

**FEDERAL STATE BUDGET EDUCATIONAL
HIGHER EDUCATION INSTITUTION
"ROSTOV STATE MEDICAL UNIVERSITY"
MINISTRY OF HEALTH OF THE RUSSIAN FEDERATION**

FACULTY OF TREATMENT AND PREVENTION

Appraisal Fund
in practice "Doctor's Assistant (Surgeon)) »

Specialty 05/31/01 General Medicine

2023

1. The form of intermediate certification is a test.
2. Type of intermediate certification - interview.
3. List of competencies formed by the discipline, or in formation which discipline is involved

professional (PC)

Code and Name professional competencies	Indicator(s) of achievement of professional competence
PC 5	<p>Know:etiology, pathogenesis and preventive measures most often common surgical diseases; clinical picture of these diseases and their complications; modern methods of clinical, laboratory and instrumental examination of patients; methods of treatment, indications for their use; deontological aspects in surgery.</p> <p>Be able to:collect anamnesis, conduct a general clinical examination patients with surgical diseases; analyze data from general clinical examination; draw up a plan for the use of laboratory and instrumental methods for examining the patient; analyze data from laboratory and instrumental research methods; formulate a detailed clinical diagnosis, justify it on the basis of a differential diagnosis; formulate indications for conservative and surgical treatment; perform the most common medical procedures.</p> <p>Own:diagnose the disease; draw up an examination plan a patient with this disease; determine the profile of the medical institution where the patient should be sent for further examination and treatment; evaluate the results of laboratory research methods; diagnose the presence of typical diseases on radiographs, scanograms, ultrasonograms, computed tomograms.</p>

4. Types of assessment materials in accordance with the competencies being developed

Name achievement indicator (ID) competence	Types of assessment materials	
	Current certification	Interim certification
PC 5	Questions for control Types of SRS: Preparation To activities/ current control/ intermediate certification.	Final questions for interviews

5. Current control

<i>Types and forms of control from RPD disciplines</i>	<i>number of exemplary (typical) tasks for 1 competency</i>
<i>Interview</i>	<i>test questions on the topics of the section</i>

PC-5: Interview

List of questions

1. Colonoscopy. Indications, procedure

Colonoscopy is a method of endoscopic diagnosis of diseases of the colon. Colonoscopy is the most informative method for early diagnosis of benign and malignant tumors of the colon, nonspecific ulcerative colitis, Crohn's disease, etc. and allows in 80-90% of cases to examine the entire colon.

During a colonoscopy, the condition of the colon mucosa is visually assessed. During colonoscopy, it is also possible to perform various therapeutic procedures - removal of benign tumors, stopping bleeding, removal of foreign bodies, recanalization of intestinal stenosis, etc.

The indication for a colonoscopy is suspicion of any disease of the colon. Colonoscopy is indicated for inflammatory diseases of the colon, especially ulcerative colitis and Crohn's disease. It is also used in emergency situations with intestinal bleeding, obstruction, and the presence of foreign bodies.

Preparing for a colonoscopy.

On the eve of the study, at 14:00 the patient is prescribed laxatives (Fortrans). After independent bowel movements, you need to do two enemas of 1-1.5 liters each. Enemas are given with water at room temperature at 20 and 22 hours. In the morning on the day of the study, it is necessary to do two more of the same enemas (at 7 and 8 o'clock).

The patient lies on the couch or examination table on his left side, with his knees pulled up to his chest. The colonoscope is inserted through the anus into the lumen of the rectum and gradually moves forward with a moderate supply of air to straighten the lumen of the intestine.

Complications. Complications of colonoscopy, the most dangerous of which is bowel perforation, are very rare.

2. Digital examination of the rectum. Indications, methodology. An objective examination of the digestive organs should be completed with an indispensable examination of the rectum with a finger in every surgical patient. Compliance with this rule reveals a large number of early forms of cancer and other asymptomatic diseases of the rectum.

The study is carried out in the patient's knee-elbow position, in the supine position with legs bent and spread, in the standing position, in the lateral position and in the squatting position. Before inserting a finger into the rectum, it is necessary to examine the area of the anus and the entrance to the rectum. They feel the mucous membrane of the anus, the sphincter, and then examine all the walls of the rectum, turning the finger clockwise. At the same time, pay attention to the condition of adjacent organs and tissues. If a pathological substrate is detected (infiltrate, bladder tumor, etc.), the examination should be carried out with both hands. The left hand is placed in the suprapubic or ilioinguinal regions.

3. Pleural puncture (indications, technique).

The puncture is performed for diagnostic and therapeutic purposes to determine the nature and quantity of the contents of the pleural cavity, its aspiration, and expansion of the lung. It is used for exudative pleurisy, pleural empyema, pneumothorax, hemothorax, for biopsy of pleural and lung tumors, for superficial lung abscesses, for the introduction of drugs into the pleural cavity.

TECHNIQUE. To remove air from the pleural cavity, the puncture should be carried out in the 2nd intercostal space along the midclavicular line (with the patient sitting) or in the 5th-6th intercostal space along the midaxillary line (with the patient lying on the healthy side with abducted

behind your head with your hand). For hydro- and hemothorax, the puncture can be performed in the VII-IX intercostal space along the posterior axillary or scapular line.

Before the puncture, the skin and subcutaneous tissue are infiltrated with a 0.5% novocaine solution like a "lemon peel", then the skin is fixed with the left hand, pulled down along the rib, and the needle is inserted with the right hand directly above the upper edge of the rib. A needle 6-10 cm long (depending on the thickness of the subcutaneous tissue and the nature of the exudate) is passed to a depth of 3-4 cm strictly along the edge of the rib, anesthetizing the intercostal muscles along the way.

After aspiration of a portion of the pleural contents, the rubber tube is clamped, the syringe is disconnected and emptied, then reconnected to the tube, and the manipulation is repeated.

Contraindications. Obliteration of the pleural cavity.

Possible complications. Intrapleural bleeding, hemoptysis, pneumothorax, air embolism of the vessels of the brain and heart, damage to the lung, diaphragm, liver.

4. Abdominal puncture. Indications, method of implementation.

Indications. Obtaining the contents of the abdominal cavity for examination, inserting a "groping" catheter, laparoscope, removing ascitic fluid.

Technique. Under local anesthesia (0.25% or 0.5% novocaine solution - 10-20 ml), with a scalpel above or below the navel along the midline in the transverse direction, the skin is dissected for 1 cm. The upper edge of the skin wound is sutured with a silk thread on a cutting needle and This thread is used as a holder (clothes tacks can be used for this purpose), lifting a section of the anterior wall of the abdominal cavity in a conical manner.

Through the skin incision and subcutaneous tissue, a trocar is brought to the aponeurosis, fixed with a holder, and with rotational movements it is passed into the abdominal cavity in an oblique direction upward and slightly to the left. This creates a feeling of failure.

For ascites, a puncture of the abdomen is usually performed along the midline at the middle of the distance from the navel to the pubis.

The liquid must be released slowly while monitoring the patient's condition. As it is released, the abdomen should be tightened with a towel to prevent fainting as a result of a sharp decrease in intra-abdominal pressure and the movement of blood into the vessels of the abdominal cavity.

Contraindications: adhesions, flatulence.

5. Select instruments and remove sutures; Execution technique.

During the removal of postoperative sutures, the manipulation area is treated with an antiseptic. When carrying out manipulation, to prevent infection of the wound, you should not pull through the section of suture material that was on the surface. Therefore, the suture knot is slightly pulled to the side with tweezers until the section of thread that was inside the skin appears (it differs in color). At this point, the thread is crossed with scissors, and then pulled out from the opposite side. The surface is again treated with an antiseptic and covered with a sterile bandage.

6. Install a nasogastric tube;

Indications. Taking gastric juice, aspiration of stomach contents (in case of bleeding, congestion associated with intestinal obstruction, etc.), decompression, gastric lavage, feeding the patient.

Technique. If the patient's condition allows, then he is seated on a chair, leaning tightly against the back and slightly tilting his head forward. Cover the patient's neck with the left hand, and take a thick probe moistened with water or Vaseline oil in the right hand. The rounded end of the probe is placed on the root of the tongue and the patient is asked to swallow, while quickly moving the probe into the esophagus. Next, the patient must take several deep breaths, during which the probe continues to be inserted. At the same time, the patient makes swallowing movements and breathes deeply through the nose. The probe should not be squeezed by teeth.

The length of the esophagus from the upper incisors to the cardiac part of the stomach is on average 40 cm, but it varies significantly depending on the height and constitution of the patient. Before probing, it is necessary to measure the distance from the upper front teeth to the navel, adding 6-7 cm to the resulting figure. The resulting length is equal to the distance from the entrance to the oral cavity to the pylorus of the stomach, i.e. to the area to which it is advisable to extend the probe.

7. Select instruments and medications to stop bleeding from the veins of the esophagus;

Execution method. Treatment method with a Blackmore obturator probe

When bleeding from varicose veins of the esophagus and stomach, a Blackmore probe is used, the introduction of which helps stop the bleeding; in addition, the probe is used to feed the patient, as well as to monitor the results of treatment.

The probe is lubricated with Vaseline and, after anesthesia, is inserted into the stomach through the lower nasal passage. Through a yellow cuff, 70 cm of air is injected into the gastric balloon using a Janet syringe. After clamping with a clamp, the probe is pulled up to the cardiac part of the stomach and fixed in this position. Air is slowly introduced into the esophageal balloon (red cuff) in small portions (30-40 cm) over 5-10 minutes. A total of 100-150 cm of air is introduced. The cuff is also clamped with a clamp.

Blood clots are removed from the stomach through an obturator probe and rinsed with cold water. To prevent bedsores, the balloon is relaxed for 20-30 minutes after 4-5 hours. Food is administered through a tube in small portions 5-6 times a day. Tamponade of varicose veins with a probe can last up to 2-3 days and be repeated if necessary. To remove the probe, the air from the cylinders is sucked out with a syringe, and the patient is given a spoonful of Vaseline oil to drink. After 15-20 minutes, the probe is gradually and carefully removed.

8. Sigmoidoscopy. Indications, methodology.

Using a sigmoidoscope, you can examine the intestinal mucosa to a depth of 30-35 cm from the anus. Indications for sigmoidoscopy are pain in the anus, discharge of blood, mucus or pus from it, stool disorders (constipation, diarrhea), suspicion of disease of the rectum and sigmoid colon.

Sigmoidoscopy is usually performed with the patient in the knee-thoracic position. In case of severe pain in the anus (for example, anal fissure with pain syndrome, anusalgia), rectoscopy is performed under local (perianal block) or general anesthesia.

A rectoscope is inserted into the anal canal and gradually moved forward with a moderate supply of air to straighten the intestinal lumen; after removing the rectoscope obturator, under visual control, it is carried up to the sigmoid colon. Then, using a circular motion, the tube is removed from the intestinal lumen, continuing continuous inspection of its wall.

9. Temporary and final stop of bleeding from a wound. Methods, methodology.

Application of a tourniquet.

Indications. Bleeding from the arteries of the extremities.

Technique. A bandage or towel is applied circularly to the thigh or shoulder (proximal to the bleeding wound), over which a tourniquet is wound very tightly (each subsequent round of the tourniquet should cover half the width of the previous one) and secured accordingly (using a hook). Before applying a tourniquet, the limb must be elevated to create an outflow of venous blood from it. If a medical tourniquet is not available, you can use a belt, rubber tube, or other suitable items that are tied around the limb by inserting a piece of stick or metal and making a "twist." It should be remembered that the tourniquet must be applied very tightly, since otherwise the bleeding may continue or intensify due to the fact that blood continues to flow through healthy arteries into the limb and flow out through damaged veins.

Pressure of arteries.

If arteries are damaged, along with applying a tourniquet, pressing the vessel to the bone (at certain points) is used to stop bleeding.

Finger pressing the artery for a long time, when performed correctly, leads to the cessation of bleeding, but it is short-lived, since it is difficult to continue pressing the vessel for more than 15-20 minutes. The artery is pressed in those areas where the arteries are located superficially and near the bone: the carotid artery is the transverse process of the VI cervical vertebra, the subclavian artery is the first rib, the humeral artery is the area of the inner surface of the humerus, the femoral artery is the pubic bone. When bleeding from the subclavian and axillary arteries, it is better to fix the arm with its maximum extension back. In this case, compression of the subclavian artery occurs between the collarbone and the first rib.

Methods for definitively stopping bleeding:

Mechanical methods.

Ligation of a vessel in a wound is the most reliable way to stop bleeding. For bleeding from vessels that are difficult or impossible to ligate, clipping is used - clamping the vessels with clips.

The main indication for applying a vascular suture is the need to restore the patency of the main arteries. The vascular suture is applied manually using atraumatic needles.

Physical methods.

Thermal methods of stopping bleeding are based on the ability of high temperatures to coagulate proteins and the ability of low temperatures to cause vasospasm. In case of diffuse bleeding from a bone wound, wipes soaked in a hot isotonic sodium chloride solution are applied to it. Applying an ice pack to subcutaneous hematomas and electrocoagulation for gastric bleeding is widely used in surgery.

Diathermocoagulation, laser, and cryosurgery are used.

10. Stomach bleeding. Algorithm of the surgeon's actions.

All patients with ulcerative gastroduodenal bleeding should be hospitalized in a surgical hospital or ICU; Continuous nasogastric intubation is recommended; Patients with ulcerative gastroduodenal bleeding are recommended to perform EGDS within the first two hours of hospitalization;

If bleeding from the ulcer continues (FI-A, FI-B), endoscopic hemostasis is necessary;

For bleeding FII-A, FII-B, endoscopic prevention of recurrent bleeding is recommended;

If there is a clot at the bottom of the ulcer, it is recommended to completely remove it using irrigation followed by treatment of the ulcer;

Surgery

Emergency surgery is indicated in patients with ongoing bleeding when endoscopic hemostasis is ineffective (or impossible) or when bleeding recurs;

For bleeding gastric ulcers, it is recommended to perform gastric resection;

For bleeding duodenal ulcers, the following surgical interventions may be recommended:

Pyloroduodenotomy with excision of the anterior wall ulcer, Finney pyloroplasty and truncal vagotomy;

Pyloroduodenotomy with suturing of the posterior wall ulcer, Finney pyloroplasty and truncal vagotomy;

Gastric resection;

In patients in critical condition, it is possible to perform a gastro(duodeno)tomy with suturing of a bleeding vessel at the bottom of the ulcer;

11. Check for symptoms of acute pancreatitis.

Clinical symptoms of acute pancreatitis depend on the morphological form, period of development and severity of the systemic response to inflammation syndrome. In the initial period of the disease (1-3 days), both with the edematous (abortive) form of pancreatitis and with progressive pancreatitis, patients complain of sharp, constant pain in the epigastric region, radiating to the back (girdling pain), nausea, and repeated vomiting.

The abdomen is usually soft, all parts participate in the act of breathing, and sometimes some bloating is noted. Shchetkin-Blumberg's symptom is negative. In approximately 1-2% of seriously ill patients, bluish, sometimes with a yellowish tinge (Gray-Turner symptom) spots and traces of resorption of hemorrhages in the pancreas and retroperitoneal tissue appear on the left side wall of the abdomen, indicating hemorrhagic pancreatitis. The same spots can be observed in the navel area (Cullen's sign). Percussion reveals high tympanitis over the entire surface of the abdomen - intestinal paresis occurs due to irritation or phlegmon of the retroperitoneal tissue or concomitant peritonitis. When a significant amount of exudate accumulates in the abdominal cavity, dullness of percussion sound in the sloping parts of the abdomen is noted.

When palpating the abdomen, pain in the epigastric region is noted. Only sometimes resistance and pain are noted in the epigastrium in the area where the pancreas is located (Kerte's symptom). Palpation in the left costovertebral angle (projection of the tail of the pancreas) is often painful (Mayo-Robson symptom).

12. Check for symptoms of acute appendicitis.

To determine pain symptoms, deep palpation of the abdomen is performed. It begins, just like the superficial one, on the left side away from the place of projected pain. Often (40%) the appearance or intensification of pain in the right iliac region is detected with a sharp, hacking cough (Kushnirenko's symptom). Concussion of internal organs also occurs with Rovsing's symptom: jerky pressure with the left hand on the abdominal wall in the left iliac region, corresponding to the location of the descending part of the colon, and with the right hand on its overlying part, causes the appearance or intensification of pain in the right iliac region. When the patient turns on his left side, the appearance or intensification of pain is noted in the right iliac region (positive Sitkovsky's sign). If the inflamed process is located in the right iliopsoas muscle (m. ilicopsoas), then palpation of the right iliac region when the patient lifts the right leg straightened at the knee joint will cause sharp pain (Obraztsov's symptom). When a hand quickly slides along a stretched shirt from the xiphoid process to the right iliac region with a relaxed abdominal wall, sharp pain appears (Voskresensky's symptom).

13. Check the symptoms of acute cholecystitis.

Murphy's symptom: sign of cholecystitis; the patient is in a supine position; the left hand is positioned so that the thumb fits below the costal arch, approximately at the location of the gallbladder. The remaining fingers of the hand are along the edge of the costal arch. If you ask the patient to take a deep breath, he will be interrupted before reaching the top, due to acute pain in the abdomen under the thumb.

Ortner's sign: the patient is in a supine position. When you tap the edge of your palm on the edge of the costal arch on the right, pain is detected.

Mussi-Georgievsky's symptom (phrenicus symptom): pain when pressing with a finger above the collarbone between the anterior legs of the sternocleidomastoid muscle. Kehr's symptom: pain when inhaling during palpation of the right hypochondrium.

Boas's sign: area of hyperesthesia in the lumbar region.

Zakharyin's symptom: pain when tapping or pressing on the area of the gallbladder projection.

14. Prepare the surgeon's hands for the operation;

wash your hands with warm water and soap for 2 minutes, then dry your hands with a sterile cloth; treat nail beds and periungual areas with disposable sterile wooden sticks moistened with an antiseptic;

apply the antiseptic to the skin of the hands and forearms in portions, rubbing thoroughly:

a) rub palm against palm

b) rub your left palm over the back of your right and vice versa

c) rub your palms with crossed fingers spread out for at least one minute

d) rub the back of your bent fingers on the palm of your other hand

e) alternately rub your thumbs in a circular motion

f) alternately rub your palms with the fingertips of the opposite hand in multidirectional circular movements. For one treatment, 10 ml of antiseptic. After the antiseptic has completely evaporated, put on sterile gloves.

15. Conducting a study of the respiratory system in a surgical patient; Standard: The study begins with the characteristics of breathing and determining the respiratory rate per minute.

During examination, the shape of the chest is noted, both halves are compared, the uniformity of their participation in breathing, the state of the intercostal spaces, the shape of the epigastric angle, the presence of scars and spots, retractions or protrusions.

Using topographic percussion, the boundaries of the lungs are determined.

Palpation determines the condition of the chest skeleton, intercostal spaces, clavicles, sternum, epigastric angle, xiphoid process, reaction to compression of the chest in the lateral and anteroposterior directions. At the same time, vocal tremors are checked.

Auscultation of the lungs is carried out first in symmetrical sections of the chest (front, side, back), and then each lung separately. The nature of breathing, the presence of wheezing and pleural friction noises are noted.

16. Conducting a study of the cardiovascular system in a surgical patient; Standard: The study of the organs of the cardiovascular system begins with an examination of the areas of the body where the main arterial and venous trunks pass. The temporal artery is projected 1 cm anterior to the tragus of the auricle at the level of the zygomatic bone, the common carotid arteries are projected on the anterior surface of the neck medially from the sternocleidomastoid muscles, the brachial artery

- along the internal groove of the shoulder, the radial artery - along a line running from the middle of the ulnar fossa to a point located 0.5-1 cm inward from the styloid process of the radius. The radial artery is palpated along this line 2-3 cm proximal to the wrist joint. The femoral artery passes 2 cm under the popliteal ligament, the popliteal artery - along the midline of the popliteal fossa (the artery lies deep and is difficult to palpate), the artery of the dorsum of the foot

- between the first and second metatarsal bones. Posterior tibial artery - between the posterior edge of the inner malleolus and the Achilles tendon.

It is necessary to pay attention to visible and unusual pulsation (carotid dancing, aneurysms), the condition of the saphenous veins (expansion of collaterals in the neck, chest or abdominal walls, on the limbs, varicose veins in the system of the large and small saphenous veins of the lower extremities). At the same time, the area of the heart is examined (apex beat, cardiac hump). Using the percussion method, the boundaries of the heart are determined (relative and absolute dullness). The lower border of the heart is the apical impulse, normally determined at the level of the fifth intercostal space, the right border is 1 cm to the right from the edge of the sternum, the left border is 1-2 cm inward from the midclavicular line, the upper border is at the upper edge of the third rib.

Palpation determines the presence of pulsation, elasticity of the artery, characterizes the pulse (frequency, tension, filling, rhythm), cardiac impulse, determines the retrosternal pulsation of the aorta (the second or third finger is placed in the depth of the jugular notch, trying to penetrate the sternum, with the patient's head tilted and shoulders raised).

Auscultation of the heart is performed at certain points: in the area of the apex (bicuspid valve), in the area of the fifth costal cartilage on the right (tricuspid valve), in the area of the second intercostal space on the right at the edge of the sternum (aortic valve), in the area of the second intercostal space at the sternum on the left (pulmonary valve). Listening to the heart is carried out at rest (sitting, lying down) and after a load acceptable for the patient. The surgeon must identify systolic or diastolic murmurs, pericardial friction murmurs, accent tones and other pathological changes, which, if necessary, are clarified by consulting a therapist, ECG, echocardiography and other more complex and special research methods.

The plan for examining the cardiovascular system includes determining arterial and venous pressure and checking some functional tests. The Stange test involves asking the patient to hold his breath after taking a deep breath. In a calm state, a person holds his breath for 40-60 seconds. Saabrase test - maximum breath holding after exhalation. Indicators of the Stange test are less than 20 seconds, and the Saabrase test is less than 10-12 seconds, indicating insufficiency of the reserve function of the cardiac and respiratory systems.

17. Conduct an examination of the abdomen of a surgical patient;

They start with inspection, then active movements, superficial palpation, deep palpation, percussion, auscultation. A finger examination through the rectum is indicated.

During examination, the shape of the abdomen is determined (symmetry, protrusions and their displacement during breathing, flattening, excessive deposition of adipose tissue), participation in respiration, the presence of scars, pigment spots, visible peristalsis, dilated veins. Normally, the upper half of the abdomen is somewhat retracted, and the lower half is slightly protruded.

After completing the examination, active movements are checked: the patient is asked to cough, strain and raise his head and shoulder girdle without using his hands. This is necessary to identify protrusions on the abdominal wall.

Checking active movements allows you to identify pain in the abdomen, reducible hernias, and conduct a preliminary diagnosis of the location of the tumor (when the abdominal muscles are tense, tumors emanating from the abdominal organs disappear or become less noticeable). Percussion of the abdomen reveals pain (localization and severity), changes in percussion sound (dullness, high tympanitis), the boundaries of the liver and spleen. Percussion, first quiet and then more intense, is performed along the linea alba of the abdomen, then over the rectus muscles, outward from them, and finally, the sloping areas are percussed. If the presence of fluid in the abdominal cavity is suspected, turn the patient on his side and compare the zones of dullness when the patient is positioned on his side and on his back. Percussion of the abdomen can be preceded by light tapping of the abdominal wall with the tips of bent fingers. The condition of the linea alba, the umbilical ring and the superficial rings of the inguinal and femoral canals is checked. Approximate palpation should be carried out with both hands, first with the entire palm, and then with the fingers, on both sides at once, in order to obtain comparative data on the localization of muscle tension, its severity, as well as the localization and intensity of pain. The information obtained after superficial palpation is supplemented by deep palpation.

Deep palpation is carried out when examining the liver and spleen. Deep palpation can be done only after superficial palpation has been performed; palpation should be carried out carefully, gradually penetrating into the depths of the abdominal cavity (in no case should you immediately jerk sharply into the abdomen - this causes pain even in a healthy person, and can harm the patient); when palpating the liver and spleen, you must use a bimanual examination method, and when examining with one hand, fix the corresponding one with the other

costal arch in the exhalation position. He places his hands painfully on his hips and relaxes his abdominal wall.

Listening to the abdomen should be an integral part of the examination of the surgical patient.

18. Technique for processing the surgical field;

On the eve of the operation, the skin in the area of the intended surgical intervention is thoroughly washed with soap and water, and during orthopedic operations and operations where large foreign bodies are left in the wound (pins, meshes, artificial joints and other structures), after mechanical cleaning of the skin, the surgical field is treated with an antiseptic and closed aseptic dressing. On the morning of the operation, the hair in the area of the surgical field is shaved dry and wiped with alcohol.

To treat the skin of the surgical field, the following are used: 1% iodonate solution, 0.1% iodopirone solution, 0.5% chlorhexidine bigluconate solution.

19. Determine the suitability of blood for transfusion;

Before transfusion of a blood transfusion medium, the doctor must make sure that it is suitable for transfusion and make sure that the designation of the blood group and Rh of the donor and recipient are identical. To do this, a visual inspection of the bottle or container with blood is carried out: the tightness of the packaging, the correctness of certification (number, date of preparation, designation of the group and Rh condition, name of the preservative, full name of the donor, name of the manufacturing institution, doctor's signature).

It is necessary to determine the suitability of stored canned blood with sufficient lighting at the storage site, because the slightest agitation of the blood can lead to an erroneous conclusion due to the plasma turning pink from mixing with red blood cells. The criteria for the suitability of blood or red blood cells for transfusion are: the transparency of the plasma, the absence of flakes, fibrin threads, pronounced (red coloring of the plasma layer) hemolysis, the uniformity of the globular mass layer and the absence of clots in it, the presence of a clear boundary between the globular mass and plasma.

When blood or erythrocyte mass is contaminated with bacteria, the color of the plasma becomes dull, grayish-brown, it loses transparency, suspended particles appear in it in the form of flakes or films (and sometimes the transfusion medium has a strong unpleasant odor when the container is opened). Such blood and red blood cells cannot be transfused.

Transfusion of donor blood and its components that have not been tested for HIV, hepatitis B antigen and syphilis is prohibited.

20. Prepare a system for blood transfusion;

The intra-arterial infusion is performed by a doctor. Infusion is carried out from glass bottles or plastic bags using special disposable systems. Intra-arterial infusion is carried out under pressure (160–220 mm, sometimes up to 260–280 mmHg), which is created by forcing air into the bottle using a rubber bulb attached to the blood transfusion system. Intra-arterial infusion is carried out by arteriosection, arteriopuncture or percutaneous catheterization of the arteries. For this purpose, the brachial, femoral or tibial artery is most often used.

Intravenous infusions can be carried out drip or stream. For jet infusion with a syringe, you must have a syringe with a capacity of 10–20 ml with a needle, a rubber band, alcohol and sterile material.

You should be careful not to let even a small amount of air into the blood during intravenous infusions due to the risk of air embolism.

Intravenous infusion is usually performed into the veins of the elbow by venipuncture or venesection.

A number of medicinal substances (for example, 10% calcium chloride solution), which are administered intravenously without harm, once in the surrounding tissue or under the skin, cause burning pain,

irritation and even tissue necrosis. In such cases, the injection should be stopped and, without removing the needle, the space around the vein should be rinsed with 10–20 ml of a 0.25–0.5% novocaine solution, which, in addition to the analgesic effect, reduces the concentration of the irritant and prevents tissue necrosis.

Before using the system, check the tightness of the packaging bag and the integrity of the caps on the needles. Open the system by tearing the packaging bag and remove it without removing the caps and needles. After mixing the contents of the bottle, treat its stopper with alcohol or iodine, and, freeing the needle of the short tube from the protective cap, inject it into the stopper of the bottle as deeply as possible. The needle outlet tube is fixed parallel to the wall of the bottle. After releasing the needle close to the dropper, it is also inserted through the stopper into the bottle, squeezing the system above the dropper with the plate clamp available in the bag. The bottle is turned upside down, mounted on a tripod and the system is filled in the usual way.

Air is forced out of the filter and dropper by lifting the dropper so that the nylon filter is at the top and the dropper tube is at the bottom. Fill the dropper halfway with the injected solution, then lower it and displace the air from the lower part of the tube by removing the cap until the solution flows out of the needle in a stream. A clamp is placed on the tube in front of the needle.

Venipuncture is performed, the system is connected to a needle and the solution begins to be infused into the vein. Observe for several minutes to see if fluid enters under the skin (swelling may appear), then the needle is fixed with an adhesive plaster in the direction of the vein, and the puncture area is covered with a sterile napkin. During the infusion, you need to monitor the operation of the entire system.

Jet infusions are used when necessary to quickly replace the volume of circulating fluid (massive blood loss during surgery, shock or collapse), but no more than 500 ml are infused at a time.

Drip infusion allows you to slowly administer large amounts of liquid (up to several liters per day). This method of administration has a number of advantages: patients tolerate it better, the injected liquid is slowly absorbed and remains in the body longer, does not cause large fluctuations in blood pressure and does not complicate the work of the heart.

Since internal drip infusion is carried out for a long time, the patient must be placed on his back, the limb should be fixed with a soft bandage and, if possible, a vein of a smaller caliber than the ulnar vein (vein of the leg or dorsum of the hand) should be used.

The rate of administration of the solution is controlled by the dropper. The fluid level in the IV should always be higher than the lower cannula to prevent air from the IV from entering the bloodstream. The vessel with the solution is placed at a height of 1 meter above the bed level and the screw clamp of the dropper is installed so that the flow rate in the drip device is 40–60 drops per minute.

During the infusion, it is necessary to monitor the correct operation of the entire system. If the fluid flow stops, if this is caused by thrombosis of the vein, you cannot increase the pressure in the system and try to clean the cannula, but it is necessary to change the site of infusion, making a new puncture of the vein in a different place. The drip infusion is stopped when the liquid stops flowing into the dropper so that air does not enter the vein.

If it is necessary to administer any medicine intravenously, a needle is used to puncture the tube after lubricating it with iodine tincture. If the medicine needs to be administered slowly, it is poured into a vessel with a solution for drip infusion.

21. Determine the blood group according to the ABO system;

Determination of blood group using anti-A and ANTI-B cyclones

Anti-A and anti-B zoliclones are intended for determining human blood groups of the ABO system in direct hemagglutination reactions and are used instead or in parallel with standard hemagglutinating sera.

Coliclones are made from the ascites fluid of mice carrying anti-A and anti-B antibodies. The determination is made in native blood on a plane at t from +15 to +25°C.

Place 2 drops (0.1 ml) of the reagent on the plate at two points under the designation anti-A and anti-B, and next to it - one drop of red blood cell sediment (0.02-0.03 ml). The serum and red blood cells are mixed with a glass rod. The plate is shaken periodically, observing the progress of the reaction for 3 minutes. After 3 minutes, 1-2 drops (0.05-0.1 ml) of physiological solution can be added to the reaction mixture to remove possible nonspecific aggregation of erythrocytes

22. Conduct a biological test;

Before transfusion, the bottle with transfused blood, red blood cells, plasma is kept after being taken from the refrigerator at room temperature for 30-40 minutes, and in emergency cases it is heated to a temperature of +37 °C in a water bath (under the control of a thermometer).

During a biological test, 10-15 ml of blood (er.mass, its suspension, plasma) is injected into a stream; then observe the patient's condition for 3 minutes. In the absence of clinical manifestations of reactions or complications (increased heart rate, breathing, the appearance of shortness of breath, difficulty breathing, facial flushing, etc.), 10-15 ml of blood is reintroduced and the patient is observed again for 3 minutes. This procedure is carried out 3 times. The patient's lack of response after triple checking is grounds for continuing the transfusion.

23. Conduct a Rh compatibility test;

Rh compatibility test using a 33% polyglucin solution. The sample is carried out in a test tube without heating for 5 minutes. Add 2 drops of the patient's blood serum, one drop of donor blood and 1 drop of a 33% polyglucin solution to the bottom of the test tube. The contents of the test tube are mixed by shaking, then the test tube is tilted almost to a horizontal position and slowly rotated so that the contents spread along the wall of the test tube. This procedure is continued for 5 minutes. After this, add 3-4 ml of isotonic sodium chloride solution to the test tube, mix the contents by inverting the test tube 2-3 times (do not shake) and examine it with the naked eye.

Evaluation of results: the presence of red blood cell agglutination indicates that the donor's blood is not compatible with the patient's blood and cannot be transfused to him. If the contents of the tube remain uniformly colored, the donor's blood is compatible with the patient's blood in terms of the Rh factor.

24. Conduct a group compatibility test

Individual compatibility test for blood groups of the AB0 system.

2-3 drops of the patient's blood serum are applied to a white plate, to which a 5 times smaller drop of donor blood or red blood cells is added. The blood is mixed with the patient's serum, then the plate is periodically rotated for 5 minutes and the result of the reaction is simultaneously observed. The absence of agglutination of the donor's erythrocytes indicates the compatibility of the blood of the donor and recipient with regard to blood groups AB0. the appearance of agglutination indicates their incompatibility and the inadmissibility of this blood.

25. During an operation for acute appendicitis, it turned out that the appendix was immured in adhesions. Its apex faces the small pelvis and is fixed. It is not possible to remove the appendix and cecum into the wound. With difficulty it was possible to remove only part of the cecum with the base of the appendix into the wound. What operational technique can be used (its name and essence)?

The process should be removed using the so-called retrograde method. First, bandage and cross the process at its base, immerse the stump in the purse-string and z-shaped sutures. Then immerse the cecum from the surgical field into the abdominal cavity, isolate the appendage and remove it in parts, dissecting and ligating its mesentery.

26. A 60-year-old patient is operated on for a recurrent inguinal-scrotal hernia for the fourth time. During the audit, it was discovered that the aponeurosis of the external oblique muscle of the abdomen was thinned, disintegrated and did not allow reliable strengthening of the walls of the inguinal canal. How will you strengthen its walls to avoid relapse?

It is necessary to strengthen the wall of the inguinal canal with alloplastic materials. The operation is performed openly, through an incision of 5-9 centimeters. An incision is made in the groin area in the direction from the pubic tubercle to the iliac spine, parallel to and 2 cm above the inguinal ligament. The hernial sac is isolated from the surrounding tissues (in an oblique hernia - from the elements of the spermatic cord), if possible without opening, and is immersed in the abdominal cavity. Then it is necessary to strengthen the inguinal canal with a mesh endoprosthesis. The endoprosthesis is placed on the posterior wall of the inguinal canal and fixed to the structures of the groin area.

27. A 65-year-old patient was operated on for a strangulated inguinal-scrotal hernia. During inspection of the intestine, the strangulated loop turned out to be non-viable. An intestinal resection was performed. What makes a strangulated intestine considered unviable? At what distance from the border of the necrotic area should the intestine be resected in the distal and proximal directions?

The non-viability of the intestine is indicated by the dark bluish-purple color of the intestine, which does not change even after 20-30 minutes of warming with napkins with warm saline, the absence of peristalsis and pulsation of the corresponding mesenteric artery. The resection boundaries should be: in the proximal direction, 40 cm away from the area of necrosis, in the distal direction, 15-20 cm.

28. A 52-year-old patient was admitted to the emergency department. The day before I had a big dinner. In the morning I felt sharp pain in the epigastric region of a girdling nature. There was difficulty breathing, repeated vomiting that did not provide relief, weakness, and profuse sweating. Temperature 37°C. There are no urinary disorders. Retention of stool, gases do not pass away. I had never been sick before. Delivered 2 hours after the onset of the disease. Upon examination, the condition is serious, the patient is pale, acrocyanosis is pronounced, and the skin is covered with cold sweat. Pulse 140 per minute. Blood pressure 100/60 mmHg. The tongue is dry and covered with a white coating. The stomach takes part in the act of breathing. Peristalsis is sluggish. Hepatic dullness is preserved. Free fluid in the abdominal cavity is not detected. The abdomen is soft on palpation. There are no symptoms of peritoneal irritation. Sharp pain in the epigastric region. Voskresensky and Mayo-Robson symptoms are positive. Leukocytes in the blood are $12.0 \times 10^9/l$. Urine diastasis 1024 units.

What is your diagnosis and treatment tactics?

The patient has acute pancreatitis. Severe enzymatic intoxication. Emergency hospitalization is required. It is recommended to begin urgent comprehensive detoxification therapy. Strict bed rest. Hunger. Perinephric bilateral novocaine blockade. Intravenous administration of a 1% solution of 10 ml of novocaine. Antispasmodics (platiphylline, papaverine, no-spa). Pain relief (non-narcotic analgesics). Introduce electrolyte solutions (per 1 liter of 5% glucose solution, 20 ml of 10% potassium chloride solution, 50 ml of 10% sodium chloride solution and 300 ml of 1% calcium chloride solution), protein substitutes (plasma, albumin, aminopeptides) up to 1 - 1, 5 l, 3% sodium bicarbonate solution, 0.5 and 0.5-1 l Ringer's solution - Locke. Suppress pancreatic secretion - octreotide. Prescribe broad-spectrum antibiotics and oxygen therapy

If the therapeutic effect is not achieved, signs of pancreatic necrosis, suppuration or peritonitis appear, the patient should undergo surgery.

29. A 48-year-old patient was admitted to the hospital due to sudden, profuse bloody vomiting. No history of gastric disease can be established

managed. I considered myself healthy. I suffered from Botkin's disease 3 years ago. The general condition of the patient is satisfactory. The patient's brother has pulmonary tuberculosis. What diseases will you have to make a differential diagnosis for? What will be your actions upon admission of such a patient? What additional research methods can be used at the height of bleeding to clarify the diagnosis?

Firstly, in 95% of cases, the cause of hematemesis can be a stomach ulcer, stomach cancer, varicose veins of the esophagus, and secondly, lung diseases (tuberculosis, bronchiectasis, lung abscess), erosive gastritis, Mallory-Weiss syndrome, Werlhoff disease (thrombocytopenic purpura). First of all, you should purposefully collect anamnesis. To exclude bleeding from the veins of the esophagus, you should make sure that there is no "jellyfish head" and examine the condition of the liver and spleen. To exclude stomach cancer, you need to make sure that there is no palpable tumor and detectable metastases. To exclude lung disease, perform a detailed X-ray examination. To exclude thrombocytopenic purpura, perform a Rumpel-Leede test and count the number of platelets. In doubtful cases, in order to clarify the diagnosis at the height of bleeding, X-ray examinations of the esophagus and stomach, fibrogastroscopy, bronchoscopy, and ultrasound of the liver can be performed.

30. A 40-year-old patient, suffering from gastric ulcer for a long time, noted that over the last 2 days his pain had become less intense, but at the same time, increasing weakness and dizziness appeared. This morning, when he got out of bed, he lost consciousness for a few seconds. The patient is pale. There is very little pain in the epigastric region. There are no symptoms of peritoneal irritation. What complication of peptic ulcer disease do you suspect? What additional research will you use to confirm your hypothesis? Therapeutic measures.

The patient appears to have gastric bleeding. He should be sent to the surgical department immediately. Continuous nasogastric intubation is recommended; Patients with ulcerative gastroduodenal bleeding are recommended to perform endoscopy within the first two hours of hospitalization;

If bleeding from the ulcer continues (FI-A, FI-B), endoscopic hemostasis is necessary;

For bleeding FII-A, FII-B, endoscopic prevention of recurrent bleeding is recommended;

If there is a clot at the bottom of the ulcer, it is recommended to completely remove it using irrigation followed by treatment of the ulcer;

Surgery

Emergency surgery is indicated in patients with ongoing bleeding when endoscopic hemostasis is ineffective (or impossible) or when bleeding recurs;

For bleeding gastric ulcers, it is recommended to perform gastric resection;

6. Description of indicators and criteria for assessing competencies at the stages of their formation, description of assessment scales

	Levels of competency development		
	<i>Threshold</i>	<i>Sufficient</i>	<i>High</i>

Criteria	Competence formed. Demonstrated threshold, satisfactory sustainable level practical skill	Competence formed. Demonstrated enough level independence, sustainable practical skill	Competence formed. Demonstrated high level independence, high adaptability practical skill
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Evaluation criteria

Mark	Descriptors		
	strength of knowledge	ability to explain the essence of phenomena, processes, do conclusions	logic and subsequence answer
passed	solid knowledge of the basic processes of the studied subject area, the answer differs in depth and completeness of the topic; possession terminological apparatus	ability to explain essence, phenomena, processes, events, draw conclusions and generalizations, give reasoned answers, give examples	logic and subsequence answer
not accepted	insufficient knowledge subject matter being studied areas, unsatisfactory disclosure of the topic; weak knowledge of the basic issues of theory. Allowed serious mistakes in content of the answer	weak analysis skills phenomena, processes, events, inability give reasoned answers given the examples are wrong	lack of logic and consistency answer

Criteria for evaluating forms of control:

Interviews:

Mark in the record book	Description
passed	Mark "PASSED" is assessed answer, displaying a solid knowledge of basic practical skills, distinguished by the depth and completeness of the topic; mastery of terminology; the ability to explain the essence of pathological processes, know the indications for performing skills, features of implementation, give examples; logic and consistency of the answer. However, one or two inaccuracies in the answer are allowed.

not accepted	<p>Mark "NOT PASSED" is assessed answer, revealing ignorance of basic practical skills, characterized by a shallow presentation of the topic; ignorance of the basic issues of theory; inability to give reasoned answers, poor command of monologue speech, lack of logic and consistency. Serious errors in the content of the answer are allowed.</p>
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CHECKLIST FOR EXAMINATION PROCEDURE

(checklist for the second (commission) retake if the study of the discipline ends with a test or exam)

No.	Examination event*	Score/points
1	Interview	Test