Mitin, Yu.V. Deyeva, Ya.Yu. Gomza et al. — 6th edition. — Kyiv: «MEDICINE». — 2020. — 264 p.
2. Color Atlas of ENT Diagnosis, 5th edition / Bull TR, Almeyda JS. — Thieme: Stuttgart. — 2010.— 296 p.
3. Lecture Notes on Diseases of the Ear, Nose and Throat / Bull PD. — 9th edition. — Blackwell Science Ltd. — 2002.— 181 p.
4. Ear, Nose and Throat and Head and Neck Surgery: An Illustrated Colour Text / Dhillon R, East C. — 4th edition. — Churchill Livingstone. — 2013.— 132 p.

## **7. Control questions:**

- Etiology and pathogenesis of chronic purulent otitis media (ChPOM).
- Classification of ChPOM.
- Clinical signs and diagnosis of major forms of ChPOM.
- Differential diagnosis between chronic purulent otitis media without osteolysis and without cholesteatoma and chronic purulent otitis media with osteolysis and with cholesteatoma.
- Cholesteatoma: appearance mechanisms, possible complications.
- Principles of conservative treatment of ChPOM.
- Indications and contraindications for tympanoplasty and its basic types.
- Principles of surgical treatment for patients with chronic purulent otitis media with osteolysis and with cholesteatoma.
- etiology, pathogenesis and clinical signs of different forms of labyrinthitis;
- division of labyrinthitis depending on the pathways of infection to the inner ear;
- pathomorphological forms of labyrinthitis (serous, purulent, necrotic);
- clinical forms of labyrinthitis: limited, acute diffuse serous labyrinthitis, acute diffuse purulent labyrinthitis, necrotizing labyrinthitis;
- differential diagnosis between labyrinthitis and pathology of the cerebellum;
- main methods of labyrinthitis treatment;
- etiology of otogenic intracranial complications;
- pathways of infection from the middle ear cavity to the brain cavity;
- otogenic meningitis (clinical signs and principles of treatment);
- sinus sigmoideus thrombosis and otogenic sepsis (pathogenesis, clinical signs);
- otogenic abscess of the brain hemispheres and cerebellum (clinical signs and principles of treatment);
- Extra- and subdural abscess of the middle and posterior cranial fossa (clinical signs and principles of treatment);

## Lesson 6

**Topic:** *Nonpurulent chronic ear diseases.*

**1. The actuality of a topic:** A large group of nonpurulent diseases of the middle and inner ear is the most common cause of progressive hearing loss in adults and in children. Various negative factors can cause these pathological processes, e.g. iatrogenic (unreasonable prescription of ototoxic drugs), vascular (ischemia, stroke), traumatic, metabolic disorders, decreased reactivity of an organism, etc. Proper treatment and prevention of such diseases is impossible without profound knowledge of etiology, pathogenesis and clinical signs.

**2. Lesson duration** – 3 academic hours.

**3. Purpose of a lesson:** to study etiology, pathogenesis, clinical signs, differential diagnosis of the middle otitis with effusion, sensoryneural hearing loss, otosclerosis, Meniere's disease. To learn main principles of rational treatment and prevention of nonpurulent ear disease.

**4. The student is expected to learn:**

- etiology, pathogenesis of the middle otitis with effusion, sensoryneural hearing loss, otosclerosis, Meniere's disease;
- clinical signs and differential diagnosis of nonpurulent ear diseases;
- first aid during the attack of Meniere's disease;
- ways of otosclerosis treatment;
- methods of sensoryneural hearing loss treatment.

**5. The student should be able to:**

- choose the symptoms of the middle otitis with effusion, sensoryneural hearing loss, otosclerosis, Meniere's disease based on the complaints and anamnesis;
- conduct otoscopic examination, to perform hearing investigations by speaking and tuning fork test, to assess data from audiometry and vestibulometry;
- perform vestibular investigations, to assess data from vestibulometry;
- analyze data from radiographic investigations of temporal bone, CT, MRI;
- create a plan of examination for patients with middle otitis with effusion, sensoryneural hearing loss, otosclerosis, Meniere's disease;
- give first aid to the patient during an attack of Meniere disease;
- create a plan of treatment for patients with middle otitis with effusion, sensoryneural hearing loss, otosclerosis, Meniere's disease;
- be able to perform pneumatic massage of eardrum, blow of the Eustachian tube by Politzer method, be familiar with the technique of the Eustachian tube catheterisation.

**6. Recommended literature:**

1. Otorhinolaryngology: textbook / Yu.V. Mitin, Yu.V. Deyeva, Ya.Yu. Gomza et al. — 6th edition. – Kyiv: «MEDICINE». – 2020. – 264 p.
2. Color Atlas of ENT Diagnosis, 5th edition / Bull TR, Almeyda JS. – Thieme: Stuttgart. – 2010.– 296 p.
3. Lecture Notes on Diseases of the Ear, Nose and Throat / Bull PD. – 9th edition. – Blackwell Science Ltd. – 2002.– 181 p.

4. Ear, Nose and Throat and Head and Neck Surgery: An Illustrated Colour Text / Dhillon R, East C. – 4th edition. – Churchill Livingstone. – 2013.– 132 p. etiology, pathogenesis and clinical signs of patients with the middle otitis with efusion.

- ways of treatment of the middle otitis with efusion, prophylaxis.
- etiology, pathogenesis and clinical signs of sensoryneural hearing loss.
- diagnostic investigations of sensoryneural hearing loss.
- methods of treatment and of prophylaxis of sensoryneural hearing loss. Hearing aids.
- atelectasis otitis media, retraction pockets.
- clinical signs, diagnostic investigations and ways of otosclerosis treatment.
- etiology, pathogenesis and clinical signs of Meniere's disease.
- first aid to the patient during the attack of Meniere disease, methods of its treatment.
- prophylaxis of fibrosious forms of chronic otitis media (adhesive otitis).

## Lesson 7

**Topic:** *Acute and chronic nose diseases.*

**1. The actuality of a topic:** Nose diseases are the most common pathology of the upper respiratory tract. Taking into account importance of the nose functions and its relationship with other organs and systems it is understandable why these pathological processes can affect the whole human body. The number of allergic respiratory diseases is increasing every day, including allergic rhinitis. Knowledge of etiology, pathogenesis, clinical diagnostics of the nose allows to establish a diagnosis correctly, prescribe a proper treatment, prevent the development of various complications in other organs and body systems.

**2. Lesson duration** – 3 academic hours.

**3. Purpose of a lesson:** to learn how to diagnose nose furuncle, acute and chronic rhinitis, allergic rhinitis, nasal septum deviation, to conduct differential diagnosis of various forms of nasal lesions and determine a rational therapeutic tactics.

**4. The student is expected to learn:**

- etiology, pathogenesis and clinical signs of nose furuncle, mechanism of complications development, medical tactics;
- etiology, pathogenesis and clinical signs of acute rhinitis, prophylaxis of complications;
- types of nasal septum deviation, principles of surgical correction;
- modern classification of chronic rhinitis;
- etiology, pathogenesis and clinical signs of different forms of chronic rhinitis, and ways of their treatment;
- etiology, pathogenesis and clinical signs of allergic rhinitis, methods of treatment;
- methods of optical endoscopy for diagnosis and treatment of nose and paranasal sinuses diseases.

**5. The student should be able to:**

- distinguish complaints and anamnesis data, select the symptoms typical for nasal septum deviation, nasal furuncle, acute and chronic rhinitis;
- conduct the front and rear rhinoscopy and give a clinical assessment of the results;
- perform an examination of the nasal respiratory and olfactory functions;
- assess X-ray, CT, MRI data of patients with rhinologic pathology;
- perform lavage of the nasal cavity, putting serviettes to the nasal cavity, conduct anemization of the nasal mucosa.

**6. Recommended literature:**

1. Otorhinolaryngology: textbook / Yu.V. Mitin, Yu.V. Deyeva, Ya.Yu. Gomza et al. — 6th edition. – Kyiv: «MEDICINE». – 2020. – 264 p.
2. Color Atlas of ENT Diagnosis, 5th edition / Bull TR, Almeyda JS. – Thieme: Stuttgart. – 2010. – 296 p.
3. Lecture Notes on Diseases of the Ear, Nose and Throat / Bull PD. – 9th edition. – Blackwell Science Ltd. – 2002. – 181 p.
4. Ear, Nose and Throat and Head and Neck Surgery: An Illustrated Colour Text / Dhillon R, East C. – 4th edition. – Churchill Livingstone. – 2013. – 132 p.

### **7. Control questions:**

- etiology, pathogenesis and clinical signs of nose furuncle, treatment;
- acute rhinitis, etiology, pathogenesis and clinical signs, principles of treatment;
- classification of chronic rhinitis;
- etiology of chronic rhinitis;
- clinical signs, diagnosis, differential diagnosis, treatment of chronic catarrhal rhinitis;
- clinical signs, diagnosis, differential diagnosis, treatment of chronic hypertrophic rhinitis;
- clinical signs, diagnosis, differential diagnosis, treatment of chronic atrophic rhinitis;
- etiology, pathogenesis of allergic rhinitis, classification;
- principles of treatment of allergic rhinitis;
- nasal septum deviation, principles of surgical correction;
- prevalence, etiology, pathogenesis, clinical signs of Ozena;
- treatments of Ozena;
- methods of videoendoscopic examination in rhinology.

## Lesson 8

**Topic:** *Acute and chronic diseases of the paranasal sinuses (including symptoms of SARS-CoV-2 (COVID-19)). Rhinogenic intracranial and orbital complications.*

**1. The actuality of a topic:** Currently there is a rapid growth of the incidents of acute and chronic rhinosinusitis. Inflammatory processes of paranasal sinuses often result in the development of chronic bronchitis, bronchial asthma, pneumonia. Sinusitis can cause serious orbital and intracranial complications that could threaten human life. Therefore, knowledge of clinical signs, principles of diagnosis and treatment of these diseases is necessary in clinical practice for physicians of different profiles, i.e. - otorhinolaryngologists, neurosurgeons, neurologists, ophthalmologists, infectious disease specialists, surgeons, family doctors, etc.

**2. Lesson duration** – 3 academic hours.

**3. Purpose of a lesson:** to learn how to diagnose acute and chronic forms of rhinosinusitis, exercise rhinogenous orbital and intracranial complications, make differential diagnosis and determine rational treatment tactics.

**4. The student is expected to learn:**

- etiology, pathogenesis, clinical signs and differential diagnosis of acute and chronic rhinosinusitis;
- clinical classification of rhinosinusitis;
- characteristics of acute rhinosinusitis in children;
- anatomical preconditions for development of orbital and intracranial complications;
- etiology, pathogenesis, clinical signs and differential diagnosis of orbital and intracranial complications;
- principles of treatment of acute and chronic rhinosinusitis, orbital and intracranial complications;
- types of surgical interventions on paranasal sinuses;
- principles of optical endoscopy for diagnosis and treatment of paranasal sinuses diseases.

**5. The student should be able to**

- distinguish complaints and anamnesis data, select the symptoms typical for acute and chronic rhinosinusitis, rhinogenous orbital and intracranial complications;
- conduct an external inspection, palpation, percussion of paranasal sinuses projection areas, conduct front and back rhinoscopy, give a clinical assessment of the results;
- assess X-ray, CT, MRI data of patients with pathology of paranasal sinuses;
- assess data of blood and cerebrospinal fluid examinations cytological and bacteriological content of the of paranasal sinuses;
- create a plan of treatment of patients with acute and chronic rhinosinusitis, and with orbital and intracranial rhinogenous complications;
- perform lavage of the nasal cavity, conduct anemization of nasal mucosa, local anesthesia for maxillary sinus puncture.



## **6. Recommended literature:**

1. Otorhinolaryngology: textbook / Yu.V. Mitin, Yu.V. Deyeva, Ya.Yu. Gomza et al. — 6th edition. — Kyiv: «MEDICINE». — 2020. — 264 p.
2. Color Atlas of ENT Diagnosis, 5th edition / Bull TR, Almeyda JS. — Thieme: Stuttgart. — 2010.— 296 p.
3. Lecture Notes on Diseases of the Ear, Nose and Throat / Bull PD. — 9th edition. — Blackwell Science Ltd. — 2002.— 181 p.
4. Ear, Nose and Throat and Head and Neck Surgery: An Illustrated Colour Text / Dhillon R, East C. — 4th edition. — Churchill Livingstone. — 2013.— 132 p.

## **7. Control questions:**

- etiology, pathogenesis of acute sinusitis.
- primary, secondary sinusitis.
- clinical signs, diagnosis, differential diagnosis, principles of treatment of acute sinusitis.
- puncture of the maxillary sinus, technique, complications.
- peculiarities of odontogenic maxillary sinusitis.
- clinical signs, diagnosis, differential diagnosis, principles of treatment of chronic sinusitis (conservative, types of surgical interventions)
- classification of chronic sinusitis
- principles of functional videoendoscopic surgery for acute and chronic sinusitis.
- pathways of infection from paranasal sinuses into the skull cavity and orbit.
- clinical signs, differential diagnosis, principles of treatment of rhinogenous orbital complications: reactive edema of the orbit and eyelids, orbital abscess, orbital osteoperyostitis, subperiosteal abscess and retrobulbar, orbital phlegmon.
- clinical signs, differential diagnosis, principles of treatment of rhinogenous orbital complications, i.e. arachnoiditis, purulent meningitis, sepsis, thrombosis of the cavernous and upper sagittal sinus, frontal lobe brain abscess.

## Lesson 9

### *Topic: Acute pharyngeal diseases.*

1. **The actuality of a topic:** disease of the pharynx is a common pathology among children and young population, which makes this pathology of social significance. Lymphadenoid pharyngeal ring is of great importance in the formation of local and systemic immunity. However, the pathological process in tonsils can cause lesions of the heart, kidneys, upper air passage ways, connective tissue, nervous system and other organs. On the other hand, the pathology of internal organs could negatively influence on the state of the pharynx. Therefore, etiology, pathogenesis, clinical pathology and methods of investigation should be clear for doctors of any specialty.
2. **Lesson duration** – 3 academic hours.
3. **Purpose of a lesson:** to learn how to diagnose acute and chronic throat pathology, local and long-term complications, carry out differential diagnosis with throat lesions of infectious diseases (diphtheria, infectious mononucleosis, etc.), administer adequate therapy.
4. **The student is expected to learn:**
  - classification, clinical signs of acute tonsillitis;
  - differential diagnosis of primary and secondary tonsillitis;
  - etiology, pathogenesis, classification, clinical signs of pharyngeal diphtheria;
  - etiology, pathogenesis, classification, clinical signs of and principles of treatment of peritonsillar abscesses;
  - etiology, pathogenesis, clinical signs of retropharyngeal abscess, medical tactics;
  - principles of rational antibiotic therapy of acute throat diseases;
  - clinical and laboratory characteristics of chronic tonsillitis;
  - classification of chronic tonsillitis by Soldatov;
  - principles of conservative and surgical treatment of chronic tonsillitis;
  - prophylaxis of chronic tonsillitis;
  - etiology, pathogenesis, clinical signs of hypertrophy lymphadenoid pharyngeal ring, the principles of treatment;
5. **The student should be able to**
  - distinguish, complaints and anamnesis data, select the typical symptoms for pharyngeal pathology;
  - conduct palpation of regional lymph nodes, evaluate the results;
  - conduct oropharyngoscopy, front and back rhinoscopy (epipharyngoscopy), evaluate received endoscopic data;
  - be familiar with palmar nasopharyngeal examination in children and adults;
  - take smears from the nasal cavity and oropharynx for biological research (diphtheria);
  - conduct lubrication, irrigation of pharyngeal mucosa, lavage of tonsils lacunas;

- create a plan of examination of patients with throat pathology;
- administer a rational therapy for patient;

#### **6. Recommended literature:**

1. Otorhinolaryngology: textbook / Yu.V. Mitin, Yu.V. Deyeva, Ya.Yu. Gomza et al. — 6th edition. — Kyiv: «MEDICINE». — 2020. — 264 p.
2. Color Atlas of ENT Diagnosis, 5th edition / Bull TR, Almeyda JS. — Thieme: Stuttgart. — 2010.— 296 p.
3. Lecture Notes on Diseases of the Ear, Nose and Throat / Bull PD. — 9th edition. — Blackwell Science Ltd. — 2002.— 181 p.
4. Ear, Nose and Throat and Head and Neck Surgery: An Illustrated Colour Text / Dhillon R, East C. — 4th edition. — Churchill Livingstone. — 2013.— 132 p.

#### **7. Control questions:**

- etiology, pathogenesis, classification, clinical picture and treatment principles of acute and chronic pharyngitis;
- Soldatov's classification of chronic tonsillitis;
- etiology, clinical picture, diagnosis, differential diagnosis leptotrichosis;
- etiology, pathogenesis, clinical picture, classification, diagnosis of acute primary tonsillitis;
- etiology, pathogenesis, clinical picture, classification, diagnosis of acute secondary tonsillitis;
- differential diagnosis of various forms of tonsillitis;
- principles of therapy of acute tonsillitis;
- etiology, pathogenesis, classification, clinical picture of complications after acute tonsillitis, prevention and methods of treatment;
- etiology, pathogenesis, classification, clinical picture of chronic tonsillitis;
- diagnosis and principles of treatment of chronic tonsillitis (conservative, surgical);
- prophylaxis of chronic tonsillitis;
- etiology, pathogenesis, classification, and clinical picture, principles of treatment of adenoiditis, indications to surgical treatment;
- etiology, pathogenesis, clinical picture of tonsil hypertrophy, principles of diagnostics and therapy;

## Lesson 10

### **Topic: Chronic pharyngeal diseases.**

**1. The actuality of a topic:** disease of the pharynx is a common pathology among children and young population, which makes this pathology of social significance. Lymphadenoid pharyngeal ring is of great importance in the formation of local and systemic immunity. However, the pathological process in tonsils can cause lesions of the heart, kidneys, upper air passage ways, connective tissue, nervous system and other organs. On the other hand, the pathology of internal organs could negatively influence on the state of the pharynx. Therefore, etiology, pathogenesis, clinical pathology and methods of investigation should be clear for doctors of any specialty.

**2. Lesson duration** – 3 academic hours.

**3. Purpose of a lesson:** to learn how to diagnose chronic throat pathology, local and long-term complications, carry out differential diagnosis, administer adequate therapy.

**4. The student is expected to learn:**

- a. clinical and laboratory characteristics of chronic tonsillitis;
- b. classification of chronic tonsillitis by Soldatov;
- c. principles of conservative and surgical treatment of chronic tonsillitis;
- d. prophylaxis of chronic tonsillitis;
- e. etiology, pathogenesis, clinical signs of hypertrophy lymphadenoid pharyngeal ring, the principles of treatment;

**5. The student should be able to**

- distinguish, complaints and anamnesis data, select the typical symptoms for pharyngeal pathology;
- conduct palpation of regional lymph nodes, evaluate the results;
- conduct oropharyngoscopy, front and back rhinoscopy (epipharyngoscopy), evaluate received endoscopic data;
- be familiar with palmar nasopharyngeal examination in children and adults;
- conduct lubrication, irrigation of pharyngeal mucosa, lavage of tonsils lacunas;
- create a plan of examination of patients with throat pathology;
- administer a rational therapy for patient;

**6. Recommended literature:**

1. Otorhinolaryngology: textbook / Yu.V. Mitin, Yu.V. Deyeva, Ya.Yu. Gomza et al. — 6th edition. – Kyiv: «MEDICINE». – 2020. – 264 p.
2. Color Atlas of ENT Diagnosis, 5th edition / Bull TR, Almeyda JS. – Thieme: Stuttgart. – 2010.– 296 p.
3. Lecture Notes on Diseases of the Ear, Nose and Throat / Bull PD. – 9th edition. – Blackwell Science Ltd. – 2002.– 181 p.

4. Ear, Nose and Throat and Head and Neck Surgery: An Illustrated Colour Text / Dhillon R, East C. – 4th edition. – Churchill Livingstone. – 2013.– 132 p.

**7. Control questions:**

- etiology, pathogenesis, classification, clinical picture of chronic tonsillitis;
- diagnosis and principles of treatment of chronic tonsillitis (conservative, surgical);
- Soldatov's classification of chronic tonsillitis;
- prophylaxis of chronic tonsillitis;
- etiology, pathogenesis, classification, and clinical picture, principles of treatment of adenoiditis, indications to surgical treatment;
- etiology, pathogenesis, clinical picture of tonsil hypertrophy, principles of diagnostics and therapy;

## Lesson 11

**Topic:** *Acute and chronic laryngeal diseases.*

1. **The actuality of a topic:** all pathological processes of the larynx are very dangerous for the development of airway obstruction that may cause an asphyxia. Syndromes of this region lesions are very diverse and often are faced by doctors of different specialties (internists, pediatricians, infectiologists, allergists, gastroenterologists, endocrinologists, neurologists, etc.). Profound knowledge of etiology, pathogenesis and clinical signs of laryngeal pathology will help to avoid diagnostic and therapeutic errors in medical practice.
2. **Lesson duration** – 3 academic hours.
3. **Purpose of a lesson:** to learn how to diagnose acute and chronic laryngeal lesions (acute laryngitis, epiglottitis, phlegmonic laryngitis, laryngeal edema, laryngeal stenosis, chondroperihondrytis, laryngeal diphtheria, chronic laryngitis), conduct differential diagnosis of laryngeal pathology, provide emergency aid for acute laryngeal stenosis, administer rational therapy in case of laryngeal diseases.
4. **The student is expected to learn:**
  - etiology, pathogenesis, classification of laryngeal edema;
  - emergency aid for laryngeal edema;
  - classification and stages of laryngeal stenosis;
  - treatment methods of acute and chronic laryngitis;
  - classification of laryngeal stenosis, stages of laryngeal stenosis;
  - classification of laryngeal stenosis, laryngeal stenosis stage acute stenosing laryngotracheitis (ASLT) in children;
  - ways of treatment of ASLT;
  - ways of conducting differential diagnosis of laryngeal diphtheria and ASLT;
  - indications for laryngeal intubation, tracheostomy and conochotomy techniques.
5. **The student should be able to**
  - establish a preliminary diagnosis of laryngeal lesions on the basis of complaints and objective examination of a patient;
  - make a plan of additional examinations of a patient and to administer a rational therapy;
  - perform laryngeal examinations: external inspection, palpation of the laryngeal area and regional lymph nodes, indirect laryngoscopy;
  - conduct differential diagnosis of laryngeal lesions
  - care for tracheostoma and tracheostoma cannula;
  - give an urgent care for acute laryngeal stenosis.
6. **Recommended literature:**
  1. Otorhinolaryngology: textbook / Yu.V. Mitin, Yu.V. Deyeva, Ya.Yu. Gomza et al. — 6th edition. – Kyiv: «MEDICINE». – 2020. – 264 p.
  2. Color Atlas of ENT Diagnosis, 5th edition / Bull TR, Almeyda JS. – Thieme: Stuttgart. – 2010.– 296 p.
  3. Lecture Notes on Diseases of the Ear, Nose and Throat / Bull PD. – 9th edition. – Blackwell Science Ltd. – 2002.– 181 p.

4. Ear, Nose and Throat and Head and Neck Surgery: An Illustrated Colour Text / Dhillon R, East C. – 4th edition. – Churchill Livingstone. – 2013.– 132 p.

**7. Control questions:**

- Etiology, pathogenesis, clinical signs of acute laryngitis, treatment.
- Etiology, main pathogenetic factors that cause respiratory tract stenosis in children in case of ASLT.
- Methods of treatment, urgent care at ASLT.
- Differential diagnosis of ASLT and diphtheria.
- Etiology, clinical signs, treatment of epiglottitis and phlegmonous laryngitis.
- Etiology, clinical signs, treatment of laryngeal diphtheria.
- Laryngeal edema, etiology, urgent care.
- Etiology for acute and chronic laryngeal stenosis.
- Classification, clinical signs, stages, treatment of laryngeal stenosis.
- Types of tracheostomy, indications, complications.
- Structure of tracheostomical cannula, care for her and tracheostoma.
- Classification and clinical signs of chronic laryngitis.
- Hyperplastic laryngitis, principles of laryngeal microsurgery.
- Etiology, pathogenesis, clinical signs of laryngeal chondroperichondrytis, treatment.
- Techniques and indications for conicotomy.
- Disorders of innervation of internal laryngeal muscles, etiology.

## Lesson 12

**Topic:** *Traumas, foreign bodies and hemorrhages of the ENT, airways and esophagus, urgent care.*

**1. The actuality of a topic:** Traumas, foreign bodies, bleeding from the upper respiratory tract are very dangerous for human life. Rendering an immediate professional aid in such cases should be done by physician of any specialty: otorhinolaryngologists, surgeons, family doctors, anesthesiologists, reanimatologist, traumatologists, dentists. Therefore, knowledge of etiology, pathogenesis, clinical signs of emergency conditions in otolaryngology is necessary for the correct evaluation of the clinical situation in order to provide adequate medical care.

**2. Lesson duration** – 3 academic hours.

**3. Purpose of a lesson:** To learn how to diagnose and provide first aid for traumas, foreign bodies of the upper respiratory tract and bleeding as a result. To determine a rational therapeutic approach.

**4. The student is expected to learn:**

- etiology, pathogenesis and clinical signs of the nose and paranasal sinuses traumatic injuries, first aid.
- foreign body in the nasal cavity and rhinolith, medical management
- etiology, pathogenesis and clinical signs of nosebleeding. Principles of first aid, treatment and prevention;
- traumatic injuries of the ear, foreign body in external auditory meatus: symptoms, diagnosis, treatment;
- trauma of the pharynx, laryngeal and medical management;
- foreign body of the pharynx and larynx, trachea and bronchi: etiology, clinical signs, diagnostic, urgent care;
- foreign body and burns in esophagus, principles of emergency care.

**5. The student should be able to:**

- distinguish complaints and anamnesis data, select the symptoms typical for traumas, foreign body, bleeding from the upper respiratory tract;
- conduct an examination of the nasal cavity, throat, larynx and external auditory meatus and detect signs specific to foreign bodies;
- diagnose injuries of the upper respiratory tract and provide the necessary assistance to a patient;
- assess x-ray data picture, computed tomography and magnetic resonance imaging;
- foreign body removal from the external auditory meatus, nose and pharynx;
- provide first aid to patients with bleeding from the upper respiratory tract;
- be familiar with the techniques of the anterior and posterior nasal tamponade, reposition of the nasal bones;
- give first aid in case of the eardrum trauma, middle and inner ear concussion.

**6. Recommended literature:**

1. Otorhinolaryngology: textbook / Yu.V. Mitin, Yu.V. Deyeva, Ya.Yu. Gomza et al. — 6th edition. – Kyiv: «MEDICINE». – 2020. – 264 p.



2. Color Atlas of ENT Diagnosis, 5th edition / Bull TR, Almeyda JS. – Thieme: Stuttgart. – 2010.– 296 p.
3. Lecture Notes on Diseases of the Ear, Nose and Throat / Bull PD. – 9th edition. – Blackwell Science Ltd. – 2002.– 181 p.
4. Ear, Nose and Throat and Head and Neck Surgery: An Illustrated Colour Text / Dhillon R, East C. – 4th edition. – Churchill Livingstone. – 2013.– 132 p.

**7. Control questions:**

- Methods of primary surgical wounds treatment.
- Prevention of tetanus.
- Classification and clinical signs of nasal bones fracture.
- Diagnostic tactics in case of nasal bones fractures.
- Diagnosis and treatment of nasal septum hematoma.
- Combined trauma of the nose, paranasal sinuses, face and related spaces. Principles of medical tactics.
- Injuries of pharynx, treatment tactics.
- Traumas of larynx and trachea, clinical signs, treatment.
- Esophageal burns, tactics for patients with chemical burns of esophagus.
- Traumatic rupture of the tympanic membrane, treatment tactics.
- Othematoma, etiology, treatment principles.
- Etiology of nasal bleeding, principles of first aid.
- Local methods of nasal bleeding arrest.
- Differential diagnosis of throat bleeding.
- Methods of foreign bodies removal from the external auditory meatus;
- Principles of foreign bodies removal from the nasal cavity;
- Clinical signs, diagnosis of the larynx, trachea, bronchi and esophagus foreign bodies, methods of removal;
- Preparing of the patient for bronchoscopy, esophagoscopy;
- Burns and freezing of the external ear and nose, first aid.

## Lesson 13

**Topic: Tumors of the ENT organs. Infectious granulomas of the upper airways.**

1. **The actuality of topic:** about 7000 new ENT-cancer patients are detected in Ukraine every year, it is up to 7.8% from general cancer pathology. The upper respiratory tract tumors, especially malignant, are the most difficult and urgent problem in modern otorhinolaryngology. There is tendency to the increase of their amount because of delayed diagnosis, complexity and duration of the treatment, high frequency of recurrences. Over the past decade the number of patients with tuberculosis of the upper respiratory tract and lung, primary and secondary syphilis has greatly increased. Therefore, knowledge of the clinic, early diagnosis of tumors and infectious granulomas of upper respiratory tract are necessary to a wide range of physicians.

2. **Lesson duration** – 2 academic hours.

3. **Purpose of a lesson:** to learn how to suspect a tumor or infectious granuloma of the upper respiratory tract, set a preliminary diagnosis, differentiate diagnosis, determine rational treatment tactics for this category of patients, depending on the tumor localization and morphology and causative agent of infectious granulomas.

4. **The student is expected to learn:**

- clinical signs, diagnosis and ways of treatment of the ENT benign tumors;
- clinical signs, diagnosis and methods of treatment of the ENT malignant tumors;
- etiology, clinical signs, diagnosis and methods of treatment of the upper respiratory tract infectious granulomas.

5. **The student should be able to**

- distinguish, complaints and anamnesis data, select the symptoms typical for the ENT tumors or infectious granulomas;
- identify objective symptoms that indicate the presence of a tumor or infectious granulomas of the upper respiratory tract and ears;
- create a plan of examinations to confirm a diagnosis of a tumor or infectious granulomas of the upper respiratory tract and ears (radiography, CT, MRI , biopsy, laboratory diagnosis) and be able to assess them;
- take a smear from the nose and pharynx, to make a local anesthesia of the nasal and pharyngeal mucosa before taking a biopsy;
- create a plan of patient's treatment with the above mentioned pathology.

6. **Recommended literature:**

1. Otorhinolaryngology: textbook / Yu.V. Mitin, Yu.V. Deyeva, Ya.Yu. Gomza et al. — 6th edition. – Kyiv: «MEDICINE». – 2020. – 264 p.
2. Color Atlas of ENT Diagnosis, 5th edition / Bull TR, Almeyda JS. – Thieme: Stuttgart. – 2010.– 296 p.
3. Lecture Notes on Diseases of the Ear, Nose and Throat / Bull PD. – 9th edition. – Blackwell Science Ltd. – 2002.– 181 p.
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7. **Control questions:**

- Classification of the ENT tumors.

- Clinical signs, diagnosis of the transitional (marginal) tumors of the upper respiratory tract.
- Treatment methods of the benign ENT tumors.
- Clinical signs, diagnostics and treatment ways of laryngeal cancer.
- Malignant tumors of tonsils, ways of treatment.
- Principles of early diagnosis of malignant tumors of upper respiratory tract and ear.
- Etiology, pathogenesis, classification, epidemiology, clinics of scleroma, principles of treatment.
- Clinical signs and treatment of the ENT tuberculosis.
- Clinical signs and treatment of the ENT syphilis.

## **THE LIST OF QUESTIONS FOR PREPARATION OF STUDENTS FOR DIFFERENTIAL CREDIT.**

1. The main stages of development of otorhinolaryngology as an independent medical discipline.
2. History of otorhinolaryngology development in Ukraine.
3. History of the Department of Otorhinolaryngology of Danylo Halytsky LNMU.
4. The main directions of development and achievements of modern otorhinolaryngology.
5. ENT organs and human analyzers, their functional significance.
6. Clinical anatomy of the outer ear.
7. Clinical anatomy of the tympanic membrane. Features of the location and structure of the tympanic membrane in small children.
8. Clinical anatomy of the tympanic cavity.
9. Walls and floors of the tympanic cavity.
10. Auditory ossicles and muscles of the tympanic cavity.
11. Clinical anatomy of the mastoid process. Types of structure of the mastoid process. Age features.
12. Clinical anatomy, physiology of the ear canal. Features of its structure in childhood.
13. Clinical anatomy of the cochlea.
14. The structure of the spiral organ. Adequate stimulus of the auditory analyzer.
15. The mechanism of sound conduction (air, bone conduction).
16. Leading paths of the auditory analyzer.
17. Theories of sound perception.
18. Clinical anatomy of the dorsum of the inner ear.
19. Clinical anatomy of the semicircular canals of the inner ear.
20. The structure of the ampullary receptor. Adequate stimuli.
21. The structure of the otolith apparatus. Adequate stimuli.
22. Vestibular nuclei and their connections.
23. Vestibular reflexes.
24. Ewald's laws and patterns of nystagmus reaction.
25. Determination of patency of the ear canals.
26. Research of hearing by language and tuning forks.
27. Tonal threshold and speech audiometry.
28. Differential diagnosis of lesions of the sound-conducting and sound-receiving organs.
29. Spontaneous vestibular disorders.
30. Methods of research of an ampullary receptor (caloric, pressor tests).
31. Investigation of otolith function.
32. Clinical anatomy of the external nose.
33. Clinical anatomy of the nasal cavity.
34. Clinical anatomy of the lateral wall of the nose.
35. The structure of the nasal septum.
36. Blood supply and innervation of the nasal cavity.
37. Age features of development of paranasal sinuses.

38. Clinical significance of the paranasal cavities. Clinical anatomy of the maxillary sinus.
39. Clinical anatomy of the frontal sinus.
40. Clinical anatomy of the ethmoidal sinus.
41. Clinical anatomy of the sphenoidal sinus.
42. Clinical physiology of the nasal cavity and paranasal sinuses.
43. The value of nasal breathing for the development of the child's body. Methods of examination of the nose and paranasal sinuses.
44. Clinical anatomy of the pharynx, its parts.
45. Anatomy of the lymphadenoid pharyngeal ring. Age features of lymphadenoid tissue of the pharynx.
46. The structure of the tonsils, blood supply, innervation.
47. Physiology of the lymphadenoid pharyngeal ring.
48. Methods of pharyngeal examination.
49. Topography of the larynx.
50. Cartilage and ligaments of the larynx.
51. Muscles of the larynx.
52. Innervation of the larynx.
53. Clinical anatomy of the laryngeal cavity.
54. Physiological functions of the larynx.
55. Methods of examination of the larynx in adults and children.
56. Anatomy of the esophagus: topography, walls, physiological narrowing.
57. Hematoma and perichondritis of the auricle.
58. Impacted cerumen, clinic, methods of removal.
59. Otitis externa: forms, etiology, clinic, treatment.
60. Acute purulent otitis media. Etiology, pathogenesis, clinic.
61. Features of the course of acute purulent otitis media in young children.
62. Features of the course of acute purulent otitis media in infectious diseases: influenza, scarlet fever, measles, tuberculosis.
63. Treatment of acute purulent otitis media.
64. Treatment of acute purulent otitis media in the preperforative stage. Indications and technique of paracentesis.
65. Acute mastoiditis: definition, clinic, diagnosis, treatment. Anthromastoidotomy.
66. Atypical forms of mastoiditis.
67. Complications of acute purulent otitis media.
68. Chronic purulent otitis media: mandatory symptoms, classification.
69. Chronic purulent mesothympanitis, clinic, methods of treatment.
70. Chronic purulent epitympanitis. Cholesteatoma. Diagnosis, clinic, treatment.
71. Differential diagnosis of epitympanitis and mesothympanitis.
72. Conservative treatment of chronic purulent otitis media.
73. Types of operations on the ear in chronic purulent otitis media.
74. Labyrinthitis: forms, clinic, treatment.
75. Ways and stages of spread of infection from the ear to the cranial cavity.
76. Otogenic brain abscesses: clinic, treatment.
77. Sinus thrombosis and otogenic sepsis: clinic, treatment.

78. Orogenic meningitis: clinic and treatment.
79. Meniere's disease: etiology, pathogenesis, clinic.
80. Treatment of Meniere's disease. Methods of treatment of acute vestibular dysfunction.
81. Sensorineural hearing loss: causes, clinic.
82. Treatment of acute and chronic sensorineural hearing loss.
83. Otosclerosis: pathogenesis, clinic, modern methods of surgical treatment.
84. Nasal boil, clinic, treatment.
85. Acute rhinitis: etiology, pathogenesis, clinic and treatment.
86. Acute runny nose in infants.
87. Chronic rhinitis: etiology, pathogenesis, pathological anatomy, classification.
88. Chronic catarrhal rhinitis: clinic, differential diagnosis, treatment.
89. Chronic hypertrophic rhinitis: clinic, differential diagnosis, treatment.
90. Chronic atrophic rhinitis: clinic, differential diagnosis, treatment.
91. Ozena: clinic, differential diagnosis, principles of treatment.
92. Vasomotor rhinitis, allergic form: etiology, clinic, treatment.
93. Vasomotor rhinitis, neurovegetative form: etiology, clinic, treatment.
94. Hematoma and abscess of the nasal septum: clinic, treatment.
95. Deviation of the nasal septum, synechia and atresia of the nasal cavity; clinic, treatment.
96. Classification of acute and chronic sinusitis.
97. General and local signs of acute and chronic sinusitis.
98. Acute and chronic ethmoiditis: clinic, treatment.
99. Acute sinusitis: clinic, treatment.
100. Chronic sinusitis: forms, clinic, treatment.
101. Chronic odontogenic sinusitis: clinic, diagnosis, treatment.
102. Acute and chronic frontitis: clinic, treatment.
103. Acute and chronic sphenoiditis: clinic, treatment.
104. Chronic polyposis sinusitis: etiology, clinic, complex treatment.
105. Rhinogenic intracranial complications: ways of infection penetration, types of complications, principles of treatment.
106. Rhinogenic orbital complications: ways of infection, types of complications, principles of treatment.
107. Classification of tonsillitis.
108. Catarrhal tonsillitis: clinic, treatment.
109. Follicular tonsillitis: clinic, treatment.
110. Lacunar tonsillitis: clinic, differential diagnosis, treatment.
111. Ulcerative-membranous angina: etiology, clinic, treatment.
112. Secondary tonsillitis.
113. Monocytic angina: etiology, clinic, treatment.
114. Pharyngeal diphtheria: clinic, differential diagnosis.
115. Paratonsillitis and paratonsillar abscess: etiology, classification, treatment.
116. Acute tonsillogenic sepsis: clinic, treatment.
117. Pharyngeal abscess in children: clinic, treatment.
118. Adenoid vegetations: clinic, treatment.

119. Hypertrophy of the tonsils: clinic, treatment.
120. Chronic tonsillitis: etiology, pathogenesis, classification.
121. Local signs of chronic tonsillitis.
122. Types of decompensation of chronic tonsillitis, formulation of the diagnosis.
123. Conservative treatment of chronic tonsillitis.
124. Surgical treatment of chronic tonsillitis.
125. Leptotrichosis: clinic, treatment.
126. Acute pharyngitis: etiology, clinic, treatment.
127. Chronic pharyngitis: etiology, forms, clinic, treatment.
128. Acute catarrhal laryngitis: etiology, clinic, treatment.
129. Laryngeal tonsillitis: clinic, treatment.
130. Phlegmonous laryngitis: clinic, treatment.
131. Epiglottitis abscess: clinic, treatment.
132. Chondroperichondritis of the larynx: causes, clinic, treatment.
133. Acute stenotic laryngotracheitis in children: etiology, pathogenesis, clinic.
134. Acute stenotic laryngotracheitis in children. Intensive care.
135. Chronic laryngitis: etiology, forms, clinic.
136. Paresis and paralysis of the larynx: causes, laryngoscopic picture, principles of treatment.
137. Juvenile angiofibroma of the nasopharynx: clinic, diagnosis, methods of removal.
138. Malignant tumors of the nose and paranasal sinuses: diagnosis, treatment.
139. Malignant tumors of the pharynx: localization, clinic, treatment methods.
140. Benign tumors of the larynx.
141. Papillomatosis of the larynx in adults and children.
142. Precancerous diseases of the larynx.
143. Laryngeal cancer: etiology, localization, clinic, stages of disease development.
144. Principles of early diagnosis of laryngeal cancer.
145. Treatment of laryngeal cancer.
146. Surgical treatment of laryngeal cancer, its types, indications.
147. Scleroma of the upper respiratory tract: etiology, pathoanatomy, stages, treatment.
148. Tuberculosis of the upper respiratory tract: clinical manifestations, differential diagnosis.
149. Syphilis of the upper respiratory tract: features of clinical manifestations, differential diagnosis.
150. The importance of preventive examinations and medical examinations in the prevention of diseases of the ENT organs and their complications.
151. Foreign bodies of the ear, ways to remove them.
152. Bleeding from the ear.
153. Injuries to the ear, traumatic rupture of the eardrum.
154. Foreign bodies of the nose. Removal tools. Rhinoliths.
155. Injuries of the nose and paranasal sinuses: classification, clinic, treatment.
156. Nasal bleeding: causes, symptoms, methods of stopping.
157. Foreign bodies of the pharynx: clinic, treatment.

158. Stenosis of the larynx: definition, causes of acute and chronic laryngeal stenosis.
159. Stages of laryngeal stenosis, principles of treatment (drug, prolonged intubation, tracheotomy).
160. Tracheostomy: indications, its variants, technique.
161. Foreign bodies of the esophagus: clinic, diagnosis, methods of removal.
162. Complications of foreign bodies of a gullet: clinic, medical tactics.
163. Burns of the esophagus: causes, diagnosis, clinical stages.
164. First aid for burns of the esophagus.
165. Foreign bodies of the respiratory tract: causes of aspiration, history, characteristics of foreign bodies.
166. Foreign bodies of the larynx: clinic, methods of removal in adults and children.
167. Foreign bodies of a trachea: clinic, methods of removal.
168. Foreign bodies of bronchial tubes: types of stenoses, clinic, methods of removal.
169. Sense of smell at SARS-Cov-2 (COVID-19).