

**MINISTRY OF HEALTH OF UKRAINE**  
**POLTAVA STATE MEDICAL UNIVERSITY**  
Department of general surgery

<b>Study discipline</b>	<b>General surgery</b>
<b>Module №2</b>	<b>Necrosis. Bases of transplantology and clinical oncology. Methods of examination of surgical patients</b>
<b><i>Content Module 3</i></b>	<b>Inspection technique and supervision of a surgical patient.</b>
<b>Lesson theme №30</b>	<b>Examination of a surgical patient. Collection of complaints, medical history and life. An objective examination of the head, neck, chest. Abdomen, musculoskeletal system, blood vessels, lymph nodes.</b>
<b>Years of study</b>	<b><i>III</i></b>
<b>Faculty</b>	<b><i>International</i></b>

Poltava

### 1. A topic of relevance

Timely and correct diagnosis depends primarily on a systematic and thorough examination of the patient. In recent years, the technicalization of medicine has opened up the widest possibilities for diagnosis, but even to this end, the most important component of the diagnostic search remains a thorough medical history collection, a systematic and qualified physical examination and a thorough study of local status.

### 2. Specific objectives:

1. Know the history collection methodology;
2. Know the algorithm for examining the patient;
3. Know the features of the examination of the head, neck and chest, abdomen and musculoskeletal system.
4. Know the scheme for writing a medical history;
5. To be able to demonstrate the basic methods of objective examination of surgical patients;
6. Be able to interpret the main symptoms, research results, form a diagnosis;
7. To be able to draw up a plan of gratification.

### 3. Basic knowledge, skills needed to study the topic (interdisciplinary integration)

Names of previous disciplines	Acquiring skills
1. Histology	Analyze histological preparations
2. Topographic anatomy	Determine the anatomical location of the pathological process, the pulsation of blood vessels.
3. Propaedeutics of internal diseases	Own elements of palpation, percussion, auscultation.
4. Traumatology	Own transport and medical immobilization skills.

### 4. Tasks for independent work in preparation for the lesson and in the lesson.

#### 4.1. The list of basic terms, parameters, characteristics that a student must learn in preparation for the lesson:

Term	Definition
Cistoskopiya	Overview of the inner surface of the bladder with the help of a special optical instrument - cystoscope.
Xoledochoscopy	Endoscopic examination of the bile duct during surgery.
Ahtroscopy	A method for visual examination of a joint cavity using an arthroscope.
Byapillyaroskopii	Observation under a microscope in the shape, length and width of capillaries.

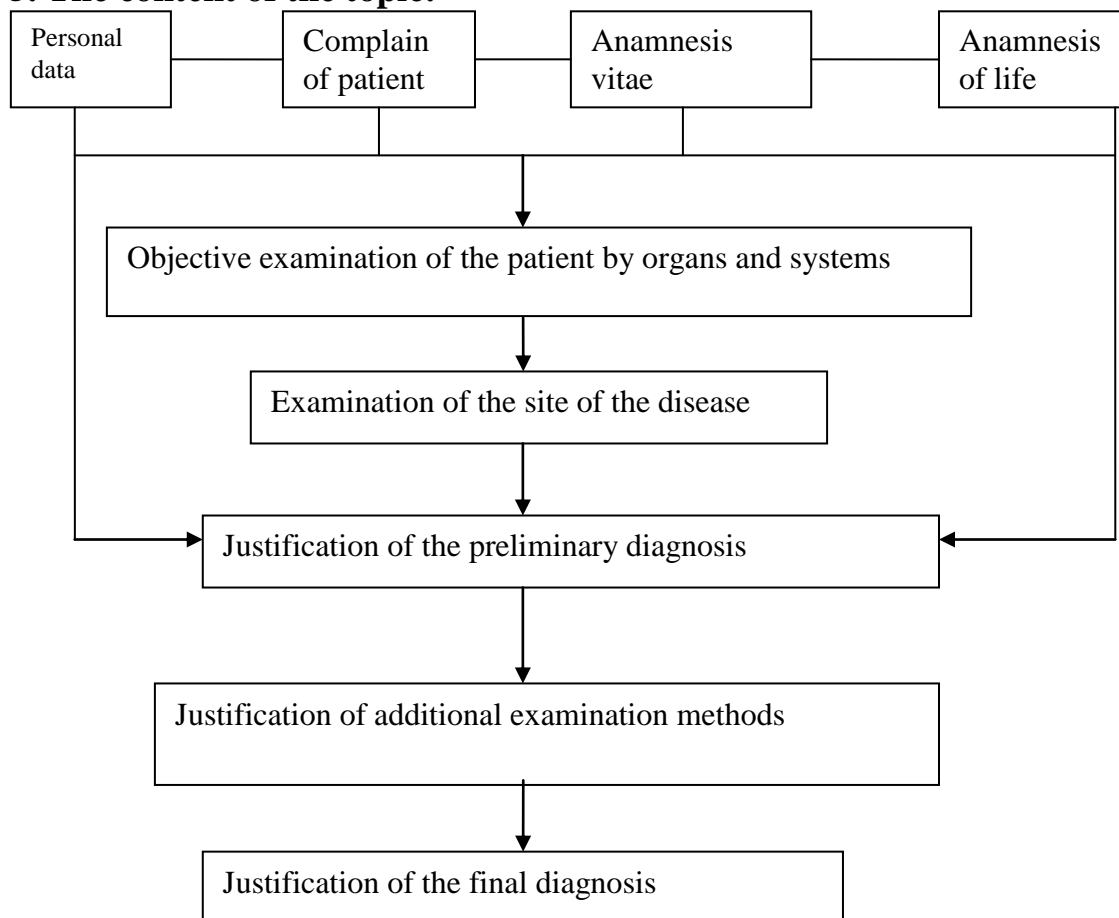
## 4.2. Theoretical questions for the lesson:

1. What is the purpose of examining a surgical patient?
2. What determines the nature and severity of patient complaints?
3. Methods of examination in muscle system?
4. Methods of examination of the osteoarticular apparatus?
5. Methods of examining the head and neck?
6. Methods of examination of the chest, abdomen?
7. What types of breathing do you know?

## 4.3. Practical work (tasks) that are performed in class:

1. Be able to conduct a patient examination;
2. Technique for auscultation and percussion;
3. Technique for determining the boundaries of the heart and lungs;
4. Be able to examine the chest and abdomen.
5. Methods of examination of the musculoskeletal system.

## 5. The content of the topic:



## **Basic of head examination**

*Inspection* On examination, pay attention to the shape of the head and shape. In children, the small size of the head (microcephaly) is observed with idiocy, and the large head (macrocephaly) is observed in the main edema. A square head, flattened from above and with protruding hills says rickets. "Tower skull", low and high, usually combined with congenital hemolytic jaundice.

The head position can be characteristic of many diseases of the nervous system. The position of the head is not good, either when the joints of the cervical spine are immobilized (spondylarthrosis, spondylitis) or with contracture of the cervical muscles (myositis), if the muscles are brought together on only one side, the chair leaned to the side (torticollis), throwing the head back (due to contractures neck) and limitations of passive movements of the head (neck stiffness) - a characteristic symptom of irritation and inflammation of the brain lochek (meningitis).

Unintentional head movements in the form (trembling) are observed with trembling paralysis. Swinging back and forth (like nodding) is observed with aortic valve insufficiency (Musse syndrome), erratic convulsive twitching with chorea.

Local deformation of the cranial vault (protrusion or sagging) may indicate a fracture of the bones or a soft tissue tumor. Identify bleeding, discharge of cerebrospinal fluid from the nose and ears is a sign of a fracture of the base of the skull.

Diffuse hair loss on the head (alopecia) is observed with radiation sickness, cachexia, anemia, hypothyroidism, erysipelas. Local (nest) baldness is observed with furunculosis, syphilis, fungal infections.

*Palpation.* By palpation of the soft tissues of the skull, benign tumors are detected, their density, texture, mobility, fixation to the skin and aponeurosis are determined. In the long run, they can cause indentation or an oval defect in the skull bones. If the bones of the skull are damaged by palpation, the type of fracture is determined (linear, comminuted, depressed, holey or fenestrated).

*Percussion.* Percussion of the skull is carried out half-bent with the index finger, tapping on the crypt. The volumetric intracranial formations that are close to the bones (tumor, hematoma, abscess) get a clear tympanitis. Percussion of the temporal bone causes pain with inflammation of the middle ear.

## **Neck Examination Technique**

*Inspection* The neck is examined from all sides with direct and lateral clarification. Pay attention to its shape, contours, presence of changes on the skin, swelling, thickening of the veins, visible pulsation of the arteries, as well as the position of the larynx and trachea. When examining the anterior surface of the neck, the sternocleidomastoid muscle is defined as a roller that begins behind the lower jaw and goes obliquely, medially downward and is fixed to the clavicle and sternoclavicular junction of the carotid artery pulsation. The clearly visible pulsation of the carotid arteries is a characteristic sign of Aortic valves.

The examination reveals a sharp uniform increase in the size of the neck with sudden compression of the chest and an increase in internal chest pressure (traumatic asphyxia), with compression of the mediastinum by tumors with impaired blood and

lymph circulation (collar-like neck), an irregular increase in the submandibular region and lateral parts of the neck as a result pathological process of the lymph nodes (tuberculous lymphadenitis, lymphogranulomatosis, leukemia, lymphosarcoma). In the area of the front and side surfaces of the neck during examination, can be detected vischi diversity itnogo origins by tuberculous lymphadenitis, suppurative osteomyelitis, actinomycosis, foreign bodies and birth.

An increase in the anterior surface of the neck below the thyroid cartilage indicates, as a rule, pathology of the thyroid gland. Goiter (goiter), tumors, inflammatory processes lead to the expansion of its borders, the isthmus can spread beyond the sternum and upwards of the thyroid cartilage. If there is a tumor on the front of the neck relative to the location of the thyroid gland, a symptom of a sip of water is checked. At the moment the patient swallows the fluid, the tumor associated with the thyroid gland moves with the larynx first up and then down.

*Palpation.* On palpation, the boundaries of swelling, consistency (soft, dense, knotty), the location of the trachea relative to the midline, the displacement of the formation in the vertical and horizontal directions should be determined. The upper poles of the gland are palpated well, and the lower can go beyond the sternum and must be palpated when swallowed. Palpation of the thyroid gland is carried out by the following method. First, the doctor stands in front of the patient and fixes the neck with his left hand, and puts the palm of his right hand along, fingers up, on the front of the neck. Palpates the thyroid cartilage, asks the patient to slightly raise his head up. After that, he slides his fingers down the surface of the thyroid and further along the arch of the cricoid cartilage. Directly below it is a horizontally located cushion of the isthmus of the thyroid gland. Palpating the isthmus, determine its width, texture, mobility when swallowing. After that, between the inner edge of the sternocleidomastoid muscle and the trachea directly above the upper edge of the isthmus lateral lobes are palpated.

The described method of palpation of the thyroid gland should be supplemented with the following technique: the patient sits on a chair, the doctor stands behind the patient and with both hands covers the neck so that the thumbs are behind, and the others lie on the front surface. After that, the middle fingers of both hands find the thyroid cartilage, the isthmus of the thyroid vagina. Palpate the tissues that are above the trachea. Move fingers on the sides of the trachea to the inner edges of the sternocleidomastoid muscle. Palpating with this method, it is necessary that the patient slightly lower his head to relax the muscle of sternocleidomastoid. To determine the mobility of the thyroid gland, they ask the patient to take a sip.

Normally, the thyroid lobes are not palpable, and the isthmus is determined in the form of a transverse lying roller, smooth, painless, uniform consistency.

### **Method of examination of the chest**

*Inspection.* On examination, the shape and symmetry of the chest are visually determined. Pay attention to isolated or diffuse protrusion or retraction, respiratory rate, rhythm, depth and uniform participation of both halves of the chest.

The chest cage is examined in direct and lateral illumination and in a certain sequence - the area of the clavicles, sternum, sternoclavicular joints, supraclavicular and subclavian cavities, the morenheim fossa (between the deltoid and large Sternum

muscles), both halves of the chest, intercostal spaces are compared in front and behind (width, degree of execution), the shape of the epigastric angle (acute, obtuse - in degrees).

Men are more likely than women to have a blunter epigastric angle and a flatter Louis angle. When measuring the surrounding size of the chest, it is advisable to compare on both sides the distance from the middle of the sternum to the spinous processes.

Normally, the chest is of a regular, symmetrical shape. Changes in shape may be due to pathology of the chest organs or improper skeleton formation during development.

*Palpation.* On palpation, ribs, intercostal spaces, pectoral muscles, the degree of resistance of the chest, the phenomenon of vocal trembling are determined. The patient is examined standing or sitting. Normally, the chest is elastic, supple, especially in the lateral departments. The resistance of the chest is determined by the resistance when it is pressed in different directions.

Increasing the rigidity of the chest is observed in hydrothorax ie , large tumors of the lung, emphysema, rib cartilage ossification in the elderly.

#### *Determination of sternal ripple*

With the patient's head tilted, a finger is applied to the jugular fossa. Aortic pulsation can be felt, indicating its expansion.

#### *Palpation of collarbone*

The clavicle is captured with the thumb and forefinger and palpated along the entire length. If a clavicle fracture is suspected, palpation is carried out with great caution due to severe pain and the possibility of damage to the subclavian vessels by bone fragments. It is possible to identify a typical displacement of the inner fragment up and back, and the external one - down and anterior.

#### *Palpation of the supraclavicular fossa*

A comparative determination of the lymph nodes on both sides is carried out. It matters with neoplasms of the mammary gland, lungs.

Sometimes you can find a flat bone formation, depending on the presence of an additional cervical rib. Soreness with pressure on the inner section of the supraclavicular fossa (placement of the brachial plexus) may indicate plexitis.

#### *Palpation of ribs and intercostal spaces*

On palpation, the chest is painless, the surface of the undamaged ribs is smooth. It should be remembered that each rib needs to be palpated from the sternum to the spine. Pay attention to the junction of the ribs and cartilage (rickets), bone thickening, localized soreness. Gentle crepitus is determined as a consequence of subcutaneous emphysema in fracture of the rib with damage to the pleura and lung. Coarser crepitus during respiratory movements indicates a fracture of the ribs (bone crepitus). Determination of bone crepitus is best done after novocaine blockade of the fracture site. To establish which rib is damaged, counting is carried out from above, in front, starting from the clavicle. Counting can also be done from behind, from below, starting from the XII rib. Isolated swelling and soreness of the intercostal spaces may indicate the presence of an inflammatory process (purulent focus) in the pleural cavity.

#### *Definition of voice trembling*

Vocal trembling occurs during conversation and palpation of the chest oscillations that are transmitted from the vibrating vocal cords. The patient repeats words in a low voice that contain the letter "P", for example, "thirty-three." The determination is carried

out using tightly attached palms symmetrically to both of the thorax of the chest. An increase in vocal trembling occurs during infiltrative processes of lung tissue (pneumonia, above covers and bronchioectasis). Weakening of voice trembling, or its absence is observed in the presence of fluid in the pleural cavity, pleural tumors, obstruction of the lumen of the bronchus.

*Percussion* . Chest percussion makes it possible to determine the boundaries of the lungs and heart. Comparative percussion is carried out sequentially on the front, side and back surfaces of the chest symmetrically on both sides along topographic lines, as well as topographic - sequential determination of the boundaries, the mobility of the lower edges, the height of the apices of the lungs.

Percussion of the chest, primarily, determine the boundaries of the lungs and heart. To determine the boundaries of absolute dullness of the heart, weak strokes are applied, to identify relative dullness - more powerful strokes.

Percussion of the lower chest during inhalation and exhalation determines the mobility of the pulmonary edges. There is a clear pulmonary sound with normal lung tissue; boxed - with emphysema; high tympanitis - with pneumothorax; blunt or dull sound - with the compaction of lung tissue, the presence of fluid in the pleural cavity, with tumors. The presence of fluid and air in the pleural cavity gives the border blunting in the form of a horizontal level. If there is only liquid without air, the blunting limit will be along the Damuazo line, the oblique line with the highest point will be along the back axillary line.

*Auscultation*. Listening to the heart determines heart tones that are amplified or weakened. I and II tones are heard at the apex of the heart, aorta, pulmonary artery. Intracardiac murmurs (systolic, diastolic) and pericardial friction can be heard.

Auscultation of the lungs is carried out at symmetrical points in front and behind, from top to bottom. Normally, basic respiratory murmurs (vesicular breathing) are heard. In pathological processes, additional or secondary respiratory sounds.

Vesicular respiration occurs due to fluctuations in the walls of the alveoli. May vary towards amplification or weakening. These changes are physiological and pathological.

Physiological enhancement of vesicular respiration is observed in children, and weakening - with a thickening of the chest wall.

Pathological attenuation of vesicular respiration occurs with inflammation, and pathological enhancement of vesicular respiration is due to changes in the phases of respiratory noise during exhalation and inhalation.

*Bronchial breathing* is respiratory noise arising in the larynx and trachea. Normal bronchial breathing is heard well over the larynx, trachea, bifurcation of the trachea.

Pathological bronchial breathing is heard when the pulmonary tissue is compressed and the alveoli are filled with inflammatory exudate.

*Side breathing noises* - wheezing that occurs during the development of a pathological process in the trachea, bronchi, and lung parenchyma.

*Dry rales* - the main condition for their occurrence is a total or focal narrowing of the lumen of the bronchi.

*Wet rales* occur as a result of accumulation of liquid secretion in the lumen of the bronchi.

*Crepitation* - crackling, which, unlike wheezing, occurs in the alveoli.

*Pleural friction noise* - they listen in pathological conditions leading to changes in the properties of pleura sheets, as a result of which additional noise arises during their movements - "pleural friction noise".

## **6. Materials for self-control**

### **A. Tasks for self-control:**

#### **Tests for self-control**

1 Musse syndrome - head swaying back and forth is observed with:

- A) meningitis
- B) aortic valve insufficiency
- C) microcephaly

2 Mydriasis is:

- A) dilated pupils
- B) narrowing of the pupils
- C) the asymmetry of the pupils

3 In case of biological death of the pupil:

- A) remain narrowed
- B) uneven
- C) expand

4 Erratic convulsive twitching is observed with:

- A) meningitis
- B) chorea
- C) skull injury

5 The contracture of the cervical muscles on the one hand is observed with:

- A) torticollis
- B) meningitis
- C) rachitis

6. In Itsenko-Cushing's disease, a typical person is observed:

- A) swollen, swims
- B) pale with sharply sharpened features
- C) a spotted blush with a sparkle of eyes
- D) moon-shaped, swam with fat, brilliantly

7. The sections are allocated to the ore cell; they have characteristic structural features:

- A) three
- B) four
- C) five
- D) ten



8. For men, the characteristic type of breathing:
- A) chest
  - B) abdominal
  - C) mixed
9. Respiratory rate is normal:
- A) 15-18 per minute.
  - B) 18-25 per minute ..
  - B) 16-20 per minute ..
10. With percussion of the lungs, there are:
- A) clear pulmonary sound
  - B) boxed
  - C) high tympanite
  - D) blunt or dull sound
  - D) all of the above
11. A sardonic smile appears in patients:
- A) tetanus
  - B) syphilis
  - C) tuberculosis
12. Sharply visible pulsation of the carotid arteries ("dance") is a characteristic sign:
- A) cervical lymphadenitis
  - B) aneurysms of the aortic arch
  - C) aortic valve insufficiency

## **B. Situations of tasks for self-control**

1. A woman with a 10-year-old boy turned to you due to the fact that the child is concerned about pain in the right elbow joint. The boy is 6 hours old. back, in the outpatient clinic, a bandage was applied to the infected abrasion of the elbow joint after treatment. On examination, a slight cyanosis of the right forearm and hand, swelling of the saphenous veins, even when raising the arm up, is determined.  
What happened? How to help a child?

2. At the reception came a man of 40 years old, who was worried about the itching of his left forearm. Three days ago I received a thermal burn of I-II degree. An aseptic dressing was applied to the forearm. On examination, it was found that the bandage on the back surface of the middle third of the forearm is saturated with yellowish-gray secretions. How to remove the bandage?

3. A 34-year-old man with a cut wound of the palmar surface of the middle third of the right forearm was delivered to the admission department. According to the victim, a wound of unknown person stabbed him 1.5 hours ago on the street. Held toilet wounds,

primary sutures imposed. The nurse fixed the dressing on the wound with a bandage, tying the ends of the bandage into a knot above the wound. After that, she injected him (the patient) subcutaneously with 0.5 ml of tetanus toxoid and 3000 IU of tetanus toxoid. What mistake has been made in the dressing technique?

4. The patient is 68 years old, on the inner surface of the lower third of the right lower leg there is a trophic ulcer 1.5 \* 2 cm in size with a necrotic bottom, flushing of the skin and soreness around. The ulcer is treated with a solution of antiseptic, dried, covered with a napkin with Iruzol ointment. What reinforcement dressing do you apply?

5. The patient due to varicose veins of the saphenous veins in the stage of subcompensation underwent venectomy of the large saphenous vein on the right thigh and lower leg. Wounds are sutured, treated with 1% iodonate solution, covered with napkins. What bandage to put on the lower limb to secure the dressing?

6. Patient K., 20 years old, in connection with an injury to the cervical spine and damage to the spinal cord, an emergency laminectomy was performed to decompress it. The wound on the back of the neck is sewn up, covered with gauze napkins. What bandage do you apply to secure the dressing?

7. You are an emergency doctor. You were called to a patient with a penetrating wound to the chest on the right. The condition of the victim is serious. He instinctively covers the wound with his hand, bending to the right side. When examining a wound, there is a suction of air through it at the moment of inspiration, and when you exhale, the air comes out of it with noise. Your actions?

8. Patient S., 28 years old, performed an autopsy of purulent ulnar bursitis. The bag is stitched with an antiseptic solution, drained with turunda moistened with a hypertonic solution of sodium chloride, covered with a gauze napkin. How do you fix the dressing?

9. Patient S., 36 years old, was injured during a traffic accident. Existing cut, profusely bleeding wound in the right temporal region and an extensive chopped-lacerated wound on the outer surface of the right shoulder joint. There are no signs of a fracture of the shoulder. What dressings should be applied to the patient in first aid?

10. You are an accidental accident witness: the child burned his right hand with boiling water and screams in pain. A bubble appeared on the back of the fingers and hand. In the home medicine cabinet there is a solution of furacillinum(1: 5000) and a sterile bandage in the package. For the purpose of first aid, which bandage should be applied to the victim?

## 7. References:

General:

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**The distribution points are awarded to students:**

At mastering topic number 30 to module 2 for training activities for students rated a 4-point scale (traditional) scale, which is then converted into points as follows:

<b>rating</b>	<b>Points</b>
5 (excellent)	5
4 (good)	4
3 (satisfactory)	3
2 (poor)	0

Guidelines prepared

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