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The Medical History
of a Surgical Patient

Tutorial

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BODY SYSTEM PHYSICAL EXAMINATION DATA

THE RESPIRATORY SYSTEM

Chest Examination

The following is described:

- shape of chest (normosthenic, asthenic, hypersthenic, with pathology, emphysematous, kyphoscoliotic, paralytic, rachitic or keeled);
- shape of sternum (normal, navicular, funnel);
- condition of over- and subclavian pits (expressed, sunken, retracted);
- width of intercostal spaces (wide, moderate, narrow);
- epigastric angle (obtuse, right, acute);
- position of scapula and clavicle (non-protruded, normal or mildly protruded, pterygoid scapula);
- anteroposterior and lateral dimensions of thorax.

The following is indicated:

- symmetry of chest (increase or decrease of hemithorax, retraction or protrusion);
- symmetry of hemithoraces when inhaling and exhaling.

Respiration characteristics

Respiration is characterized by the type, frequency of respiratory movements (FRM), amplitude and rhythm.

Type of respiration

Respiration can be thoracic (costal), abdominal or mixed. Mouth breathing and nasal breathing are differentiated. Participation of muscles, alae of the nose.

Frequency of respiratory movements

Frequency of respiratory movements (BHD) refers to the number of inhalation-exhalation cycles per minute.

Respiratory rhythm

Respiration is characterized as regular/irregular. Its amplitude (shallow, deep) is measured. In the presence of pathological breathing, its type is indicated (see Appendix 7).

Dyspnea

In the presence of dyspnea, its type is determined: inspiratory, expiratory, mixed.

Palpation data

Palpation of the chest determines the elasticity and resistance of the chest, vocal fremitus (its symmetry, weakening or strengthening with indication of localization). In the presence of painful spots, their location and number are indicated.

When describing the results of comparative percussion, the percussion sound is described above the symmetrical parts of the chest (pulmonary, dull, dull with tympanitis, tympanic, bandbox).

The data of the topographic percussion of lungs are presented in Table 1.

Table 1. Data of topographic percussion of lungs

Anatomical landmarks	Right side	Left side
Upper border of lungs		
Height of apexes (front)		
Height of apexes (back)		
Width of Kronig's isthmus		
Lower border of lungs		
At parasternal line		
At midclavicular line		
At anterior axillary line		
At middle axillary line		
At posterior axillary line		
At scapular line		
At paraspinal line		
Respiratory excursion of the lower edge of the lungs at the middle axillary line		

End of table 1

Anatomical landmarks	Right side	Left side
Respiratory excursion of the lower edge of the lungs at the scapular line		

The data of topographic percussion of a healthy person are given in Appendix 8 (see Table A8.1).

Auscultation

The following is described:

- nature of main respiratory noises above symmetrical parts of lungs (vesicular, bronchial, broncho-vesicular respiration);
- changes in vesicular (weakened, strengthened, hard, with prolonged expiration) and bronchial (weakened, strengthened, amphoric) breathing.

In the presence of adverse breath sounds (rale, pleural friction noise, crepitation, pleurocardial noise), their precise location along the intercostal spaces and topographic lines is indicated.

Rales are characterized:

- dry (high — whistling, low — buzzing);
- moist (small, medium, large bubble wheezing).

The nature of the bronchophony (identical in both sides, strengthened or weakened in one side) is indicated.

THE CARDIOVASCULAR SYSTEM

Cardiac examination

When examining the heart area, indicate the presence or absence of cardiac and apical impulses, the cardiac hump, pulsation in the epigastrium, in the heart region, in the jugular fossa.

Palpation data

Palpation determines the location of the apical impulse, its strength (weakened, moderate), width, height, prevalence (limited, diffuse), the area of the cardiac impulse, epigastric pulsation, pulsation in the second intercostal space to the right and left of the sternum, in the jugular fossa. In the presence of flutter in the heart region, its location, severity, connection with the phases of cardiac activity (systolic, diastolic) are indicated.

Percussion determines the borders of the relative and absolute dullness of the heart (right, left, upper), the dimensions of the heart breadth, the width of the vascular pedicle (Table 2).

Table 2. Borders of the relative and absolute dullness of the heart

Borders	Relative	Absolute
Right		
Left		
Upper		

The configuration of the heart (normal, mitral, aortic) is determined by the borders of the relative dullness. The following is considered:

- width of the heart, breadth of the relative dullness of the heart (measured in centimeters);
- width of the vascular pedicle (measured in centimeters).

Data on the borders of the heart of a healthy person are given in Appendix 9.

Auscultation

Auscultation is done in the vertical and horizontal position, when the patient inhales and exhales. When describing the auscultation of the heart, indicate the rhythm of the heart beats (correct, incorrect), the form of arrhythmia (respiratory, ciliary, extrasystole, heart failure, gallop rhythm, embryocardia). The loudness of the first and second heart sounds (amplification, attenuation, equality of both sounds), their splitting (if any) are indicated. Intracardiac and extracardiac murmurs, which can be organic and functional, are indicated.

Heart murmurs description

The description of heart murmurs includes:

- indication of the best listening point;
- connection with heart sounds;
- intensity (quiet, loud);
- pitch (high, low);
- shape (crescendo, decrescendo or crescendo-decrescendo), duration (short, long);
- radiation in non-heart areas.

In the presence of a pericardial murmur, the following is indicated:

- the best listening point;

- quality (harsh, gentle);
- connection with respiration.

Pulse

The pulse in the two radial arteries (*pulsus differens*) is studied, its characteristics are given:

- rate;
- volume;
- rhythm;
- equality;
- force;
- speed;
- form;
- heart rate deficit.

Other data

Stange and Gench functional tests (see Appendix 10) are evaluated.

Blood pressure (BP) is measured on the left and right humeral arteries (in millimeters of mercury).

In addition, the data of examination and palpation of the temporal, carotid, subclavian, femoral, popliteal, posterolateral arteries and dorsal arteries of feet are described. The degree of the pulsation, the elasticity and smoothness of the wall, the tortuosity of the arteries, the presence of aortic pulsations in the jugular fossa and in the abdominal region, the data of auscultation of the carotid and femoral arteries and the abdominal aorta, are reflected.

All superficial veins of the neck, thoracic and abdominal walls, and limbs are examined and palpated. In the presence of varicose veins, their localization, induration and ache, discoloration of the skin near them, and trophic disorders are indicated.

THE DIGESTIVE SYSTEM

Mouth examination data

When describing the state of the digestive organs, the data of the examination of the tongue, teeth, gums, soft and hard palate, and pharynx are first indicated.

When describing the condition of the tongue, the following is indicated:

- color;
- moisture;

- condition of the papillary layer (polished tongue, geographical tongue, hairy tongue);
- coating, cracks, ulcers (if any) are described.

Conditions of the teeth (preserved, missing, sanitized, decaying, non-sanitized, loose, with removable frameworks, clasps, laminar prostheses), gums (pink, icteric, hemorrhage, ulceration, bleeding), tonsils, back of the throat, breath odor (acetone, putrefactive, rotten hay) are described.

Abdominal examination data

The shape of the abdomen, its size, the involvement of the abdominal wall in respiration, and uneven protrusions or retractions are described. In the presence of abdomen enlargement, its causes are indicated: obesity, bloating, free fluid («frog abdomen»). Visible peristalsis of the intestine and stomach (indicate their location), varicose veins on the anterior abdominal wall («caput medusa»), striae (their localization and color) are described.

Percussion of the abdomen

The abdomen is percussed (a normal percussion sound is tympanitic). In order to determine free fluid in the abdominal cavity, the abdominal wall is percussed in a horizontal position on the back and side, since when the position of the body changes, free fluid will shift. Free fluid is characterized by a dull percussion sound.

Palpation of the abdomen

The results of the comparative and deep palpation of the abdomen according to the Strazhesko–Obraztsov method are given.

The surface comparative palpation determines:

- painful spots (Mendel's symptom is indicative: soft tapping with fingertips over the abdominal wall);
- rigidity of abdominal muscles (defans musculare);
- diastasis recti abdominis.

Zones of the most frequent formation of hernias (hernial orifices): umbilical, paraumbilical, inguinal, femoral, lateral (semilunar line) and the lumbar region. In the presence of hernias, the size of hernial orifices is indicated, the hernial protrusion (size, shape, reducibility, pain, consistency, presence or absence of cough impulse) is characterized. In addition to muscle rigidity, the Blumberg sign (positive, negative, doubtful) is indicated: pain upon removal of pressure to the abdomen.

The palpable superficial tumor-like formations of the abdominal wall are described: their size, number, movability, localization, consistency, condition of skin over them are indicated.

The results of deep sliding palpation of the stomach, pylorus, cecum, ascending, transverse, descending and sigmoid colons are given; their soreness, size, shape, consistency are described.

In the presence of voluminous formations, their size, consistency, soreness, movability and possible connection with an organ of the abdominal cavity are described.

Auscultatory percussion determines the lower border of the stomach (normally: 3 cm above the navel); a splashing sound in the stomach (if any) is indicated.

Peristaltic sounds (weakened, strengthened, unchanged, absent) and peritoneal murmurs are characterized.

Hepatobiliary system examination data

The examination determines the areas of protrusion and deformation in the liver («hepatic humpback») and in the right hypochondrium, the limited excursion of the abdominal wall in this region.

The liver

Percussion determines the borders and size of the liver by the Kurlov method.

Normal sizes:

- in the right midclavicular line: 8–10 cm;
- in the anterior median line: 7–9 cm;
- in the left costal arch: 6–8 cm (presented as 8×7×6 cm).

The positive or negative Orthner symptom is indicated: pain (positive) or its absence (negative) when lightly tapped on the right costal arch.

Palpation assesses the condition of the lower edge of the liver. Its lower borders along the right midclavicular and median lines are specified. The following is determined:

- shape of the lower edge of the liver (rounded, sharp);
- condition of the liver surface (smooth, nodular);
- density (dense, pulpy);
- elasticity (elastic, stiff);
- soreness (painful, painless).

It is indicated whether the gallbladder is palpable or not. When enlarged, the size, pain, consistency, mobility, symptoms of acute or chronic inflammation are indicated.

The spleen

Enlargements (if any) of the spleen are indicated. Normally, the spleen is not palpable. Its size is determined percussionally, which is 6–8 cm long and 4–6 cm wide.

In the presence of enlargements of the spleen, the following is indicated:

- lower edge condition (sharp or rounded);
- parenchyma density (dense, elastic, pulpy);
- surface condition (smooth, bumpy);
- soreness (painful, painless).

The pancreas

Palpation of the pancreas (not normally palpable) determines pain, possible enlargement and induration of the pancreas, transfer pulsation of the abdominal aorta (absent in acute pancreatitis — a positive Voskresensky symptom).

Rectal examination

The digestive organs examination ends with the anorectal area examination and the digital rectal examination (see Appendix 11).

Rectal examination is done in all patients over 50 who have applied for surgical care, even in the absence of any complaints about the gastrointestinal tract, and in all patients who have complaints of pain in the rectum and anus.

The anal area examination data are described. The following is indicated: external hemorrhoids (their color, the «o'clock position» in the lithotomy position, consistency, pain in palpation), inflammatory infiltrates, tumors, fistulas with fistulous drainage description (serous, bloody, purulent, fecal), madescences, cracks, genital warts.

In the digital rectal examination, internal hemorrhoids (their most frequent position at 3, 7, 11 o'clock), tumors, cracks, internal fistula holes, their localization and consistency are indicated. The sphincter tone (normal, weakened, spasm of the sphincter) is assessed. In men, the condition of the prostate gland (enlarged, non-enlarged, dense, pulpy, nodular; the interlobular furrow is expressed, smoothed, shifted to the left, to the right) is described. In women, the overhanging anterior wall of the rectum indicates an inflammatory infiltrate, pus or blood accumulation in the Douglas space.

At the end of the examination, the stool remnants on the glove (blood, mucus, pus, color and consistency) are evaluated.

The peculiarities of defecation, the regularity of the stool, the consistency, color, constipation (if any), diarrhea (if any), pathological impurities (if any,

such as, blood, mucus, particles of undigested food, rice grain shaped interspersions), shape (ribbon-like, pebble-like feces) are indicated.

THE GENITOURINARY SYSTEM

The examination determines deformations, protrusions in the lumbar and suprapubic regions, which are noted. The results of palpation of the kidneys in the horizontal position on the side, on the back and in the vertical position are indicated.

The following is described:

- size of the kidneys, their location, mobility, soreness, positive or negative costovertebral angle tenderness;
- painful spots along the ureters, in the projection of the urinary bladder;
- degree of the urinary bladder fullness with urine (the level at which the bottom is palpable is indicated).

THE URINARY BLADDER AND URINATION

The urinary bladder region, before and after urination, is percussed. Normally, after urinary bladder emptying, tympanitis is determined in the suprapubic region.

The following is described:

- disorders in the act of urination (difficult, stuttering);
- urinary leakage;
- daily diuresis;
- pathological impurities in the urine (sand, grains, mucus, blood, blood clots[1]);
- urine color (straw, straw-yellow, rich yellow, dark, red, color of «beer», of «meat slops», etc.);
- transparency of urine, odor.

MALE EXAMINATION DATA

In males, the results of the examination and palpation of the scrotum, testes, spermatic cords are indicated:

- enlarged or reduced size of the testicles;
- absence of testicles in the scrotum or an undescended testis — cryptorchidism;

[1] In the presence of blood in the urine, its appearance at the beginning or at the end of urination, connection with the pain syndrome are indicated

• fluid accumulation along the spermatic cord and in the testicles.

The method of diaphanoscopy (examination of the scrotum in the transmitted light beam) confirms or excludes the presence of fluid in the testicle shells.

In the presence of varicose veins of the spermatic cord and testicles, their severity, soreness in palpation are indicated.

FEMALE EXAMINATION DATA

In females, the results of the examination of the external genital organs and of the bimanual examination are indicated:

• condition of fornices, their soreness;
• position, size and mobility of the uterus and its appendages;
• infiltrates and tumoral formations;
• nature of vaginal discharge.

THE NEUROPSYCHIC STATUS

When describing the neuropsychological status, the following is indicated:

• mood;
• features of behavior;
• irritability;
• working capacity;
• attention, its concentration;
• condition of memory for present and past events;
• duration and condition of sleep (deep, shallow, insomnia);
• abnormalities of smell, hearing, speech;
• degree of the main reflexes (knee, elbow);
• dermographism.

PATHOLOGICAL SITE DESCRIPTION (*STATUS LOCALIS*)

Some symptoms of diseases of the internal organs of the thoracic and abdominal cavities have already been indicated in the physical examination description (limited involvement of the abdomen in respiration, enlarged size of the abdomen, localization of muscle soreness and tension, peritoneal symptoms, etc.). In this section of the medical history of a surgical patient, specific symptoms are given for each specific surgical disease and its complications.

The local status is described according to a certain plan: first, the pathological site examination is described; then, the data obtained by palpation of the site are presented. When some anatomical formations (vessels, lymph nodes, etc.) are involved in the pathological process, it is necessary to describe their condition (palpation and auscultation of vessels, the volume of active and passive movements in the joints, etc.).

DIFFERENTIATION OF DESCRIPTIONS OF THE LESION DEPENDING ON ITS ETIOLOGY

If the lesion (wound, visible tumor) is an independent local disease, the examination first describes the focus, and then the surrounding tissue.

If the visible focus is a manifestation of a systemic disease (gangrene in obliterative thromboangiitis, trophic ulcer in chronic venous insufficiency), the entire anatomical region is described: the condition of the skin, of the soft tissue of the limb, then the lesion. A clear anatomical localization of the lesion in comparison with the symmetrical region is indicated.

In patients with local inflammatory processes (infiltrates, abscesses, phlegmons), all the signs characteristic of inflammation are described:

- *color* — increase of the local temperature;
- *rubor* — redness;
- *dolor* — pain;
- *tumor* — swelling;
- *functio leasa* — disorder of the function.

The condition of the peripherial lymph nodes is reflected:
- size, localization;
- matting with surrounding tissues;
- soreness in palpation;
- consistency;
- color of the skin over the lymph nodes.

If trophic disorders are caused by the pathology of the arteries or veins of the limbs, in addition to the changes described in the objective status, special clinical tests (e.g., the Perthes test for the pathology of veins, the Oppel and the Goldflam tests for arterial insufficiency, etc.) are made. Vessel examination is mandatory in comparison with the unaffected side. For the lower limb, pulsation in the femoral, popliteal and tibial arteries of the foot is indicated; for the upper limb, in the subclavian, humeral, and radial arteries.

In the presence of skin defects (abrasions, wounds, trophic ulcers, necroses, pressure ulcers), the following is indicated:
- size of the wound surface;
- quantity and quality of the separated substance;
- appearance;
- presence and intensity of the pain syndrome;
- disruptions;
- condition of the edges of the wound and surrounding tissues.

The local status is described as a coherent text, without division into subpoints (examination, palpation, etc.). Changes the patient does not have are not described (e.g., «absence of peeling, thinning of the skin»).

THE PROVISIONAL DIAGNOSIS

The next section in the medical history is a provisional diagnosis, which is made based on the anamnesis, local and general symptoms of the disease identified in the patient. The main condition is the condition which led to the patient being hospitalized; a comorbidity is a pathological process that has developed as a result of the progression of the main condition. A comorbidity is a disease that is etiologically and pathogenetically unrelated to the main condition.

DIAGNOSTICS

To confirm the provisional diagnosis, it is necessary to conduct paraclinical tests: laboratory and special.

Regardless of the nature of the disease, the following tests are mandatory for each patient with surgical pathology:

- measurement of arterial pressure on the left and right humeral arteries;
- general blood test;
- general urine test;
- biochemical blood test (glucose, total protein, transaminase, bilirubin, creatinine, urea nitrogen, prothrombin index, fibrinogen, ethanol test, INR, APTT;
- blood test for HIV, hepatitis and syphilis;
- determination of the blood group and Rh factor;
- radiography of chest organs (in the absence of fluorography during a calendar year);
- electrocardiography.

Consultations of medical specialists (cardiologist, gynecologist, ophthalmologist, urologist, etc.) are conducted according to indications in the case of relevant comorbidities.

Depending on the nature of the pathology, these test methods are supplemented according to the federal medical care standards (e.g., dopplerography and duplex scanning of the veins for varicose veins of the lower limbs, EGD, ultrasound of the liver, biliary tract and pancreas, ERCP and duodenal sounding if required, for cholelithiasis,).

Invasive methods of examination require the consent of the patient (see Appendix 12).

Preparation for conducting special methods of examination is recorded in the treatment sheet (see Appendix 13 for examples of preparation for the colon examination and for the abdominal cavity ultrasound).

LABORATORY DATA AND INSTRUMENTAL METHODS OF EXAMINATION

The medical history of a surgical patient contains the results of all laboratory and instrumental methods of examination with dates on them. Each examination has a medical decision (summary). If some examinations were repeated, the dynamics is indicated.

When conducting special examinations (punctures, EHDS, ultrasound, etc.), the presence of the trainee student is advisable.

Laboratory indicators of a healthy person are given in Appendix 14.

THE CLINICAL DIAGNOSIS AND ITS SUBSTANTIATION (EVIDENCE)

The nosological principle is leading in the diagnosis. First, the diagnosis is formulated in terms of the accepted classifications and nomenclature of ICD-10 (see Appendix 15).

The diagnosis includes the following:

- main condition with an indication of the clinical form, stage, phase;
- complications of the main condition;
- comorbidities.

The main condition and its complications are substantiated based on:

- patient complaints;
- anamnesis of the disease (duration of the disease - hours in an acute form, years in a chronic form);
- anamnesis of life (if relevant to the development of the disease);
- physical and local status examination data listing general and local symptoms of the disease;
- data from laboratory and instrumental methods of examination (description of the changes indicating this disease (e.g., ultrasound examination is not limited to the «cholelithiasis» diagnosis, but describes the gallbladder with concrements, ducts) rather than the medical decision on them).

THE DIFFERENTIAL DIAGNOSIS

Differential diagnosis is written in the form of a report. The diagnosis is made for diseases characterized by a clinical picture similar to the main condition, taking into account the patient's sex (e.g., for women acute appendicitis,

acute cholecystitis are additionally differentiated from acute genital pathology) and the form of the disease (e.g., in retroperitoneal appendix, acute appendicitis is differentiated from acute pathology of the kidneys and ureters).

First, similar clinical manifestations that cause differentiation of these diseases are indicated, then differences in the clinical picture, allowing to exclude them, are indicated. Results of additional examination methods can also be used for the purpose. A simple listing of all the differential diagnostic features described in the literature should be avoided. In differential diagnosis, it is necessary to base the diagnosis only on the clinical picture of the disease and the results of the examination of a patient.

TREATMENT

In this section of the medical history of a surgical patient, the choice of the method of treatment — conservative or operative — is clearly substantiated in accordance with the medical care standards. Conservative therapy includes:

- regimen;
- diet (see Appendix 16);
- etiotropic treatment;
- pathogenetic treatment;
- symptomatic treatment;
- systemic treatment;
- immunocorrecting therapy;
- physiotherapy.

When prescribing drug therapy, it is necessary to remember the inadmissibility of polypragmasy (prescription of many different remedies - more than five - at the same time) and the incompatibility of some medications.

All prescriptions are recorded in the treatment sheet (see Appendix 17). It contains the patient's name, age, date of hospitalization and discharge, ward number. All medications are written in Latin transcription. Doses, their frequency, routes, prescription and cancellation dates are written in appropriate columns. Similarly, data on physiotherapy, exercise therapy and preparation for special examination methods are recorded.

If operative treatment is necessary, preoperative preparation, premedication and postoperative treatment are recorded in the treatment sheet following the same requirements.