LECTURE COMPLEX

Subject: "Propaedeutics of Internal Diseases"

Subject Code: PVB 2219

Name and code of the department: 6B10117 "Dentistry"

Hours/credits: 120 s (4 credits)

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Lecture length: 8

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Lecture No. 1

1. Subject:Questioning, examination, palpation, percussion, and auscultation of the chest of patients with respiratory pathology. Diagnostic value.

2. Objective: to familiarize students with general concepts of respiratory diseases. Technique survey, examination and palpation, percussion, auscultation of the chest of patients with respiratory pathology and their diagnostic value.

3. Lecture abstracts:

A general examination reveals many symptoms that occur in respiratory diseases.

Among the main symptoms of severe respiratory failure in a pulmonary patient is the development of loss of consciousness, which indicates cerebral hypoperfusion. The patient's general appearance, position in bed, skin color and visible cream, the presence of swelling, and the unusual shape of the distal phalanges (fingers with a "stick-like" appearance) are all factors to consider.

Considerations include:

• examine the nasal cavity;
• voice change;
• look at the chest;
• assessment of respiratory parameters

Examination of the nasal cavity:

• changes in the external shape of the nose;
• condition of the nasal mucosa;
• herpes rashes (observed on the affected side);
• breathing method (through the nose, through the mouth, free, difficult);
• paranasal sinuses (are they painful when palpated?);
• nasal discharge (small amount, none, large amount, creamy, purulent, bloody);
• movement of the wings of the nose (with or without).

Larynx:A change in voice (hoarseness, aphonia) can be a sign of many diseases, except for respiratory diseases (laryngitis, laryngeal cancer, vocal cord polyps, etc.).

Breast

Examination of the mammary glands should be carried out strictly in the following sequence:

• breast type;
• symmetry of the chest;
• breathing excursion (measuring chest circumference);
• assessment of respiratory parameters;
• breathing type (thoracic, abdominal, mixed).

When examining a patient, undress to the waist, while standing or sitting, and ensure uniform light from all sides.

Breast type

Constitutional types:normosthenic, hypersthenic, asthenic.

Criteria for determining the constitutional shape of the chest:

• ratio between the anterior-posterior and horizontal diameter;
• direction of movement of the ribs and clavicles;
• volume of partitions;
• clarity of the angle of connection of the body of the chest and the handle (Louis angle);
• size of the epigastric angle;
• Shoulder position outside the chest.

Variations of the normal breast type

♦Normosthenic:
- the front-back dimension is larger than the horizontal dimension;
- the walls are curved downwards, the spaces between the walls are unclear;
- epigastric angle 90°.
♦ Asthenic:
- the front-back dimension is larger than the horizontal dimension;
- the walls are very low, the walls are clean;
- epigastric angle below 90°;
♦ Hypersthenic:
- the front-back size is equal to the horizontal size;
- the walls are horizontal, the partitions between the walls are narrow;
- epigastric angle more than 90°.

Pathological forms of the chest

♦ Emphysematous - short, greatly expanded, barrel-shaped, horizontal ribs, greatly expanded intercostal spaces and raised shoulders (resembling a state of maximal deep breathing), bulging in the supraclavicular region, decreased elasticity of the chest upon palpation and a box-shaped percussion sound. Percussion of patients with pulmonary emphysema is characterized by...

♦ Thin shoulder blades - very long, flat, ribs strongly inclined downwards, clavicles strongly advanced forward, supraclavicular fossae lowered (similar to the position of maximum exhalation), which is typical for emaciated patients, especially those with tuberculosis.

♦ Mechel (rickety, bird's breast) - the chest is sunken on the sides, the chest protrudes forward ("chicken breast") and the edges of the ribs that connect to the cartilages are thickened and rough ("Mechel's bumps"), found in patients with mechel in early childhood.

♦ Funnel chest (“cobbler’s chest”) is a congenital depression in the lower part of the chest.

♦ Boat chest is a congenital oval depression at the level of the upper and middle part of the chest.

♦ Curvature of the spine: lateral - scoliosis, forward - lordosis, backward - kyphosis and kyphoscoliosis, causes very clearly developed asymmetry of the chest laterally and backward (injuries, skeletal anomalies, tuberculous lesions of the bones, metacarpus, etc.).

Symmetry of the two halves of the chest The chest is assessed in vertical and lateral light, with free, normal breathing from the front and back. Respiration symmetry is determined by examining the chest from the front and back against the background of the patient's deep breathing movements. Then, from the front, the position of the wall arches with convenient landmarks and their respiratory excursion are assessed; from the back, the position of the eyelids and their movements during breathing are assessed. In patients with an asthenic physique, the pubic space is narrow, so the patientThe patient should be asked to raise their arms onto their shirt and extend their elbows out to the sides. At this point, the costal arches are well-developed, and a slight hollowing of one side of the chest may be noticeable when breathing. When examined from behind, the patient's arms are free at their sides (Table 3). The movements of the two halves of a normal chest are symmetrical.

Palpation of the chest. Voice vibration

When palpating the chest, the following is assessed:
• elasticity (resistance);
• voice vibration (unchanged, increased, weakened, absent, location of change);
• localization of pain;
• detection of pleural friction noise when stroking;
• determination of the degree of excursion - determination of the chest circumference at the level of 4 intercostal spaces: with calm breathing, deep inhalation and exhalation.

Breast elasticity It is determined based on the degree of ossification of the costal cartilages and their rigidity when pressing on the chest.

Reasons for decreased elasticity (rigidity) of the breast:
• pronounced hardening of the lung tissue;
• hydrothorax;
• pulmonary emphysema;
• pleural cancer.

Voice vibration—When the patient pronounces words containing the "P" sound ("forty-four"), the air passages from the vocal cords and lung tissue are arranged symmetrically along the outer aspect of the chest. Noticeable vibrations are detected in these areas. An assessment of the transmission of low-frequency sound vibrations at this time is necessary. In patients with a low-pitched voice, strong vocal vibration is observed in the right half and upper chest, especially in the apex (the short right bronchus transmits sound more strongly). In women, vocal vibration is poorly transmitted (due to the high-pitched voice).

The vibration of the voice depends on the permeability of the bronchial tree, the density of the lung tissue and the barrier to the transition of vibrations from tissue with the same density to tissue with a higher or lower density (the phenomenon of separation of conducting media). , where vibrations are veryweakens). Normally, vocal vibration is evenly distributed in symmetrical foci of the right and left chest, formed as a result of vibration of the vocal cords.

Auscultation of the lungs

Auscultation— an objective examination method using auscultation of sounds produced by the working organs. Depending on the nature of the sounds, the organs that can be heard are differentiated.checks physical condition.

When performing auscultation, the following rules should be observed:
• the room should be quiet and warm;
• The patient's chest should be completely exposed and the patient should be in an upright position.need to stay;
• the doctor's position should be comfortable and free;
• the stethoscope (phonendoscope) should fit tightly to the patient’s body and not press too hard;
• The patient should breathe deeply and calmly through the nose. It is necessary to ask the patient to take several deep breathing movements, and then breathe calmly and freely;
• during auscultation it is necessary to constantly determine the phase of breathing based on the movements of the patient’s chest;
• at least 2 breathing cycles should be heard at each auscultation point;
• Only one stethoscope (phonendoscope) should be used.

Auscultation procedure:
• it is necessary to regularly listen to symmetrical points in both halves of the chest (in areas of relative percussion type).
• begin auscultation from the healthy side if there is information about possible injury sites;
• auscultation begins from the ends of the lungs, then the phonendoscope is passed from the front of the chest from top to bottom, then the axillary fossa, lateral and posterior parts of the chest are listened to;
• when auscultating the lungs in the lateral part of the chest, the patient raises his hand to his head;
• during auscultation of the interscapular space, the patient, under the guidance of the doctor, places his hand on the chest, then the scapula moves outward from the spine;
• listens to the above-mentioned foci through the nose against the patient’s free background in order to assess the main respiratory sounds;
• if additional breathing noises appear, the following special methods are used to determine the nature of the sounds: the patient should breathe deeply through the mouth, breathing is heard against

the background of an increased inhalation and exhalation, after coughing, in a lying position on the floor, on the side or on the back, the doctor asks the patient to breathe with a tightly inserted stethoscope and uses other diagnostic methods.

During auscultation of the lungs the following is assessed:

• basic breathing sounds (breathing patterns);
• additional breathing sounds in the lungs and their nature;
• bronchophony.
• the stethoscope (phonendoscope) should fit tightly to the patient's body and not press too hard;
• The patient should breathe deeply and calmly through the nose. It is necessary to ask the patient to take several deep breathing movements, and then breathe calmly and freely;
• during auscultation it is necessary to constantly determine the phase of breathing based on the movements of the patient's chest;
• at least 2 breathing cycles should be heard at each auscultation point;
• Only one stethoscope (phonendoscope) should be used.

4. Illustrative material:presentation.

5. Literature:shown on the last page of the syllabus.

6. Control questions (feedback):

1. What are the main and secondary complaints in respiratory diseases?
2. What is cough and pain?
3. Types of breast cells.
4. What is palpation?
5. Describe the percussion of the chest cells.

Lecture No. 2

1. Subject: Leading clinical syndromes (pulmonary tissue compaction, bronchial obstruction, increased airiness in the lung, presence of fluid and cavity in the lung, respiratory) in pulmonology.

2. Objective: To introduce the leading clinical syndromes in pulmonology and their characteristics. Diagnostic value.

3. Lecture abstracts:

Pulmonary tissue consolidation syndrome, orpulmonary consolidationThis is a radiographic and clinical sign indicating the filling of the air sacs with various substances (exudate, blood, water, transudate, etc.), leading to compaction of the lung tissue. This condition can be a consequence of pneumonia, tuberculosis, tumor infiltration, and other diseases. Clinically, it manifests as shortness of breath, cough, lag of the affected side of the chest during breathing, increased vocal fremitus, and dullness to percussion.

Reasons

- Pneumonia: - the most common cause in which the alveoli become filled with inflammatory exudate and fibrin.
- Infiltrative tuberculosis.
- Blood ingress: (for example, in case of pulmonary contusion or infarction).
- Pulmonary edema: (when filling with transudate).
- Tumors and their metastases.

Clinical manifestations

In the presence of pulmonary tissue consolidation syndrome, the following may be observed:

- Dyspnea: (especially with fractional compaction).

- Cough, sometimes with sputum (mucous, purulent, "rusty").
- Chest pain: when the pleura is involved.
- Lagging of the affected side of the chest: when breathing.
- Increased vocal fremitus.
- Dullness of percussion sound.
- Bronchial or bronchovesicular breathing.
- Wet rales.

Diagnostics

- X-ray and CT scan

— areas of compaction that are impermeable to X-rays are identified, where the normal pulmonary pattern is not visible.

- Physical examination

— allows you to detect characteristic changes during percussion and auscultation.

- Laboratory research

— may show moderate leukocytosis and increased ESR.

Propaedeutics of bronchial obstruction syndrome (BOS) includes history taking, physical examination (inspection, palpation, percussion, auscultation), laboratory and instrumental tests, and assessment of respiratory function (spirometry). The main manifestations of BOS are cough, expiratory dyspnea, suffocation, and wheezing, detected by auscultation.

Anamnesis (collection of complaints and medical history)

- **Complaints:**

Paroxysmal cough (dry or with sputum production), difficulty exhaling, feeling of suffocation, lack of air.

- **Medical history:**

Identification of the causes that provoke obstruction (infections, allergens), history of bronchial asthma, COPD, chronic bronchitis, or other diseases accompanied by BOS.

Objective research

- **Inspection:**

Pay attention to the respiratory rate, the involvement of accessory muscles in breathing, body position (in case of orthopnea), and the possible use of inhalers.

- **Percussion:**

May reveal signs of emphysema or hypoventilation (dullness of sound).

- **Auscultation:**

Identification of characteristic symptoms: dry wheezing on exhalation, prolonged exhalation, scattered wheezing throughout the lung fields.

The diagnosis of pulmonary emphysema syndrome includes patient complaints such as increasing shortness of breath, cough (often unproductive), weakness, and external signs such as a barrel-shaped chest, widened intercostal spaces, and the involvement of accessory muscles in respiration. To confirm the diagnosis, a physical examination (percussion, auscultation), instrumental methods (X-ray, CT scan of the lungs, spirometry), and laboratory tests (blood gas analysis) are performed.

Collection of complaints and anamnesis

- **Dyspnea:**

the main symptom, which initially occurs during physical exertion and then at rest.

- **Cough:**

can be dry and unproductive, especially whenaccompanyingCOPD.

- **General weakness and fatigue:**

associated with impaired gas exchange and decreased oxygen saturation.

- **Increased air accumulation:**

leads to difficulty exhaling, as a result of which a person cannot exhale fully, which is manifested by shallow breathing and the use of pursed lips.

4. Illustrative material:presentation.
5. Literature:shown on the last page of the syllabus.
6. Control questions (feedback):
1. Percussion in case of compaction of lung tissue?
2 Auscultation in pulmonary emphysema?
3 How is chest palpation performed?

Lecture No. 3
1. Topic: Questioning, examination, palpation, percussion, and auscultation of patients with cardiovascular pathologies. Diagnostic value.
2. Objective: To study the methods of clinical research and semiotics of cardiovascular damage.
3. Lecture abstracts:
Examination of the apex of the heart and heartbeat by palpation. Palpation can detect the apical impulse, general heartbeat, pulsation around the heart, and chest vibration. To determine the pressure at the end of the heart, place the palm of your right hand on the heart, fingers pointing toward the axilla and lying between the third and fourth ribs. The palm should cover the tip of the heart. Once the tip of the heart has been located, note its general character. Palpation examines the location of the apex of the heart, its area, strength, height, and elasticity. To do this, pinpoint and mark the location of the tip of the heart with the tips of the three fingers of the right hand mentioned above. If the tip of the heart is significantly tilted, the lowest point can be selected. Ask the patient to tilt their chest forward, as this will allow for comfortable feeling of the pressure at the apex.
The cardiac impulse area refers to the movement of the rib cage under the action of the impulse; its diameter is normally 1-2 cm. If it is greater than 2 cm, it is considered widespread, while if it is less, it is considered restricted. A widened pulse indicates an enlarged heart, which occurs in people with hypertension, widened intercostal spaces, and contraction of the lower part of the left lung. Obesity, lung disease, and a low diaphragm lead to a restricted pulse pattern, meaning the heart meets a small rib cage.
Heart rate- refers to the amplitude of chest vibration. Heart rate is divided into high and low.
When palpating, the pressure exerted by the apex of the heart on the fingers is called apical pressure. This pressure depends on the contraction of the left ventricle. Like the two previous properties, the force of the impulse depends on the thickness of the chest cavity and the proximity of the apex to it. Most importantly, it corresponds to the force of left ventricular contraction.
Palpation reveals the elasticity of the cardiac impulse, indicating that with hypertrophy, the left ventricular muscle becomes more elastic and flexible. When the left ventricle is significantly thickened, a "dome-shaped" impulse is felt, as the heart is in close contact with the chest cavity.
Normally, the apex of the heart is located 1-2 cm to the right of the midclavicular line between the 5th ribs. If the patient is lying on their left side, this point may shift to the left by 2 cm, and if they are lying on their right side, it may shift to the right by 1-1.5 cm. Such changes should not occur when the patient is standing. Extracardiac factors also influence the displacement of the apex of the heart. These include an elevated diaphragm, changes in chest volume, collapsed lungs, and other factors. There are causes.

Due to increased abdominal pressure, the chest wall rises (eg, cysts, obesity, pregnancy, etc.). During this period, the apex of the heart shifts to the left, rises upward, and lies horizontally. Conversely, when the chest wall descends (due to decreased abdominal pressure, pulmonary emphysema, asthenic body type, obesity, visceroptosis), it decreases. All this affects the position of the cardiac triangle, which rotates downward, to the right, and vertically.

Increased pressure on one side of the lung cavity is possible, which often occurs with fluid accumulation, for example (in pleural effusion, unilateral hydrothorax, or hemothorax) when the heart shifts to the opposite side. At this time, the tip of the heart moves accordingly.

When the lung shrinks and decreases in volume, as well as with obstructive atelectasis (spread of cancer from the bronchus to the lung, or foreign bodies), the apex of the heart shifts toward the affected side. Dilation and thickening of the left ventricle due to heart disease (aortic valve defect, bicuspid valve insufficiency, increased blood pressure in the systemic circulation, atherosclerosis, cardiosclerosis) shifts the impulse of the apex of the heart to the left; due to aortic valve insufficiency, it moves to the left and downward.

In congenital anomalies, if the abdominal structures are located on the opposite side (situs vicecrum inversus), the heart lies on the right side, therefore the three cardiac impulses are also on the right side.

Of particular note is -If a large amount of bone accumulates in the pericardium, the apical impulse is not felt at all and does not correspond to the relative dullness. If fluid accumulates in the left pleural cavity (exudative pleurisy, hydrothorax, hematothorax), the apical pulse is not palpable.

If the pericardium is attached to the chest, then in the systole phase the heart moves backward instead of moving forward, such an impulse is known as the negative impulse of the end of the heart.

In addition to the atrial impulse, it's important to pay attention to the cardiac impulse, which describes the function of the right ventricle. In healthy people, this impulse is absent, making it very difficult to detect. Heart rate is determined by palpation of the ventricle for thickening (hypertrophy) and widening (dilation).

The diagnosis of the symptom "cat's purr" (flemissement sataree—cat's purr) is of great diagnostic importance, and it was developed by French scientists. The reason for this name is that upon palpation of the heart, you will feel a purring sound, similar to that heard when stroking a cat's back. This symptom occurs due to narrowing of the mitral orifice during diastole, narrowing of its cusps in the aorta during systole, and due to patent pulmonary artery or Battalian ductus arteriosus in the pulmonary column.

4. Illustrative material:presentation.

5. Literature:shown on the last page of the syllabus.

6. Control questions (feedback):

1. What is a "chest frog"?
2. What are the causes of heart failure?
3. How is the apical trigger described and where is it located?
4. How is relative heart failure defined?
5. Why is absolute heart failure defined?

Lecture No. 4

1. Topic: Leading clinical syndromes (high blood pressure and coronary heart disease, acute and chronic coronary insufficiency, valvular lesions) in cardiology

2. Objective: To master the semiotics of damage to large and peripheral vessels and methods of clinical research.

3. Lecture abstracts:

Arterial hypertension (hypertension) is a persistent increase in blood pressure (BP) above 140/90 mmHg. This condition requires attention, as it can cause irreversible changes in the heart and blood vessels., leading to heart attacks, strokes, and other dangerous complications. Diagnosis is made after several blood pressure measurements, and treatment involves medication and lifestyle changes.

Definition and reasons

- **Definition:**

Arterial hypertension is a chronic disease in which the walls of blood vessels are constantly under increased pressure.

- **Reasons:**
- **Essential hypertension:**In 95% of cases, hypertension occurs without obvious secondary causes, in 5% of cases it occurs as a symptom of other diseases.
- **Risk factors:**These include:height, heredity, smoking, alcohol abuse, obesity, lack of physical activity, diabetes.

Symptoms

- **Often asymptomatic:**

Many people do not experience any symptoms of hypertension, so it is important to measure your blood pressure regularly.

- **Signs of high blood pressure:**

At blood pressure values of 180/120 mmHg and higher, the following may occur: severe headache, chest pain, dizziness, blurred vision, tinnitus, nausea, vomiting, nosebleeds.

Coronary artery disease (CAD) is a condition in which the heart muscle receives insufficient blood supply due to narrowing of the coronary arteries, leading to oxygen starvation. It can be acute (acute coronary syndrome, myocardial infarction), occurring suddenly and requiring immediate medical attention, or chronic (angina, heart failure), occurring with exertion and characterized by a longer course.

Coronary heart disease (CHD)

- **What is this:**

A chronic cardiovascular disease caused by a lack of oxygen and nutrients to the heart muscle (myocardium) due to narrowing or blockage of the coronary arteries.

- **Reasons:**

In most cases, coronary heart disease occurs due to atherosclerosis>> – the accumulation of cholesterol plaques on the walls of blood vessels.

- **Symptoms:**

The most common symptoms are pain or discomfort behind the breastbone (angina), shortness of breath, weakness, and sweating.

Types of coronary insufficiency

- Acute coronary insufficiency (ACS) / acute coronary syndrome (ACS)**
- **Manifestations:**This is a sudden-onset condition requiring emergency medical care. ACS includes unstable angina and myocardial infarction.
- **Symptoms:**Severe pressing pain behind the breastbone, which may radiate to the arm, back or abdomen, shortness of breath, nausea, sweating, dizziness.
- **Consequences:**May cause death or permanent damage to the heart muscle (heart attack).
- Chronic coronary insufficiency**
- **Manifestations:**A condition with a more gradual onset, often characterized by stable attacks of painbehind the sternum, arising during physical or emotional stress (angina pectoris).
- **Symptoms:**Attacks of crushing pain behind the breastbone, which usually pass with rest or after taking nitroglycerin.

- **Consequences:**Includes chronic heart failure and heart rhythm disorders.

Auscultation

The heart should be listened to in the following order.

The patient's position. When listening to patients with cardiovascular diseases, the physician should get used to listening to them in any position, that is, both standing and lying down. In some cases, patients hear sounds associated with heart defects better. For example, a protodiastolic murmur caused by aortic valve insufficiency is better heard when the patient is standing, and a systolic murmur caused by bicuspid valve insufficiency is better heard when the patient is lying down. Stenosis of the bicuspid valve is best heard when the patient is lying on the left side. A pericardial friction rub, at the base of the heart, is clearly audible and better heard when the patient is leaning forward.

Doctor's position: During cardiac arrest, the physician should stand to the patient's right. Nothing should prevent the physician from placing the stethoscope at the listening positions.

Direct and stethoscopic adjustment.A stethoscope or phonendoscope is used to listen to the heart to distinguish the sounds occurring at each point within the heart. Some sounds are better heard when listening directly to the heart. If you listen to the heart of a healthy person, you may hear a third sound in addition to the two sounds.

It's important to listen to the heart during each phase of breathing: listening to the heart without breathing is very difficult because the sound in the lungs interferes with the heartbeat and isn't heard. To do this, the patient rests, exhales completely, and then calms the heart without breathing. The pause shouldn't be too long, and this listening technique can be repeated several times.

Heart auscultation points and their location in front of the chest. The openings of the heart valves are located at the base of the heart, they are very close to each other at the front of the chest (Fig. 28). The projection of the bicuspid valve is on the left at the junction of the third rib with the mammary gland; and the aortic valve is in the middle of the chest at the cartilage of the third rib; the pulmonary valve is on the left side of the chest, between the second rib; the tricuspid valve is behind the sternum, in the middle of the line passing between two points, i.e. at the junction of the cartilage of the third rib on the left and at the junction of the cartilage of the fifth rib on the right.

Naturally, the close proximity of the valves greatly complicates the distinction between heart sounds. Therefore, based on many years of clinical observation based on cardiac auscultation points and where the sound from each valve is best transmitted, the following conclusion was reached: it has been proven that the sound produced by the bicuspid valve is best heard with the entire heart..

The aortic valve is located on the right side of the chest between the second ribs (B). The pulmonary artery is on the left side of the chest up to the second intercostal space (B). The tricuspid valve is located on the underside of the mammary gland at the base of its xiphoid process (G).

An additional point from the aortic valve of S. P. Botkin, and this point is named after S. P. It is called Botkin's point. It corresponds to the attachment of the third and fourth ribs to the left side of the sternum. Among the mentioned points is the bicuspid valve, which does not reach its true projection. The sound produced by this valve passes through the thick muscle of the left ventricle into the chest during the systole phase, making it more audible. The aortic valve is located between the second rib—on the right side of the sternum—at a distance from its true projection; the sound produced is directly related to blood flow.

Cardiopulmonary resuscitation. The heart's sound is silenced in the following order: the first of three tricuspid valve sounds (point one). The aortic valve is located on the right side of the second intercostal space (point two), then the pulmonary valve (point three) is located between the left second intercostal space. On the underside of the chest, at the base of the scapula, is the trilobe valve

(point four). Finally, there is Botkin's point, located on the left side of the chest between the third and fourth ribs. At this point, the sound coming from the aortic valve is muffled. Heart valve defects most often occur in the bicuspid and aortic valves.

Listening to the heart after physical exertion is very helpful. If the heartbeat is not clearly audible during cardiac arrest, and the patient's condition allows, ask the patient to stand up and bend their knees several times. At this point, the rapid contraction of the heart muscle accelerates blood flow, which helps to clearly distinguish the sound (presystolic murmur due to stenosis of the bicuspid valve).

Sounds heard when listening to the heart of a healthy person. Under normal conditions, healthy people hear two sounds (tones) at five points:The first heart sound occurs during the ventricular systolic phase, which is why it's called the systolic heart sound. The second heart sound occurs during the ventricular diastolic phase, which is why it's called the diastolic heart sound. After the first heart sound, there's a short pause, which corresponds to the time it takes for blood to be pumped out of the ventricle (lasting 0.20 seconds). When listening to the heart, you can't hear the blood flowing from the ventricle into the aorta and pulmonary artery at this stage because the space between the ventricle and the blood vessels is wide and there are no obstructions to the blood flow. Therefore, the blood flows silently, and no additional sounds are heard at this time.

The first sound (tone) consists of a short pause, that is, the systolic phase of the ventricle.

IIAfter the sound (tone), there is a long pause as blood passes from the atrium into the ventricle. Since the atrioventricular opening is normally wide, blood passes into the ventricle without sound. Therefore, there is no sound.IIThe long pause after the sound (tone) consists of ventricular diastole. The long pause is about 0.43 seconds. It lasts. In some casesIn addition to the first and second sounds (tones), you can also hear the third and fourth sounds (tones) (Fig. 29).

IIIsound (tone) – B. P. Obraztsov was the first to hear and record the mechanism of its formation. When this ventricle quickly fills with blood,

Mechanism of heart sounds (tone). To better understand the mechanism of this, it's first necessary to understand the function of the heart. First, it's necessary to understand the phase of atrial contraction, then the contraction of the ventricles and the expulsion of blood. To understand the origin of heart sounds, it's necessary to understand the phases of the cardiac cycle.

Contraction of the ventricle and its initial special stages:

1. The phase of asynchronous contraction; during this time, almost the entire myocardium does not contract, i.e., the entire area is not covered, and the pressure inside the heart does not increase.
2. The isometric contraction phase; during this time, parts of the main areas of the myocardium contract, during this phase the atrioventricular valves close, and intraventricular pressure begins to increase.
3. The blood pumping phase: As a result of increased pressure inside the ventricle, the valves of large blood vessels open. This is how the blood flows (or wanders).

After pumping blood, the ventricle begins to relax—this is the period of diastole, during which the open aortic valves close. Although the atrioventricular and mitral valves are closed, the ventricles remain relaxed until the pressure in the ventricles falls below the pressure in the atria (the isometric relaxation phase). After this, the atrioventricular orifices open, and blood begins to flow into the ventricles. At the beginning of diastole, the pressure difference between the atria and ventricles is very large, causing the ventricle to quickly fill with blood (the rapid filling phase). Later, blood flow begins to slow (the saturation phase). Then, atrial systole begins, and the cardiac cycle repeats.

SoundThe first heart sound (tone I) is formed by the sounds of the onset of systole. This sound is produced by contraction of the ventricular muscles (muscular component). This influences the movement and closure of the atrioventricular valves, as well as the movement of the papillary

passage (valvular component). In addition, the formation of the first heart sound (atrial component) is also facilitated by contraction of the atria. We have learned that during the transition of blood from the ventricle into the vessels (in its first phase), movement of the aorta and pulmonary artery (vascular component) occurs. Thus, the first heart sound is produced by the action of isometric forces on the ventricles and the initial pumping of blood into the vessels. The duration of the first heart sound (tone I) is 0.08-0.12 seconds.

The mechanism of the second sound is caused by the closure of the aortic and pulmonary valves and the movement of blood vessels. Its duration is 0.05-0.08 seconds.

How to distinguish ventricular systole from diastole at rest?

When the heart is at rest, it is important to distinguish between ventricular systole and diastole. This is crucial in diagnosing heart disease.

It can be detected in congenital heart valve defects (insufficiency of the bicuspid and tricuspid valves, stenosis of the aorta) and congenital heart defects (stenosis of the pulmonary artery, non-closure of the Batalov tube and rupture between the ventricles).

At this time, systolic murmurs are heard in the heart; similar sounds can also be heard with other defects (narrowing of the left and right atrioventricular orifices, a murmur heard in the diastolic phase due to atrial valve insufficiency). (The aorta and pulmonary artery are also affected.) Therefore, it is very important to distinguish between these defects – it is necessary to know the mechanism by which the murmurs appear and in which phase of the heart.

To distinguish systole from diastole,It's important to distinguish between the first sound (tone) and the second sound (tone). Between the first sound (tone) and the second sound (tone), there is a short pause, which corresponds to ventricular systole, i.e., consists of the first sound followed by a short pause. The second sound (tone) is ventricular diastole before a long pause. Both sounds have distinct characteristics.

1. The sound (tone) sounds better from the heart, increasing in volume and being distant.
2. The second sound (tone) appears after a short pause. This is because sounds in the bicuspid valve travel well to the end of the heart. The first sound (tone) is produced by increased contraction of the left ventricle and movement of the chordal fibers of the valve leaflets. The second sound (tone) originates at a distance from the body and transmits poorly in this area.
3. The first sound (tone) corresponds to the heartbeat, the beating of the carotid artery and the pulse.
4. The second sound is more pronounced than the first sound between the ribs on the right (aorta) and at the edge of the chest on the left (pulmonary artery). The second sound, caused by the closure of the sphincter valves, is also clearly audible here.

Other flutters (pulsations) near the heart

Aortic pulsation is not noticeable in healthy individuals, except in asthenic patients. It is palpable only when the aorta is dilated. If the upper aorta is dilated, it can be seen on the right side of the aorta, and if the aortic arch is dilated, it can be seen on the sternum.

Epigastric pulsation (Hatzer's sign) is a visible heave of the abdomen synchronous with the heartbeat, caused by enlargement of the right ventricle, as well as the pulsation of the abdominal aorta and liver. If the epigastric pulsation is caused by the pulsation of the right ventricle, it is more noticeable during inspiration, while if caused by the pulsation of the abdominal aorta, it, conversely, becomes less and less noticeable during expiration. Liver pulsation can be palpated. Liver shock is often caused by tricuspid valve insufficiency, which occurs due to blood flowing from the right atrium into the inferior vena cava and back into the hepatic veins during systole.

4. Illustrative material:presentation.

5. Literature:shown on the last page of the syllabus.

6. Control questions (feedback):

1. Name the causes of heart murmurs.
2. What is heard during cardiac auscultation?
3. Diagnostic value of heart murmurs.
4. What is the cause of jugular vein pulsation?
5. What are the causes of carotid pulse?
6. Difference between positive and negative venous pulse.

Lecture No. 5

Subject:Methods of examination of patients with digestive system pathology.**Palpation, percussion, auscultation. Leading clinical syndromes in gastroenterology and hepatology (gastric and intestinal dyspepsia, jaundice and liver failure)Diagnostic value.**

1. **Objective: to familiarize students with the risk factors for gastrointestinal diseases in order to identify risk groups and conduct a comprehensive medical prevention program (CMP).**
2. **Lecture abstracts:**

Dysphagia— impaired passage of food through the esophagus. This is one of the most common symptoms of esophageal disease. The patient feels food stuck in the esophagus (stomach) and pain. Dysphagia is caused by organic or functional stenosis of the esophagus. Organic stenosis begins gradually, but with cancer, it becomes more severe. First, the passage of thick foods is impaired, then soft foods, and finally liquid foods. As the cancer dissipates, there is a sensation that esophageal permeability is restored, albeit temporarily. Dysphagia immediately occurs when a foreign object enters the esophagus, as well as when the esophageal mucosa is burned due to toxic substances. It can also be caused by foreign bodies entering the esophagus and compressing it, most often with an aortic aneurysm or pericardial tumor. Functional narrowing of the esophagus is undoubtedly caused by the reflex action of the muscles of the esophagus, i.e. due to their innervation during neuroses, as well as strong narrowing and contraction of the muscles of the esophagus.

Disease (dolor)*)* —This occurs with inflammation of the creamy layer of the esophagus, known as esophagitis. When the inner layer of the esophagus is burned by alkalis and acids, the patient feels pain along the entire length of the esophagus. Esophageal diseases can radiate to both sides of the esophagus. Patients with cardiac achalasia typically experience pain in the back, upper sternum, neck, under the chin, and jawbone. The duration of the illness can last several minutes or hours. Pain in the esophageal opening in the diaphragm or with gastroesophageal reflux disease radiates to the left side of the chest and is felt as heart pain.

Vomiting (ethesis, vomitus)*)* —This occurs due to a narrowing of the esophagus. Food accumulates from the narrowed part of the esophagus into the dilated part, and as a result of muscle contraction, it is reflexively pushed out. Vomiting has several symptoms: it is not vomiting; the patient feels as if food is stuck. When examining the contents of the vomit, it is necessary to ensure there are no undigested food particles or hydrochloric acid or pepsin. If the vomit has a foul odor, this indicates an esophageal diverticulum or a cancerous tumor.

Regurgitation of food from the esophagus occurs when it is unable to pass through a narrowing of the esophagus. This symptom is often observed in diseases of the nervous system. However, it can also be caused by a narrowing of the lower esophagus.

Salivation -This symptom occurs with esophagitis. Narrowing of the esophageal opening (overstrain and narrowing), sometimes due to cancer.

It smells rotten— in esophageal cancer and achalasia of the cardia, it occurs due to the accumulation of food waste and its decay.

Irritation*(rhinos)* Symptom: A sensation felt in the lower chest. This is caused by regurgitation of food from the stomach into the lower esophagus, as well as the development of reflux esophagitis.

Bleeding. It is observed with esophageal ulcers, as well as due to esophageal trauma caused by foreign bodies and malignant tumor decomposition. Sometimes, esophageal vein dilation occurs due to bleeding from a blood vessel, the connection of its creamy layer with the cardiac portion of the esophagus and stomach, increased tension in the area, or a small rupture of the vessels (Mallory-Weiss syndrome).

Medical history

The disease progression is aggravated by organic lesion of the esophagus, and in functional esophageal diseases (achalasia cardia), it can sometimes alternate repeatedly depending on the patient's mental state. By questioning the patient's medical history, it is possible to determine whether the patient has had an esophageal burn (alkaline or acid). It is important to know what other illnesses the patient has had in the past, especially syphilis. The patient's complaints are associated with dysphagia and sometimes syphilitic changes. The presence of a lateral esophageal pouch may be a consequence of previous bronchiadenitis, especially tuberculosis.

Methods of physical research

Physical examination methods are of limited value in diagnosing esophageal diseases, due to the anatomical and topographic location of the esophagus and the limited ability to use direct examination methods. During a general examination, one may notice that the patient is very hungry, as esophageal cancer and achalasia impair the passage of food through the esophagus. With prolonged esophageal stenosis, the upper portion of the esophagus dilates slightly, gradually compressing the lungs and potentially causing restrictive breathing.

Instrumental and laboratory research methods

X-ray examination. During an X-ray examination, the patient swallows a contrast agent, and as it passes through the esophagus, the condition, mobility, location, shape, size, and contour of the cream layer are examined. Currently, the following types of X-ray methods are used: contrast radiography and radiography, the double-enhanced contrast method, X-ray kymography, X-ray television, X-ray cinematography, computed tomography, pneumomediastinography, nuclear magnetic resonance, etc. X-ray images, especially when the patient's position changes in various situations, provide a wealth of information.

Esophagoscopy

Esophagoscopy provides more information than radiography when describing esophageal cancer and ulcers, as well as lesions of the creamy layer (inflammation, atrophy, hemorrhagic and erosive changes). If necessary, a biopsy is taken from the creamy layer of the esophagus, and the resulting material is sent for histological and bacteriological examination. Esophagoscopy allows for a number of therapeutic procedures, including esophageal dilation (blocking), sclerotherapy of dilated varicose veins, polypectomy, and electrical cauterization of blood vessels.

Other research methods

Cytological examination. This method is also used to study esophageal cancer. The sample used is water used to rinse the esophagus, or scrapings taken from a damaged or suspicious area of the cream layer.

Intraesophageal pH-metry. If the intraesophageal pH is below 4.0, measured for 10 seconds, this is a sign of persistent reflux of stomach acid into the esophagus (gastroesophageal reflex).

Esophageal manometry. This method examines the ability of the esophageal muscles to contract. Sensors are placed at different levels of the esophagus. The patient swallows water. Normally, the pressure in the lower esophageal sphincter is 20-40 mm Hg, equivalent to a column of mercury. In achalasia, the pressure increases and the sphincter's ability to relax decreases.

Balloon kymographic method. This method is used to determine functional and structural changes in the esophagus. The patient swallows a syringe with a thin rubber cylinder at the edge, containing approximately 100-200 ml of air. The other end of the tube is connected to a recording device, and an esophagogram is recorded. This method can determine the strength, rhythm, and frequency of esophageal muscle contractions (normally 3 times per minute), as well as excitatory contractions.

Pharmacological tests. The patient is given nitroglycerin sublingually or atropine solution subcutaneously. These medications reduce the tone of the narrowed section of the esophagus and improve its permeability during functional changes. This phenomenon is not observed with organic esophageal stenosis.

4. Illustrative material:presentation.

5. Literature:shown on the last page of the syllabus.

6. Control questions (feedback):

1. What are the main complaints in diseases of the digestive system?
2. Why is it necessary to pay attention to the general appearance of the patient?
3. What types of abdominal palpation do you know?
4. What information does deep abdominal palpation provide?
5. What physical methods are used when examining patients?

Lecture No. 6

1. Item: Leading clinical syndromes (dysuric, nephrotic, nephritic, hypertensive and renal failure) in nephrology.

2. Target: Teaching students about risk factors for urinary tract diseases in order to differentiate risk groups and implement a range of preventive medical interventions.

3. Lecture abstracts:

Patients with kidney disease present with a variety of complaints. The main ones include pain (headache, pain in the kidneys and urinary tract, pain during urination), swelling, urinary incontinence, visual impairment, fever, and itchy skin.

Feeling of pain. In some cases, the patient complains of headache, dizziness, and blurred vision. In acute and chronic nephritis, chronic pyelonephritis, primary and secondary nephrosclerosis, and polycystic kidney disease, almost all complaints are due to high blood pressure. With kidney and urinary tract damage, a sensation of pain and swelling occurs along the urinary tract. In acute and chronic glomerulonephritis and pyelonephritis, the lower back is painful. The healing mechanism in these diseases is primarily related to kidney enlargement and tension of the outer membrane due to blood stagnation. Acute febrile pain, originating in the kidneys and spreading along the urinary tract to the bladder, is characteristic of nephrolithiasis. The mechanism of this pain is due to irritation of the nerve endings of the urinary tract during the movement of the stone through the urinary tract and contraction of the smooth muscles of the urinary tract. Bladder diseases (cystitis, tuberculosis, papillomatosis) can cause pain in the upper eye. And when the bladder is inflamed, pain also occurs during urination.

One of the main complaints of the patient is cancer. It is found in chronic glomerulonephritis, lipoid nephrosis, and renal amyloidosis. The mechanisms of kidney tumor formation are: 1) due to the regular excretion of protein in the urine, the total amount of protein in the blood plasma decreases (hypoproteinemia). Consequently, the oncotic pressure decreases; 2) due to kidney diseases, glomerular filtration and tubular reabsorption are impaired, the excretion of sodium and water is impaired, and water accumulates in the kidneys; 3) the permeability of the capillary walls increases; 4) the neuroendocrine regulation of direct water exchange is disrupted. Kidney tumors develop

rapidly and spread rapidly, starting from the face and spreading to the entire body, pale in color, soft to the touch (Fig. 57). (See color image).

One of the main complaints is urinary incontinence. Its types include polyuria, anuria, oliguria, pollakiuria, nocturia, isuria, dysuria, and stranguria. The amount of urine excreted over a given period of time is called diuresis. Normal urine output in a healthy person is 1-1.5 liters. Your urinary disorder is called dysuria. Polyuria is defined as a daily urine output of more than two liters. The causes of polyuria are mainly divided into extrarenal and renal.

Kidney related causes: 1) balancing stage of renal failure, 2) when the tumor returns.

Non-renal causes of polyuria: 1) diabetes mellitus; 2) diabetes insipidus; 3) when taking diuretics.

OliguriaDaily urine output less than 500 ml. The causes of oliguria can be renal or extrarenal.

Kidney-related causes: 1) acute nephritis; 2) swelling stage of nephrosis; 3) acute renal failure.

Non-renal causes: 1) when the temperature rises (profuse sweating); 2) when vomiting does not stop; 3) when you are pregnant; 4) when you have cancer.

AnuriaUrinary cessation is indicated. Anuria can be caused by renal or extrarenal factors. Renal anuria occurs when the kidneys fail to produce urine (in acute renal failure). Extrarenal anuria is also called ischuria. It occurs due to urinary tract obstruction (stones, tumors, prostatic hypertrophy).

Pollakiuria—Frequent bowel movements. This is typical of bladder problems and bladder inflammation. Normally, urination occurs 4-7 times per day.

Nocturia—Excessive urination at night. Normally, the ratio of daytime to nighttime urine output is 3:1. Nocturia in kidney disease is combined with polyuria.

Isuria—The same amount of urine is excreted each time during the day. Dysuria is pain caused by pain during urination.

Strianguria—Urine is excreted with a burning sensation, a condition characteristic of inflammation of the bladder and urinary bladder.

Changes in urine color. Normally, urine is pale yellow. Urine color varies depending on its concentration and the number of components it contains. If the urine contains bilirubin, it turns green-brown; if it contains urobilin, it turns red-brown; and some medications (such as aspirin) turn pale red.

The color of urine also depends on the amount. Urine is pale yellow with polyuria and dark yellow with oliguria. If the urine is mixed with blood, its color resembles that of a meat bath; if it is mixed with pus, it becomes cloudy and white. Vision impairment is caused by constriction of the ophthalmic arteries and retinal edema. With pyelonephritis, pyelitis, cystitis, and urethritis, the patient develops a fever due to inflammation of the urinary tract. With uremia, the skin itches due to the accumulation of toxic acids in the pores of the sebaceous glands and irritation of the skin's nerve endings, leaving traces of scratching with nails.

History of the disease development. To determine the progression of kidney disease, it is necessary to immediately determine the patient's previous infectious diseases. Acute nephritis is often caused by inflammation of the upper respiratory tract. Chronic infections (tuberculosis, syphilis) and chronic purulent diseases (lung abscess, bronchiectasis, osteomyelitis) lead to the development of renal amyloidosis. Patients poisoned by sulfur, bismuth, and iodine may develop nephronephrosis.

Life history of the disease. The patient should be asked about their previous illnesses: pyelitis, pyelonephritis, acute nephritis, kidney stones, acute typhoid fever, scarlet fever. Women should be asked about their pregnancy, including any tumors or changes in urine during this time. It is crucial for the physician to know whether the patient with kidney disease has had a severe cold that could influence the progression or exacerbation of the disease, as well as their living and working conditions.

Physical corrosion methods

Check. On external examination, the patient's skin is pale and edematous. This pale skin is due to compression of blood vessels by the tumor bone and anemia (decreased erythropoietin production).
Edema associated with kidney disease can vary in severity; from an invisible swelling to a massive mass that can cover the entire body, swelling that spreads throughout the body is called anasarca. Kidney cancer differs from heart cancer in several ways: 1) kidney cancer develops rapidly and spreads rapidly, while heart cancer develops slowly and spreads slowly;
The color of urine also depends on the amount. Urine is pale yellow with polyuria and dark yellow with oliguria. If the urine is mixed with blood, its color resembles that of a meat bath; if it is mixed with pus, it becomes cloudy and white. Vision impairment is caused by constriction of the ophthalmic arteries and retinal edema. With pyelonephritis, pyelitis, cystitis, and urethritis, the patient develops a fever due to inflammation of the urinary tract. With uremia, the skin itches due to the accumulation of toxic acids in the pores of the sebaceous glands and irritation of the skin's nerve endings, leaving traces of scratching with nails.
4. Illustrative material:presentation.
5. Literature:shown on the last page of the syllabus.
6. Control questions (feedback):
1. What are the main complaints of urinary system diseases?
2. What should you pay attention to during a general examination of patients?
3. How is kidney palpation performed?
4. What information does palpation of the kidney provide?
5. What physical methods are used when examining patients?

Lecture No. 7
1. Item: Leading clinical syndromes (hypo-hyperthyroidism and hypo-hyperglycemia) in endocrinology.
2. Target: Teaching students about risk factors for endocrine diseases in order to differentiate risk groups and implement a range of preventive medical interventions.
3. Lecture abstracts:
Collection of life history
When questioning about life history, the place of birth and current place of residence of the Naukaks are determined. For example, the geographic location of a settlement may lead to endemic contamination (in the soil and water of the settlement).due to iodine deficiency).
In childhood and adolescence, individual physical characteristics of sciencesMuch attention is paid to developmental characteristics. Judging by the child's large birth weight and short stature (large height), one may suspect diabetes in the mother or congenital hypothyroidism in the patient.
Endocrine, in addition to diabetes and a number of diseasesThe pathology most often develops at a young age.
Onset of puberty and secondary sexual characteristicsParticular attention is paid to the development of endocrine diseases, which often appear during puberty. When collecting a medical history, it is necessary to determine the patient's past medical history, including any injuries or surgeries, epidemiological, allergy, and medication history.
It is necessary to determine whether there have been any traumatic brain injuries, radiation therapy, or surgeries involving the thyroid gland, hypothalamic-pituitary region, or adrenal glands. Factors leading to the development of infectious toxic poisoning include mental trauma, infectious and inflammatory diseases, traumatic brain injuries, and nasopharyngeal diseases.
Taking a thorough medical history is crucial. The following situations may arise:
• drug-induced thyrotoxicosis and hypothyroidism;

• long-term use of corticosteroids causes iatrogenic Itsenko-Cushing syndrome;
• iatrogenic types of hyperprolactinemia syndrome when using contraceptives, neuroleptics, antidepressants, hormonal drugs;
• toxic damage to the adrenal glands when using cytostatics;
• adrenal insufficiency during long-term treatment with glucocorticoids.

Women should have a complete gynecological history. Endocrine disorders in women can lead to reproductive disorders (infertility, miscarriage, premature birth) and menstrual irregularities.

Hereditary KDNTplays an important role in the development of diseases such as diabetes mellitus, widespread toxic nutrition, obesity, diabetes insipidus, autoimmune diseases of the glands, dwarfism, gigantism.

Examination of patients with endocrine diseases

Endocrine systemPatients with these conditions are examined using standard physical examination methods. These include a general examination, a systemic examination, and a direct examination of the thyroid gland.

In the diagnosis of endocrine diseases—The observation method is a valuable method.

During a general examination, it is necessary to pay attention to the characteristics of the patient's face and behavior:

• mobility, anxiety, frantic gesticulation and a confused, frightened appearance, blinks rarely, eyeballs are swollen, eyes are shiny;
• slowness of movements, drowsiness, swelling of the face without facial expressions;
• the patient's withdrawn nature, indifference to the environment;
• "moon face";
• change in neck shape;
• dimensions and ratio of body parts of the naukas, height:
- giant;
- dwarf;
- increase in the size of the limbs, large face, large head;
• Changes in body hair:
- rare hair loss;
- hair in childrenrapid growth;
- change in hair growth pattern;
• nutritional status and characteristics of fatty crusts:
- weight loss;
- weight gain;
- in the pelvic girdle areaaccumulation of fatty crusts;
- even distribution of fat throughout the body;
- on my mother-in-law's faceaccumulation of fatty crusts;
• skin changes:
- tender, moist, red, hot to the touch;
- skin is pale, pale;
- thin, atrophied,loose skin with many fine wrinkles;
- the skin is hard, thickened, compacted;
- oiliness, acne, stretch marks;
- bronze color.

When the function of the endocrine glands is disrupted, the patient's appearance changes.Acromegaly is characterized by enlarged cheekbones, chin, and nose, as well as elongated legs and arms.

Acromegaly is a disorder characterized by disproportionate growth of the skeleton, soft tissues, and internal organs due to a deficiency of growth hormone. The cause is an eosinophilic pituitary adenoma (Fig. 8).

People with Addison's disease are very irritable and have a sad appearance.The onset of Addison's disease in a patient develops as a result of a deficiency of hormones in the adrenal cortex.

Addison's disease (single chronic adrenal cortex insufficiency)- primary adrenal gland

Examination and palpation of the thyroid gland

It is important to draw the patient's face: in euthyroid statesThe patient's face is deformed; in hypothyroidism, it is anemic and edematous; in thyrotoxicosis, it is restless, agitated, and nervous, with enlarged eyes. The patient's jugular and presternal veins are palpated in the vein located behind the chest. Horner syndrome develops due to sympathetic nerve suppression (ptosis, miosis, enophthalmos).

The patient's neck should be viewed from the front. There isIf there is enlargement of the thyroid gland due to various causes, it is necessary to insist on swallowing the material. When the patient swallows, the tongue moves upward. The doctor should determine the appearance of the feeding nodes (for example, if they are located behind the food).

Still the sameThe gland is not visible when viewed directly, is not palpated due to its soft consistency, and is only visible when magnified. The neck of the gland can be palpated when swallowing Naukas.

Palliative thyroid therapy. Palpation of the thyroid glandThyroid palpation is an important method for identifying thyroid disease. Normally, the thyroid gland is not palpable. Palpation can determine whether the lesion is diffuse or nodular, the location of the nodules, the mobility of the gland during swallowing, and any external changes characteristic of thyroid disease.

BreastCompression syndrome located behind the scan results in swelling of the neck and prethoracic veins, shortness of breath, and dysphagia. Large nodes (over 3.0 cm in diameter) deform the neck, dilate the jugular veins, and cause "giant" edema.

Percussion of the thyroid gland- To determine the state of health, a scan is performed, located behind the chest in the upper part of the sternum (on the upper part of the chest).

Auscultation. When the thyroid gland is hyperactive, a noise is heard above the gland. The noiseIts cause is associated with increased vascularization of the gland. Pulsation of the gland is also observed. A systolic murmur over the thyroid gland is characteristic of a diffuse toxic mass. In the pleural cavity located behind the enlarged chest, inspiratory stridor may be heard due to compression of the larynx.

The noise is characteristic of the spread of toxic food. In the pleural cavity, located behind the enlarged chest, inspiratory stridor may be heard due to compression of the larynx.

The following symptoms of glandular disease should be described:

• size;
• form;
• density and homogeneity of consistency;
• degree of mobility;
• pain and adhesion to the skin and surrounding tissues. In the diagnosis of the disease, doctors have been using this method for many years.

who applied for the nation. Currently, the shieldUltrasound examination of the gland is widely used to detect diseases of the gland.

Thyroid measurements in thyrotoxicosis(Basedow's disease, Graves' disease), thyroiditis, Plummer's disease, tumor of the gland, increases with obesity.

*For thyrotoxicosis*shieldThe gland is uniformly enlarged, or a specific portion of the gland is enlarged. The gland's consistency is uniform, it does not adhere to the skin or surrounding tissue, and it is mobile and painless.

With thyroiditis -The gland enlarges unevenly, becomes dense, painful, the skin near the gland is hyperemic, hot when palpated.

Thyroid glandwith toxic adenoma(Plummer's disease is accompanied by the formation of a nodule (adenoma)) - a nodule with clear contours is detected in the gland, the nodule moves when swallowed, and does not hurt.

In malignant thyroid tumors, a dense or rough mass is detected in the gland, attached to the skin and not moving when irrigated. The patient's voice becomes hoarse, and noisy inspiratory breathing occurs.

Degrees of thyroid gland enlargement. Degrees of thyroid gland enlargement according to the classification of the World Health Organization (WHO).(1994) (Table 6) and O.V. Determined according to Nikolaev (1995). According to WHO recommendations, the thyroid gland is considered enlarged if each part of the thyroid gland exceeds the size of the distal phalanx of the big toe (Table 7).

When palpating the thyroid gland, a nodule is detected.If yes, then the doctor prescribes the following basic and additional studies (Table 8)

4. Illustrative material:presentation.

5. Literature:shown on the last page of the syllabus.

6. Control questions (feedback):

1. What are the main complaints in diseases of the endocrine system?
2. What should you pay attention to during a general examination of patients? 3. How to palpate the thyroid gland? 4. What information does palpation of the thyroid gland provide?
5. What other physical methods are used when examining patients?

Lecture No. 8

Topic: Leading clinical syndromes (anemic, hemorrhagic and thrombocytopenic) in hematology.

Target: Teaching students about risk factors for diseases of the hematopoietic system in order to identify risk groups and implement a range of medical prevention measures.

Lecture abstracts:

Research methods for diseases of the hematopoietic system

Despite the undeniable importance of information obtained through specialized methods of examining a patient, generally prescribed clinical methods can provide valuable information.

View

A physical examination is carried out in the same way as when examining the condition of other organs and systems, with particular attention paid to the following:need to translate:

- Color of skin and mucous membranes (alsochanges in its contact with the skin)
- Change language
- Enlarged lymph nodes
- Enlargement of the liver and spleen
- Changing the position of systems with other bodies is the firstbones and nervous system

Palpation of the lymph nodes

Normally, peripheral lymph nodes are round or oval structures ranging in size from 5 to 20 mm. They do not extend beyond the skin level and are therefore not noticeable with normal examination.

The following lymph nodes are palpated: clavicular, posterior cervical, anterior cervical, clavicular, submental (metallic), supraclavicular and infraclavicular, axillary, ulnar, and inguinal. Palpation is performed with the fingertips using sliding circular motions over these lymph nodes, applying maximum pressure to denser structures (bones, muscles). During palpation, note the following characteristics: size, shape, consistency, tenderness, mobility, adhesions to each other and adjacent tissues, and the condition of the skin overlying the lymph nodes.

Ultrasound examination of the lymph nodes Allows for the detection of obvious lymph node enlargement. Unchanged lymph nodes are not detected by ultrasound imaging and are very large, similar in size to the surrounding tissues. The minimum size of clear lymph nodes is 8-9 mm. Lymph nodes detected by ultrasound examination are pathologically altered and require further diagnostic measures. Most often, lymph nodes are located along the main vessels or at the hilum of organs. When they are not very large, they have a distinct flat shape and are hypoechoic. As the pathological process progresses, the lymph nodes increase in size, their structure becomes homogeneous, and their echogenicity may increase. The shape of the nodules is non-uniform, with a tendency to form conglomerates. The relationship between changes in the node structure and the type of pathological process is not clearly evident.

Optimal method for assessing all lymph node groupsCT is available. On CT, lymph nodes appear as a homogeneous circle of soft tissue density. The primary criterion for the presence of a pathological process is determining the size of the CT scan. The size of non-enlarged lymph nodes, as determined by CT, does not exceed the Hum diameter. Accordingly, lymph nodes with a diameter of 8-10 mm are calcified. The normal size of the multiple lymph nodes identified is a sign of a pathological process. The structure and densitometric density of the nodules predict their size. Depending on their location, there are highly differentiated assessments of lymph node size.

The MRI image of a normal lymph node depends on the type of imaging.

T1-VI – an intact lymph node has a single oval or round shape, a uniform structure, and a distinct form. It is clearly differentiated from the surrounding tissue. Pathologically altered lymph nodes can reach significant sizes and have an uneven structure and shape.

In suspicious cases, radionuclide research is based on positron emission tomography (PET).

Ultrasoundstudy. Spleen locationSuitable for ultrasound examination. The spleen is small and granular (Fig. 12a), with echogenicity lower than that of the liver. The lining is visible as a hyperechoic line. Veins are visible at the hilum (Fig. 12b). All dimensions of the spleen are easily measured.

Computed tomography.CT shows body density and size,Determines the structure. The splenic sac is not detected on CT. After contrast administration, the splenic vessels are clearly visible and the accumulation of contrast in the body is visualized.

Magnetic resonance imaging. Veins of the spleen,allows you to determine the structure and all dimensions of the body without contrast. (Fig. 13).

Laboratory and instrumental research methods:

Laboratory methods:

1. ZhKA
2. ZhZa
3. Coprososcopy
4. Blood biochemistry: total bilirubin with fractions, ALT, AST, AST, TTP, ferritin, serum iron, glucose and its content.factions
5. Determination of osmotic resistance of erythrocytes.
6. Coombs reaction

Instrumental methods:

1. Chest puncture
2. Trephine biopsy
3. Endoscopic examination
4. Ultrasound
5. X-ray examination

4. Illustrative material:presentation.

5. Literature:shown on the last page of the syllabus.

6. Control questions (feedback):

1. What are the main complaints in diseases of the hematopoietic system?
2. What should you pay attention to during a general examination of patients?
3. How are lymph nodes palpated?
4. What information does palpation of the spleen provide?
5. What other physical methods are used when examining patients?