LECTURE COMPLEX

Discipline: "General Surgery"

Discipline code: GS3304

EP name: 6B10101 "General Medicine"

Amount of study hours/credits: 120 hours (4 credits)

Course and semester of study: 3rd year, V semester

Volume of lectures:10

Shymkent, 2023

The lecture complex was developed in accordance with the OP "Medicine" and discussed at the meeting of the department

Protocol № 2 01 09 2023

Head of the Department,
Candidate of Medical Sciences,
Acting Associate Professor Zhumagulov K.N.

Lecture No. 1

1. Topic: History of surgery. Asepsis.

2. Purpose: To consolidate and expand students' knowledge on general issues of surgical, oncological, resuscitation and trauma care organizations. To teach the management of medical records in outpatient clinics, polyclinics, trauma centers and hospitals. Get acquainted with the structures and principles of work of the NEA, polyclinics, trauma centers and hospitals. To teach to master the skills of conducting therapeutic and preventive measures. In outpatient, polyclinic, inpatient and sanatorium-resort conditions for various diseases. To teach clearly and unconditionally to carry out the orders of the Health care of the Republic of Kazakhstan when providing medical care to the population. To consolidate and expand students' knowledge on general issues of asepsis. To teach to recognize different types of infections, ways of their spread. Teach preventive measures aimed at preventing pathogens from entering the body and methods to combat them. To familiarize students with the types, principles of asepsis, manipulations performed and methods of sterilization. To familiarize students with the types of autoclave, the principles of operation of sterilizers. They will strictly follow the principles of sterilization according to the requirements of asepsis.

3. Lecture theses:

The word "SURGERY" in the modern understanding and meaning of this discipline does not correspond to its literal translation from Greek. The word "SURGERY" means "NEEDLEWORK, CRAFT, MESTERSTVO". Understanding surgery in this sense does not correspond to its modern content, sharply narrows the scope of this important and responsible branch of medicine as a science and as a practical discipline and diminishes the role of the surgeon as a doctor and scientist. Surgery is one of the leading specialties of medical science that studies diseases, for the treatment of which the method of mechanical action on tissues is mainly used, often accompanied by their separation to expose the pathological focus and its elimination. Surgery makes extensive use of all diagnostic and treatment methods such as therapy, gynecology, pediatrics, endocrinology. In addition, surgical methods are also used, including bloody and bloodless operations. For the development and improvement of surgery uses the achievements of physics, chemistry and others. Surgery studies anatomy, pat. anatomy, top. anatomy, pathophysiology, physiology.The diagnosis of surgical operations is very wide. Surgical treatment of patients with all organs and tissues of the human body from the head to the fingers.Along with treatment, surgical operations make it possible to study pathological changes extensively in the experiment. This discrepancy between the name of the discipline and its content has historical roots. In this remote period of mankind, surgery was at such a low level, damn, that its content could only be elementary types of surgical care; such as stopping bleeding, removing a stuck arrow, etc., eliminating dislocations, treating wounds with herbs.Along with periods of high rise of knowledge, techniques in the history of surgery, there were periods of deep decline. For example, the ligation of a bleeding vessel was known even before our era in Alexandria. In the I century AD , it was first described in detail Celsus and only 1500 years later in the XYI century was again "discovered" by Ambroise Pare as a completely new one. In addition, the religion of that time played the silencers of science, including surgery, did not allow autopsies of corpses, blood transfusions. In the distant historical past, surgery flourished in those countries where

the general culture and the development of science and philosophy reached a high level: in Egypt, damn, India, damn, especially in Greece and Rome, in the East.It is enough to recall such names as Hippocrates, Celsus, Ibn Sino (Avicenna), who contributed to the treasury of surgical science. Gradually expanding the range of their activities, surgeons have acquired equality with internists. In 1731, with the opening of the French Academy of Surgeons, surgery took an equal place, but the enmity between therapists did not stop. Only from the moment when scientific surgery was brought under practical surgery, then surgeons began to be responsible not only for the technique of performing operations, the correctness of the diagnosis, indications for surgery and individual postoperative results. In the Hindu tribes of the Sumrut, in which a surgeon who does not know internal diseases is likened to a bird with one wing. The same thought, but more fully and reasonably, was expressed by Paracelsus in XYI: "You are a doctor treating the body and a doctor treating wounds, you must proceed from the same knowledge, only in practice you can separate." In the XYI century, Vesalius, Eustachius – the founder. fund. for anatomy. In 1628, Harvey discovered blood circulation., chemistry – akestedir - drugs and antiseptics. In the XIX century, Claude Bernard discovered experimental physiology. Pasteur, Mechnikov, Koch in the field of microbiology. A feature of the work of a surgeon compared to a therapist is the use of mechanical action on organs and tissues.One group of patients is treated by a therapist and a surgeon – peptic ulcer of the stomach, biliary tract. Currently, with the accumulation of knowledge, experience and differentiated methods, gynecologists, urologists, ENT, eye department, orthopedics have separated from surgery. traumatology. neurosurgery, endocrinology, oncology, vascular department, pulmonary tuberculosis. bones. hepatic department, thoracic surgery, abramine, praktology, intestinal, esophageal and so on. The surgeon must know everything.

Surgical diseases. The first group includes The number of patients 25% in need of surgical treatment. Congenital diseases and anomalies: infection of the anus, obstruction of the gatekeeper, infringement of the Meckel diverticulum, cleft lip, clubfoot, cleft palate, congenital heart defects, congenital bronchiectasia, etc.Traumatological diseases (injuries), fractures, bruises, ruptures, electrotraumatic burns. Inflammatory or purulent surgical diseases caused by microbes and parasites: non-medical diseases, special, and physical. Tumors. Circulatory disorders (necrosis, nepr.)

The second group includes

Patients are operated on when complications are added. (typhoid infection, intestinal perforation, pneumothorax, perforation of stomach ulcers). In addition to the above, all surgical diseases are divided into the following two groups: Diseases requiring mandatory use of surgical methods. Diseases that treat not only surgeons, but also other specialists: therapist, pediatrician, dermatologist, endocrinologist. Surgical diseases are distinguished by the urgency of the necessary assistance: a) Acute surgical diseases requiring emergency intervention, b) Rapidly developing diseases requiring urgent care (tumor), c) Slowly progressing diseases that are operated on as planned.

Organization of trauma care.

The organization of assistance to victims of injuries is of great importance for achieving a positive end result. It is important to eliminate the need to provide early assistance to the victim at the scene of the accident, to ensure continuity of treatment measures at subsequent stages and high quality specialized care. The provision of trauma care consists of the following links: first aid, evacuation to a medical institution, outpatient and inpatient treatment, as well as rehabilitation.

First aid. First aid can be provided both by a doctor or by secondary medical personnel, and by other people in the order of self- and mutual assistance. In developed countries, there is a special system of paramedical services, the main task of which is to provide first aid at the scene of an accident.

Representatives of this service-paramedics, not being medical workers, undergo special training in the amount of 200 hours according to the mandatory program. According to the same program, firefighters, policemen and who want to acquire first aid skills undergo medical training. When

providing assistance at the scene of an accident, it is possible to perform transport immobilization, anesthesia, put a bandage, but the role of carrying out measures to stop bleeding and perform basic cardiopulmonary resuscitation is especially great, since the time factor here is of paramount importance for preserving the life of the victim. Evacuation to a medical facility. In some cases, especially with minor injuries, first aid is enough. But much more often the victim needs qualified medical measures, for which he should be taken to the appropriate medical institution. Usually, the ambulance service is engaged in the evacuation of victims, less often they can be transported by representatives of the police or private individuals (in case of road accidents). When evacuating a victim in a serious condition, it is important first of all to get him to the hospital as soon as possible, but at the same time we must not forget about carrying out anti-shock measures, anesthesia, transport immobilization if there are appropriate indications for their implementation.The state nature of healthcare determines the unity of goals and objectives, forms and methods of work of medical and preventive institutions, whose activities are built according to a single plan. The unity of healthcare is expressed in the unity of theory and practice. The work of scientific medical institutions is based on the request of practice and all scientific achievements should be implemented in healthcare.The main direction of health care is preventive. Disease prevention is the essence of preserving and strengthening the individual and public health of the population of our country.To accomplish this task, there is a wide network of medical and preventive institutions. All these medical institutions can be divided into two main groups: outpatient and inpatient. Outpatient institutions include outpatient clinics, polyclinics, medical and sanitary units, dispensaries, consultations, health centers.

Outpatient clinic is a medical institution designed to provide medical care to incoming patients and patients who are at home. The reception is conducted by the main specialists (therapist, surgeon, pediatrician, dentist). The work is based on the territorial-precinct type.

Polyclinic – differs from an outpatient clinic in that it is possible to receive qualified medical care from various specialists, subjecting patients to examination with the help of various equipment and a diagnostic laboratory.

The medical and sanitary part is a medical and preventive institution of an outpatient type of an enterprise.

Health centers – medical and preventive institutions serve industrial enterprises, institutions, collective farms and state farms, can be medical and paramedic.

A dispensary is a specialized medical and preventive institution that provides assistance to certain patients. There are anti-tuberculosis, skin-venereological, oncological, neuropsychiatric, cardiorheumatology, physical therapy dispensaries.

The task of the dispensary is to actively identify, treat and monitor patients.

Consultations (women's, children's) in addition to the treatment of women and children, medical examinations of pregnant, nursing mothers and children are carried out.

The main function of the junior nurse in the above-mentioned medical and preventive institutions is to create comfort and order, as well as to assist the doctor in receiving patients and performing appointments by nurses.

Hospitals, clinics, hospitals, maternity hospitals and sanatoriums belong to inpatient medical institutions.

A hospital is an institution for inpatient treatment of patients. Depending on the administrative subordination, hospitals are divided into republican, regional (regional), city, district and district.

According to the profile, there are multidisciplinary hospitals that have departments in different specialties and specialized hospitals (tuberculosis, infectious diseases, ophthalmology, psychiatric, etc.) that provide specialized care. In addition, there are multidisciplinary and specialized children's hospitals that provide assistance to the children's population.

The City Ambulance Hospital provides emergency, sanitary and community-based care.

There are also hospitals on water and rail transport, designed to provide medical care to transport workers. The structure of the hospital includes the following units: the reception department, in which the patient is examined, medical documentation is issued for him, sanitary treatment is carried out; medical departments (surgical, therapeutic, etc.); medical and diagnostic departments (X-ray, physiotherapy, laboratories), pharmacy, food hall, laundry, etc.. The united hospital also includes a polyclinic.

A clinic is an institution of an inpatient (hospital) type in which patients are treated, medical students and doctors are taught relevant medical disciplines, and research work is carried out.

In the case when the clinic operates on the basis of a regional or republican, city hospital, such a base is called a clinical one.

A hospital is a medical institution (hospital type) designed to provide medical care to military personnel and their families.

A sanatorium is a medical and preventive institution in which natural factors (climate, mineral waters, therapeutic mud, etc.) are used for the treatment of patients in combination with physical therapy, rational nutrition, rest and treatment.

Sanatoriums are organized both in resorts and in natural areas (local sanatoriums).

There are sanatoriums for adults, children, teenagers and parents with children.

According to the medical profile, sanatoriums are divided into tuberculosis, with diseases of the circulatory, digestive, respiratory organs, with metabolic disorders, musculoskeletal system, nervous system, etc.

Sanatoriums can be single- or multi-profile.

Doctors, nurses, and junior nurses work in all medical and preventive institutions.

Conscientious performance of their duties, sincere treatment of a sick person in all medical institutions, both by doctors and secondary and junior medical personnel, is the key to restoring the health of a sick person.

Knowledge of the rules of patient care, especially in a surgical hospital, is necessary for a future doctor, which is the main task in training a good doctor within the walls of the institute.

Asepsis

Asepsis is a set of measures aimed at preventing infection pathogens from entering the wound.

Sources and ways of spreading infection: exogenous infections – patients with purulent-inflammatory diseases and bacilli carriers. The contact path is when infected objects, instruments, dressing material, surgical underwear come into contact with the wound. The airway is the ingress of microorganisms from the surrounding air. The implantation path of infection is when suture material, bone fixators, implants are left in the wound for a long time or permanently. Endogenous infections are chronic inflammatory processes in the body, outside the area of surgery. The contact pathway is a violation of the technique of surgery, when exudate, intestinal contents enter the wound. The lymphogenic pathway is with lymph flow. The hematogenic pathway is with blood flow.

Preparations used for disinfection and sterilization:

5% -10% alcohol solutions of iodine, for lubricating the skin around the wound, the surgical field, treatment of superficial wounds and abrasions.

Iodonate, contains 4.5% free iodine, is diluted with distilled water 1:4.5. To process the operational field.

Chloramine, 1-2-3% solution for disinfection of hands, household items, non-metallic tools, premises.

Supramuric acid, a mixture consisting of formic acid and hydrogen peroxide. In the ratio of 81 ml of 85% formic acid and 171 ml of 33% hydrogen peroxide, mixed, placed in the refrigerator for 2 hours, 10 liters of a working solution of pervomur (preparation C – 4) are prepared from the base solution. For the treatment of surgeon's hands, surgical instruments, rubber gloves.

Sulema, 1:1000 is used for disinfection of gloves, patient care items.
Ethyl alcohol, in the form of 70% or 96% solution, for the treatment of hands, surgical field, optical instruments, catheters, drains.
Triple solution, formalin – 20g., carbolic acid – 10g., sodium bicarbonate – 30g., distilled water – 1000 ml. for disinfection of gloves, tools, drains.
Carbolic acid, 3-5% solution for disinfection of patient care items.
Lysol, 2% solution for disinfection of patient care items.
Degmicide, contains 30% degmin. 1% degmicide solution (1:30), for the treatment of the surgical field, the surgeon's hands.
Rockcal, 10% or 1% solution. Sterilization of instruments 1:1000, sterilization of rubber gloves 1:4000.
Chlorhexidine (gibitan), 20% solution is diluted with 70% alcohol for the treatment of the operating field, disinfection of instruments, in a ratio of 1:40.
Operating unit.
A set of special rooms for performing operations. The operating unit is isolated from the surgical departments by a vestibule or corridor. The following functional zones are distinguished:
the zone of sterile regime. Operating, preoperative, sterilization. A strict regime zone. A sanitary pass consisting of rooms for undressing staff, a shower, a cabin for putting on sterile clothes. A room for storing surgical instruments, apparatuses, medicines, a blood transfusion room, rooms for the duty team, a senior operating nurse, a bathroom. Restricted mode zone. Production facilities. General mode zone. The offices of the head, the senior nurse, the premises for the analysis of dirty laundry. The sterility of the operating unit, the tank is monitored. sowing the air of the operating room, flushes from the walls, etc. In the operation, cleaning is provided: Pre–cleaning - before the start of the operation; Current cleaning – during the operation, napkins, balls, etc., that have fallen on the floor are removed; Postoperative cleaning – in between operations; Final cleaning – at the end of the working day, wet cleaning with wiping of the ceiling, walls, window sills, all kinds of objects, etc.; General cleaning – at the end of the week. Disinfection of the operating room, wet cleaning and bactericidal ultraviolet lamps.

To prevent contact infection, everything that comes into contact with the wound should be sterile. Sterilization of instruments, dressings, linen includes the following stages: I – pre-sterilization preparation of the material; II – laying and preparation for sterilization; III – sterilization; IV - storage of sterile material.

Sterilization of instruments.

I – pre-sterilization preparation of the material. Thorough mechanical cleaning of tools. Uninfected instruments and syringes are washed with running water with brushes, soaked in one of the cleaning solutions. Infected instruments – 5% lysol solution for 30 min., washed and lowered into a cleaning solution. Instruments with anaerobic infection are soaked for 1 hour in a special solution, 6% hydrogen peroxide solution and 0.5% detergent solution, washed in the same solution and boiled for 90 minutes.

II - laying and preparation for sterilization. For sterilization in dry-burning sterilizers, the instruments are placed in metal boxes. For steam sterilization under pressure in autoclaves, the instruments are wrapped in a waffle towel or cloth. Tools are prepared in advance for specific operations.

III – sterilization. Sterilization of instruments is carried out in dry–burning sterilizer cabinets. With the door open, the temperature is brought to 80-85 C for 30 minutes, dried. At a temperature of 180C, sterilization is carried out for 60 minutes . After 15-20 minutes, when the sterilizer is fully cooled, the chamber is cooled. Sterilization of instruments, syringes, systems can be carried out in an autoclave. When packing packages in bixes, the solutions are opened. Surgical instruments are sterilized for 20 minutes at 2atm, rubber gloves, rubber drains – at 1.1 atm for 40 minutes. When unloading the autoclave, the holes in the bix are closed. sterilization of instruments not subject to heat treatment – endoscopes, thoracoscopes, laparoscopes, devices for artificial blood circulation, is carried out in a special gas sterilizer GPD-250.

IV – storage. The sterility of the material in bixis maintained for 48 hours. If the materials are packed in linen packages, sterility persists for up to 3 days.

Sterilization of the dressing material:

I – pre-sterilization preparation of the material. Properties of the dressing material – do not adversely affect the healing processes: - good hygroscopicity; - be minimally loose; - be soft without injuring the wound surface; - be cheap in production. For the convenience of counting, the dressing material is laid as follows – balls of 50 – 1000 pieces, napkins of 10 pieces. Bathrobes, sheets, etc. are laid in the form of rolls.

II - laying and preparation for sterilization. With a universal material intended for one small typical operation is placed in the bix. With purposeful laying, the necessary set of dressing material intended for a specific operation is laid. In case of specific laying – a certain type of dressing material, linen.
The material is placed loosely, indicators of the sterilization mode are placed inside.

III – sterilization. The dressing material and surgical underwear are sterilized for 20 minutes at a pressure of 2 atm.

IV – storage of sterile material. After cooling, they are unloaded. The sterility period is 48 hours. The direct method of control is bacteriological sowing, performed 1 time in 10 days. Not a direct method – means with a certain melting point, every day – benzoic acid, antipyrine, resorcinol Preparation of the surgeon's hands.

Hand treatment in any way begins with mechanical cleaning, using soap and a brush.

The Alfeld method is wiped with 96% alcohol for 5 minutes.

The method of Furbringer – Solution sulemy1:1000 for 1 min, then 96% alcohol for 3min, lubricate the nail beds with 5% iodine.

The method of Spasokukotsky-Kochergin is mechanical cleaning of hands with a 0.5% solution of ammonia. Hands are washed in 2 basins for 3 minutes. After the end of washing, rinse with a solution of ammonia. Disinfect the skin with napkins moistened with 96% alcohol, for 2.5 minutes.
May Day – within 1 min, 5 surgeons perform hand treatment in one pelvis.
Treatment with chlor hexidinombiglucanate – 12.5 ml of 20% chlorhexidine solution is added to 500 ml of 70% alcohol. Within 3 minutes.
Sterilization of catgut. In the factory, catgut is sterilized by gamma rays. Before sterilization, the catgut is degreased – the catgut threads rolled into rings are placed in a hermetically sealed jar with ether for 24 hours.
The method of sterilization of Claudius – catgut rings are filled with an aqueous solution of Lugol for 10 days, then replaced with a fresh solution of Lugol for 10 days, 96% alcohol – after 4-6 days, sowing for sterility. The Gubarev method is filled with an alcoholic solution of Lugol for 10 days, after replacement in the same solution for 10 days – sowing for sterility. Sitkovsky's method – standard catgut threads are cut into 3 parts of 1.25 m long, wiped with a solution of 1:1000 sulema and rolled into rings, which are lowered into a 2% aqueous solution of potassium iodide – the time in minutes corresponds to the thread number. Then the ring is strung on thick threads and suspended at a distance of 7-8 cm from the bottom of the glass jar, on which crystal iodine is poured. In a jar of 3l – 40g of iodine, 5l – 60g of iodine. No. 0 and 1 are ready in 3 days, № 2, № 3, № 4 – after 4 days, etc. 4. Illustrative material: (Review and illustrative, booklets are attached)

5. Literature:
• Durmanov, K. D. General surgery: / Textbook . - Kagandy: AKNUR, 2017. - 608 bet. S
• Gostischev V.K. General surgery: textbook and CD.– 4th ed. – M., 2016. – 832 p.;
6. Control questions (feedback)
1. What features of the organization of surgical care do you know?
2. What are the distinctive features of cancer care organizations that you know?
3. What are the distinctive features of organizations of trauma care do you know?
4. What are the distinctive features of organizations of resuscitation care do you know?
5. What medical documents can you list?
6. What does the term "Asepsis" mean?
7. What types of pathogens do you know?
8. What ways of spreading infections do you know?
9. What types of sterilizations do you know?
10. What types of treatments do you know?
11. What are the types of sterilizations?
12. What are the types of disinfection of surgical rooms?
13. What are the types of sterilization of instruments?
14. What are the types of sterilization of suture material?
15. What are the methods of treatment of the surgeon's hands before surgery?
16. How is the operational field processed?
Lecture No. 2
1. Topic: Antiseptics.
2. Purpose: To consolidate and expand students' knowledge on general issues of asepsis. To teach to recognize different types of infections, ways of their spread. Teach preventive measures aimed at

preventing pathogens from entering the body and methods to combat them. To familiarize students with the types, principles of asepsis, manipulations performed and methods of sterilization. To familiarize students with the types of autoclave, the principles of operation of sterilizers. They will strictly follow the principles of sterilization according to the requirements of asepsis.

3. Lecture theses:

There are mechanical, physical, chemical and biological antiseptics.

Mechanical antiseptics. The basis of mechanical antiseptics is the removal from an infected, purulent wound, purulent focus of non-viable tissues, pus, fibrin, which are the habitat and nutrition of microbial flora. It is known that healthy tissue is not damaged by the action of purulent microflora and does not contain it. The removal of de-vitalized tissues, although it is not a direct, but an indirect effect on the microflora, contributes to the sterilization of the wound.

Variants of mechanical antiseptics provide for primary surgical treatment of infected wounds, the purpose of which is to excise the edges, walls and bottom of the wound within healthy tissues (see Wounds). Together with the excised tissues, hemorrhages, hematomas, blood clots, foreign microtelae, as well as the microflora contained in them are removed from the wound. The earlier such an operation is performed, the more likely it is to achieve sterility of the wound.

If microbial flora has begun to develop in an infected wound, which is possible with untimely or incomplete primary surgical treatment, or the wound has a purulent character from the very beginning (after opening abscesses, phlegmon), secondary surgical treatment of the wound is used. Excision of the edges, walls, and bottom of the wound is not performed, but removed from it mechanically (scalpel, scissors, vacuuming, rinsing with a jet of liquid under pressure) necrotizing tissues, pus, fibrin, open purulent pockets. At the same time, the microbial flora is also removed and, although it is not possible to achieve sterility of the wound, the amount of microflora in it decreases and favorable conditions for wound healing are created. Any wound dressing has elements of mechanical antiseptics (wound toilet). Removal of blood-soaked, pus-soaked bandages, tampons, washing the wound with a stream of liquid, removal of free-lying necrotic tissues, sequestration, drying the wound with balls and tampons contribute to the removal of microbial flora from it, the amount of which decreases by 10-20 times.

Physical antiseptics. Methods of physical antiseptics are based on the use of the laws of capillarity, hygroscopicity, diffusion, osmosis, the siphon principle, laser exposure, ultrasound. Drainage of wounds, purulent foci (abscesses, empyema) provides for the creation of conditions for the outflow

of wound discharge into the external environment (in a bandage, special dishes with antiseptic solutions). A gauze swab is used as drainage in the treatment of wounds. Tampons of various sizes are prepared from a strip of gauze and loosely injected into the wound; due to its hygroscopicity, the tampon absorbs blood, exudate, pus. Its draining properties manifest themselves up to 8 hours, after which it can turn into a "plug" that clogs the wound and disrupts the outflow of exudate from it. To increase the draining properties of the dressing, tampons are moistened with a hypertonic (5-10%) sodium chloride solution. This contributes to the creation of high osmotic pressure, which leads to an increase in the outflow of fluid from the wound into the bandage. In addition to the usual tampon, Mikulich's tampon is used. A large gauze napkin with a thread sewn to its middle is inserted into the wound. The napkin is placed on the bottom and walls of the wound, forming a "bag", which is filled with gauze swabs. When the tampons are soaked with wound separable, they are removed, leaving a gauze cloth, and the formed cavity is filled with new tampons. Tampons are changed several times — until the outflow of purulent discharge stops, after which the napkin is also removed by pulling the thread.

Drainage can be performed using rubber, chlorvinyl and other tubes of different diameters, which are injected into the wound, the cavity of the abscess, the joint (with purulent arthritis), the pleura (with purulent pleurisy), into the abdominal cavity (with purulent peritonitis). The resulting pus, tissue decay products, and with them microorganisms are released into the dressing through one or more drains. The drainage can be connected by a tube to a vessel into which an antiseptic solution is poured; then the wound discharge will be released into the vessel, thereby reducing contamination of the dressing. Chemical antiseptics, antibiotics, and proteolytic enzymes are injected into the wound or purulent cavity through drainage. For more effective washing of wounds and purulent cavities in them (in addition to drainage for the outflow of wound discharge), another tube is inserted and an antibacterial drug solution is injected through it, together with which tissue decay products, pus, blood and fibrin are removed from the wound through drainage (Fig. 8). Thus, combining physical and chemical methods antiseptics, create conditions for flow-washing drainage. This method is also used in the treatment of purulent pleurisy and peritonitis. To increase the effectiveness of the method, proteolytic enzymes are used as a washing solution, which contribute to a faster melting of non-viable tissues, pus, fibrin (the method of flow enzymatic dialysis). If the drained cavity is sealed (a wound sewn with stitches, pleural empyema, purulent arthritis, an abscess cavity), active aspiration (vacuum drainage) is used. The vacuum in the system can be created using a Janet syringe, which removes air from a sealed jar with a drainage connected to it, or using a water jet suction or a three-tank system. This is the most effective method of drainage, it also helps to reduce the wound cavity, to close it more quickly and eliminate inflammation, and with pleural empyema — to straighten the lung compressed by exudate. Aseptic conditions in the wound can be created by placing the limb with the wound or the patient himself (with extensive burns) in a special chamber in which the using the installation, they create an abacterial environment. Laser radiation in the form of a low-power beam has a bactericidal effect and does not have a damaging effect on tissues. Mainly a carbon-acid laser is used, the focused beam of which has an evaporating effect on necrotic tissues and microorganisms. A very thin coagulation film forms on the walls and bottom of the wound, preventing the penetration of microorganisms and their toxins into the tissues. Laser radiation is used to treat wounds. Low frequency ultrasound has a bactericidal effect. In a liquid medium (wound, closed cavity), ultrasound exhibits physical and chemical properties. In the environment exposed to ultrasound, the effect of cavitation is created - shock waves occur in the form of short pulses with the formation of cavitation bubbles. At the same time, under the influence of ultrasound, ionization of water occurs with the formation of H + and OH", under the influence of which redox processes stop in the microbial cell. Ultrasound cavitation isused to treat wounds.

5. Literature:

• Durmanov, K. D. General surgery: Textbook/ . - Kagandy: AKNUR, 2017. - 608 page. S
• Gostischev V.K. General surgery: textbook and CD.– 4th ed. – M., 2016. – 832 p.;

6. Control questions (feedback)

1. What does the term "Antiseptics" mean?
2. Who is the founder of aseptics and antiseptics?
3. What types of antiseptics do you know?
4. List the classification of antiseptic drugs.
5. What are the methods of using antiseptic drugs.
6. Explain the rules for the use of types of antiseptics?

Lecture No. 3

1. Subject: General issues of anesthesiology.

2. Purpose: To consolidate and expand students' knowledge on general issues of anesthesiology. To teach to identify indications and contraindications to various types of anesthesia, to individually select the type of anesthesia and anesthetic drug. Properly conduct premedication. To teach to recognize the degree of anesthesia and timely provide the patient with intensive care for various complications.

3. Lecture theses:

General issues of anesthesiology.

Anesthesiology is the science of anesthesia and methods of protecting the patient's body from the extreme effects of surgical trauma.. October 16, 1846 is considered the official date of birth of modern anesthesiology – American William Thomas Morton used ether anesthesia when removing a tumor of the submandibular region. In 1844, Wales used nitrous oxide. In 1844 – amputation of the hip by means of sulfur ether by Chistovich. In 1847 – J. Jung Simpson applied chloroform anesthesia, which is currently not used, due to the high toxicity of the drug. In Russia, anesthesia was used by Inozemtsev on February 7, 1847. For the first time intravenous anesthesia was applied – hedonal, which was synthesized. Since 1942, curare-like substances have been synthesized, endotracheal anesthesia with a ventilator appeared.

Local anesthesia.

Anesthesiology is the science of anesthesia and methods of protecting the patient's body from the extreme effects of surgical trauma. Local anesthesia is the anesthesia of certain areas of the body against the background of preserved consciousness. About 50% of operations are performed under local anesthesia.

Indications:

It does not require special long-term preoperative preparation. With contraindications to general anesthesia. The patient does not need constant postoperative supervision. Outpatient operations. Elderly and senile persons, emaciated, suffering from respiratory and cardiovascular insufficiency.

Contraindications:

Intolerance to anesthetic, due to hypersensitivity. age less than 10 years. The presence of mental disorders in the patient, increased nervous excitability. The presence of inflammatory or scarring changes in the tissues. Ongoing internal bleeding.

Methods of local anesthesia:

Infiltration anesthesia according to Vishnevsky. The method is based on the features of the structure of fascial formations. Tight novocaine infiltrates move along the cases and merge with each other, hydraulic tissue preparation is carried out. 0.25% ratsvor of novocaine with the addition of adrenaline is used (3 drops of ratsvor per 100 ml of novocaine solution).Regional anesthesia – conduction, intravascular, intraosseous, spinal, epidural, etc.

Conduction anesthesia, there are the following types: anesthesia of nerve trunks, anesthesia of nerve plexuses, anesthesia of nerve nodes, spinal and epidural anesthesia. The anesthetic is administered peri - or endoneurally.

Conduction anesthesia of the finger according to Oberst – Lukashevich. A rubber tourniquet is applied to the base of the finger, distally, on the back surface of the main phalanx, the skin and subcutaneous tissue are anesthetized, the needle is pushed to the bone and 2-3 ml of 1-2% novocaine solution is injected, the other side is anesthetized in the same way.

Intercostal anesthesia – for rib fractures. Retreating a few cm from the fracture to the spine. The needle is inserted perpendicular to the broken rib, until it stops, then, pulling the needle by 2-3 mm, it is pushed to the lower edge of the rib, sliding along its surface and 3-5 ml of 1-2% novocaine solution is injected.

Novocaine blockades. Circular blockage of the shoulder. On the anterior surface of the middle third of the shoulder with the elbow joint bent, the skin, the fascia of the shoulder, the biceps of the shoulder are pierced with a needle. They reach the humerus, pulling the needle, inject 50-60 ml of 0.25% novocaine solution, the fir of the straightened limb is injected with 50-60 ml of 0.25% novocaine solution.

Circular block of the forearm. In the middle third of the forearm, in the same way. 60-80 ml of 0.25% novocaine solution is injected.

Circular blockade of the hip. Insertion of a needle in the middle third of the thigh along the front surface. They pass to the bone, and slightly pulling back, 150 – 180 ml of 0.25% novocaine solution is injected.

Retromammary blockade. During operations on the mammary gland. At 3-4 points at the lower and upper poles from the outer surface of the breast. 50 ml of 0.25% novocaine solution is injected through each needle injection.

Cervical vagosympathetic blockade. For the prevention of pleuropulmonary shock, in case of chest injury. The patient lies on his back with a roller under his neck, the head is turned in the opposite direction, the arm on the side of the blockade is strongly pulled down. At the posterior edge of the sternoclavicular-mastoid muscle at a level above the intersection with the external jugular vein. They push the anterior and thoracic-clavicular-mastoid muscle, pierce the skin with a needle, push the needle up and inside, focusing on the anterior surface of the spine. 40-50 ml of 0.25% novocaine solution is injected. A sign of properly performed anesthesia is the appearance of a Gorner's symptom (pupil dilation) on the side of the blockade performed.

Paranephral blockade. The patient lies on his healthy side with a roller under the lower back. The leg located on top is stretched out, bent at the knee joint from below. The injection point, the angle formed by the XII rib and the long back muscle along the bisector by 1 – 1.5 cm downwards. The needle is injected perpendicular to the surface of the body and is promoted, with a sense of failure, the needle has entered the paranephral space. The piston is pulled back on itself, make sure there is no blood, 60-80 ml of 0.25% novocaine solution is injected.

Intraosseous anesthesia. The limb is isolated from the general blood flow by applying a cuff, an elastic bandage. The anesthetic is injected on the upper limb into the condyles of the shoulder, the ulnar process, the bones of the hand; on the lower limb – into the condyles of the thigh, ankle, heel bone.

Spinal anesthesia. Introduction of an anesthetic into the subarachnoid space. The patient is seated across the table, the knees should be raised. Puncture is performed between the spinous processes L III and L IV or L II and L III. The landmark is the process L IV, located on the line of intersection of the connecting posterior spine of the iliac bones. the needle is inserted between the spinous processes with a slight downward slope of 5 –10C. when the ligaments are punctured, there is a feeling of failure, and when the duramater is punctured, rotational movements. The appearance of cerebral fluid is the correct anesthesia. Enter 1 ml of 5% novocaine or 0.5 – 0.8 ml of 1% sovcaine solution.

General anesthesia.

General anesthesia or anesthesia is a condition characterized by a temporary shutdown of consciousness, pain sensitivity, reflexes and relaxation of skeletal muscles caused by the effects of narcotic substances on the central nervous system.

Stages of ether anesthesia, there are 4 stages: I – analgesia, II – arousal, III – surgical stage, IV – awakening.

Stage of analgesia (I) – the patient is conscious, but inhibited. There is no superficial pain sensitivity.

Stage of arousal (II) – inhibition of the centers of the cerebral cortex, consciousness is absent pronounced motor and speech arousal. The pupil is wide and does not react to light, cough often appears, vomiting may occur. Lasts 7-15 minutes.

Surgical stage (III) – depending on the depth of anesthesia, there are 4 levels of stage III anesthesia.
Level 1 – the patient is calm, breathing is even, the pupil is narrowed, the reaction to light is preserved. Muscle tone is preserved.
Level 2 – the movement of the eyeballs stops. Pupils dilate, breathing is calm, even. Decrease in muscle tone – perform abdominal operations.
Level 3 – deep anesthesia. Pupils are dilated, I react only to a strong stimulus. Complete relaxation of skeletal muscles. Shallow breathing, sinking of the tongue root, blood pressure is reduced. It is dangerous for the patient's life.
Level 4 – maximum pupil dilation, the cornea is dull, dry. Pulse is ready, frequent, paralysis of intercostal muscles. Respiratory and circulatory arrest may occur.
Stage of awakening (IV) – occurs with the cessation of the anesthetic substance. To suppress the function of the vagus nerve, premedication is performed, 40 minutes before surgery – 1 ml of 1-2% Solution a promedol, or 1 ml of pentozocin and 2 ml of fentanyl.
Intravenous anesthesia.
Advantages – quick introduction to anesthesia. Short-term anesthesia.
Derivatives of barbituric acid – thiopental – sodium, hexenal. The duration of anesthesia is maintained by fractional administration of 100-200 mg of the drug, the total dose of the drug should not exceed 1000 mg.
Viadryl is used at a dose of 15 mg / kg, the total dose is 1000 mg on average. It is more often used together with nitrous oxide. Viadrylis used for introductory anesthesia, for endoscopic examinations.
Propanidide – 10 ml of 5% solution. IV, quickly 500 mg in 30 s., duration of anesthesia snsa 5-6 min. Causes hypotension, is used for introductory anesthesia, for small operations.
Sodium oxybutyrate – in / in, slowly. The dose is 100 – 150 mg / kg. Causes superficial anesthesia, is used for introductory anesthesia. Ketamine – i / v, I / m, a dose of 2-5 mg / kg. Contraindicated in patients with hypertension. It is used in the form of mononarcosis and introductory anesthesia. Diprivan is a short–acting intravenous anesthesia. Ampoules of 20 ml of 1% Solution. The duration of anesthesia is 5-7 minutes. It is used for introductory anesthesia.
Inhalation anesthesia.
Ether for anesthesia – oxidized under the influence of light, explosive. A strong narcotic substance, causes deep anesthesia. Reduces the functional ability of the liver.

4. Illustrative material:

5. Literature:

• Durmanov, K. D. General surgery: Textbook/ . - Kagandy: AKNUR, 2017. - 608 page . S
• Gostischev V.K. General surgery: textbook and CD.– 4th ed. – M., 2016. – 832 p.;

6. Control questions (feedback)

1. Who and in what year first discovered anesthesia?
2. What types of anesthesia do you know?
3. What advantages and disadvantages of the local type of anesthesia do you know?
4. What indications and contraindications to anesthesia do you know?
5. How and when is premedication performed?

Lecture No. 4

1.Subject: Bleeding and hemostasis

2. Purpose: To consolidate and expand students' knowledge on bleeding and hemostasis. To teach to determine indications and contraindications to various types of bleeding and hemostasis. To teach to recognize the degree of bleeding and to provide timely assistance to the patient with various complications.

3. Lecture theses:

Bleeding is the outpouring of blood from the bloodstream into the external environment or internal organs. Normally, a person has about 4-5 liters of blood, of which 60% circulates through the vessels, and 40% is in the blood depot (liver, spleen, etc.). The loss of 1/3 of blood is life-threatening, but patients can die with less blood loss if it expires quickly. Men suffer blood loss worse, women are more adapted to blood loss.

There are internal and external bleeding. Depending on the type of damaged blood vessels, bleeding can be

• arterial,
• venous,
• capillary,
• parenchymal,
• mixed

Arterial bleeding is characterized by the release of blood from the wound by a pulsating jet. With venous bleeding, the blood is darker and is abundantly released from the wound in a continuous stream without a tendency to stop independently. A crossed vein can be seen in the wound. Capillary bleeding is observed in skin and muscle injuries. Blood is released less intensively than when a large vein is wounded, it tends to stop independently, the amount of blood pouring out depends on the size of the wound.

For a reason:

1. Post–traumatic - as a result of injury or wounds, including surgery;
2. Arrosive – due to the corroding of the vessel wall by a pathological process: stomach ulcer, decaying tumor, purulent melting of tissues and vessel walls;
3. Diapedesis – bleeding without damaging the integrity of the vessel walls — in blood diseases (hemophilia), vitamin deficiency (scurvy), etc.

By the nature of communication with the external environment: there are external, internal and latent bleeding.

1. External – blood flows directly into the external environment, so it is easy to diagnose.
2. Internal – the bleeding blood has no communication with the external environment. Varieties: bleeding in the body cavity and in the tissue.

In the body cavity:

a) into the abdominal cavity – hemoperitoneum, most often with damage to parenchymal organs;
b) into the pleural cavity – hemothorax, more often with rib fractures or stab wounds;
c) into the joint cavity – hemarthrosis;
d) into the cavity of the cardiac sac – hemopericardium, the accumulation of a significant amount of blood in the pericardial cavity causes compression of the heart — tamponade of the heart.

In the body tissue:

a) hemorrhage – diffuse impregnation of tissues with blood;
b) hematoma – accumulation of blood in the tissues with the formation of a cavity;

What are the clinical manifestations of acute blood loss?

The victim with acute blood loss is pale, covered with cold sweat, usually sluggish, indifferent to the surroundings, speaks in a low voice, complains of dizziness and flashing "flies" or darkening before

the eyes when lifting the head, asks for a drink, notes dry mouth. The pulse is frequent, low filling, blood pressure is lowered, and with a rapid outpouring of a large amount of blood, a picture of hemorrhagic shock with persistent hypotension develops.

Arterial bleeding

What are the basic principles of stopping external arterial bleeding?

The main urgent measure, often saving the life of the victim, is a temporary stop of external bleeding. Arterial bleeding from the vessels of the upper and lower extremities, as well as from the stumps of the limbs during traumatic amputations, is stopped in two stages: first, the artery is pressed above the injury site to the bone protrusion to stop blood flow to the injury site, and then a standard or improvised tourniquet is applied.

A note is placed under the tourniquet indicating the time of applying the tourniquet. The time of applying the tourniquet must be indicated in the accompanying sheet. Stopping external bleeding is the first priority of first aid. Arterial bleeding is a particular danger. Arteries are blood vessels that carry blood from the heart to the organs.

The most dangerous injuries are large arteries – femoral, brachial, carotid; in these cases, death can occur in a matter of minutes.

For example, Bleeding from the femoral artery can lead to the death of the victim within 1-2 minutes. Therefore, it is necessary to know and be able to apply the techniques of finger pressing of the arteries and the technique of applying an arterial tourniquet.

The figure shows the scheme of pressing the main arteries to temporarily stop bleeding. Pressing the artery with a finger or palm is carried out before applying an arterial tourniquet. It is very important that the tourniquet is applied only to the shoulder or hip

Signs of arterial bleeding:

Blood spills out of the wound in a pulsating stream.

The color of the blood is bright scarlet.

The pulsation of the blood coincides with the pulse rate.

The rules for pressing the artery during bleeding are as follows:

Press the artery above the wound (closer to the heart)

Press the artery with enough force to stop the bleeding.

Do not release the pressure before applying the tourniquet

For superficial arteries, it is enough to press it with your finger, for large arteries (femoral), use your palm or fist.

Application of a tourniquet in case of injury of large arteries:

Wrap the limb area with a towel (gauze) to the place of bleeding (more centrally).

Lift the injured limb.

Slightly stretch the tourniquet and make 2-3 turns around the limb.

Secure the ends of the harness with a hook and chain.

Tie the ends of the homemade harness (thick rope, cloth, belt).

Leave a note indicating the time of applying the tourniquet.

The tourniquet can be on the limb for no more than 2 hours!

Apply a sterile bandage to the wound.

For example, the figure shows the application of a harness made of auxiliary material.

1. wrap the overlying part of the limb with a layer of gauze. 2. Using a thick cloth (kerchief) and a stick, apply an improvised twist. 3.

Rotating the stick

You can use a standard rubber harness. The technique of applying it is not difficult. For example, during amputation of the lower limb, without stopping squeezing the femoral vein with a fist, we hold a rubber turnstile under the thigh, make a loop, tighten it until the bleeding stops and tie a knot. If the tourniquet is applied correctly, the bleeding from the wound stops, the pulse on the radial artery or the back artery of the foot disappears, the distal parts of the limb turn pale. A note is placed under the tourniquet indicating the time of applying the tourniquet.

Артериальное кровотечение.

Давящая повязка для остановки кровотечения

Bleeding from small arteries on the forearm, on the hand, on the foot can be stopped by squeezing the vessels in the wound without applying a tourniquet. We put a clean napkin on the wound and, fully pressing it, hold it for 4-5 minutes. After that, we apply a pressure bandage. The tourniquet is used only in cases of extensive multiple wounds and fractures of the hand or foot. Wounds of the finger arteries are stopped by a tight pressure bandage. How is external arterial bleeding stopped in the area of the scalp, head, neck and trunk?

Arterial bleeding in the scalp (temporal artery), neck (carotid artery) and trunk (subclavian and iliac arteries) is stopped by tight tamponade of the wound. With tweezers or a clamp, the wound is tightly tamponed with napkins, on top of which you can put an unrolled bandage from a sterile package and wrap it as tightly as possible. If the artery is visible in the wound, then hemostatic clamps can be applied.

Venous bleeding

Signs of venous bleeding.If the blood is dark red and comes from the wound with a slow or weakly pulsating jet in time with breathing, your patient has venous bleeding. Bleeding from large veins (femoral, subclavian, jugular) is a danger to the patient's life as a result of rapid blood loss and the possibility of air embolism. Except in cases of traumatic damage to the veins, venous bleeding is possible with rupture of blood vessels in the nasal mucosa or varicose veins of the lower extremities. Nosebleeds caused by taking aspirin, increased blood pressure, may not stop for a long time and require hospitalization of the patient. First aid for any venous bleeding involves applying a pressure bandage, cold and elevated position.

Help with venous bleeding.Applying a pressure bandage and exposure to cold. A pressure bandage is applied below the wound, as venous blood rises from the peripheral vessels to the heart. Such a pressure bandage consists of several sterile gauze napkins or an unwound bandage, on which a tourniquet or elastic bandage is applied. The correctness of the application of a venous tourniquet is indicated by the stop of bleeding, but the preservation of pulsation below the place of pressing. On top of the bandage in the projection to the source of bleeding, it is good to put an ice bubble or a hot water bottle filled with cold water. Do not forget that after 30-40 minutes the cold must be removed for 10 minutes to restore the general blood flow in this area. If bleeding occurs from a limb, it should be given an elevated position. In case of nosebleed, the wing of the nose is pressed against its septum, it is good to pre-insert a ball of cotton wool soaked with 3% hydrogen peroxide into the nasal passage. Cold is applied to the area of the bridge of the nose or the back of the head for 3-4 minutes with breaks of 3-4 minutes until the bleeding stops. It is not necessary to throw back the head, because the blood will flow down the back wall of the pharynx.

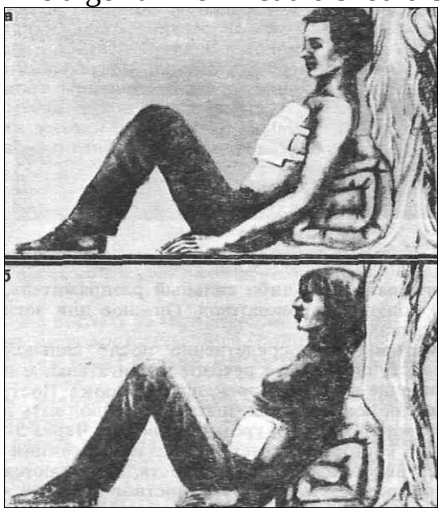
Signs of capillary bleeding .The slow outflow of blood from the entire surface of the wound is an indicator of capillary bleeding. For all the apparent harmlessness of such a wound, stopping such bleeding is very difficult if the patient suffers from poor blood clotting (hemophilia).

Help with capillary bleeding. Applying a pressure bandage. If there is a hemostatic sponge in your first aid kit, it should be applied to the wound, then make a pressure bandage. If there is no such sponge, then several layers of gauze napkins are applied to the wound, which are fixed with a pressure bandage. In any case, if the wound is on a limb, it should be given an elevated position and provide peace and cold (an ice bubble).

Parenchymal bleeding (internal), internal bleeding is the cause of emergency hospitalization. If internal bleeding is suspected, it is necessary to call an ambulance as soon as possible and provide first aid before her arrival. Possible internal bleeding can be determined by the following signs

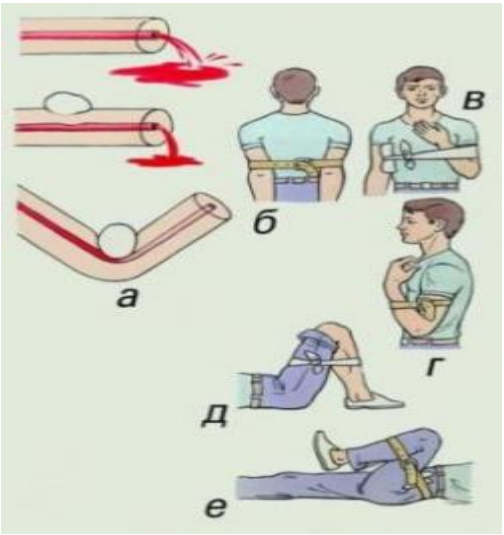
• pallor of the skin
• fatigue, drowsiness, weakness
• cough with blood clots or scarlet foamy sputum with pulmonary bleeding
• vomiting of "coffee grounds" or dark tar-like stools with gastric bleeding
• cold sweat
• decreased blood pressure and increased heart rate

The algorithm of first aid should be something like this



• the patient must observe complete rest.
• ensure fresh air access as much as possible

• if, with the help of localization of pain or other symptoms, it is possible to assume the place of bleeding, then it is necessary to attach an ice bubble to the affected area. At home, ice, frozen meat and other frozen foods put in a plastic bag and wrapped with a towel will do.
• if possible- administration of hemostatic drugs (calcium chloride, vikasol, epsilon-aminocapronic acid, hemoglobin)
The cause of pulmonary bleeding may be trauma or lung disease (tuberculosis, abscess, tumor lesion, etc.) and heart disease (mitral heart disease). It is characterized by coughing up foamed blood, blood-stained sputum, shortness of breath, shortness of breath. With severe bleeding, blood coughs up clots, there are signs of acute blood loss: pronounced pallor, dizziness, decreased blood pressure. The victim is given a semi-sitting position, a roller is placed under the back for support, the chest is released (the collar, the trouser belt are unbuttoned, a cold compress is applied to the chest, fresh air is provided). The patient is forbidden to speak, move, cough. They will urgently arrange for sending to a medical institution.
Intra-thoracic bleeding is a consequence of injury to the chest and damage to internal organs: the heart, large vessels, lungs. Bleeding into the pleural cavity can be massive, as a rule, it does not stop spontaneously. The increasing accumulation of blood in the pleural cavity limits the expansion of the lung, which contributes to the development of respiratory failure. Ruptures of the lung are accompanied by symptoms of pulmonary bleeding, the ingress of large amounts of blood into the respiratory tract leads to asphyxia, manifested by increased breathing, bluish color of the skin and mucous membranes. The rapid increase in threatening symptoms requires rapid transportation of the victim to a medical institution for surgical care. The patient is given a semi-sitting position with bent lower limbs, an ice bubble is applied to the chest, the shirt collar and trouser belt are unbuttoned, restraining breathing movements, and free fresh air is provided. Peptic ulcer, stomach cancer, other diseases or injuries are complicated by bleeding into the lumen of the gastrointestinal tract.
Symptoms of such bleeding are coffee grounds-colored vomiting, tar-like feces, common signs of acute anemia: pallor, tachycardia, decreased blood pressure, weakness, loss of consciousness. The patient is provided with complete rest and a horizontal position. An ice bubble is placed on the epigastric region, small pieces of ice can be swallowed. Transportation to the hospital is carried out on a stretcher in the prone position.
Intra—abdominal bleeding occurs as a result of abdominal trauma with damage to internal organs - this is the most common cause of intra-abdominal bleeding. In women, intra-abdominal bleeding often accompanies a disturbed tubal pregnancy. Intra-abdominal bleeding is characterized by large blood loss (up to 2-3 liters), the inability to stop spontaneously, the threat of peritonitis. They proceed heavily, with the phenomena of acute anemia, collapse. The only way to save the victim is an immediate operation aimed at finally stopping the bleeding. The patient is forbidden to drink and eat, transported in a lying position with a cold compress or an ice bubble on his stomach and accompanied by a person providing assistance. During the delivery of the victim with bleeding to a medical institution, the accompanying person monitors the patient's condition, the presence of consciousness, appearance, periodically registers the pulse, if possible, blood pressure. The life of the victim ultimately depends on the timeliness and correctness of the provision of pre-medical care for any type of bleeding. The outcome of bleeding is largely due to therapeutic measures carried out at the hospital stage, which are aimed at normalizing pathophysiological abnormalities caused by blood loss.
4. Illustrative material:



5. Literature:

• Durmanov, K. D. General surgery: Textbook/ . - Kagandy: AKNUR, 2017. - 608 page. S
• Gostischev V.K. General surgery: textbook and CD.– 4th ed. – M., 2016. – 832 p.;

6. Control questions (feedback)

1. The concept of bleeding
2. What is a hematoma and hemorrhage
3. Classification of bleeding
4. Common symptoms of bleeding
5. Local symptoms of bleeding
6. Hemothorax; concept, clinic, treatment
7. Hemoperitoneum: concept, clinic, treatment
8. Hemopericardium: Hemokrainium: concept, clinic, treatment
9. The dangers and outcomes of bleeding. Temporary stop of bleeding
10. Applying a pressure bandage. Finger pressure. Applying a tourniquet
11. The final stop of bleeding. Mechanical, thermal, biological, chemical methods of stopping bleeding.
12. Acute and chronic anemia
13. Compensatory reactions of the body during bleeding
14. Normal indicators of the general blood test

Lecture No. 5
1. Topic: The main issues of transfusiology.
2. Purpose: To consolidate and expand students' knowledge on general issues of transfusiology. To teach to determine blood groups and Rh factors. To teach to identify indications and contraindications to blood transfusion and blood substitutes. Introduce the medals of blood transfusion. To teach to master the skills of resuscitation complications encountered during blood transfusion.
3. Lecture theses: Blood transfusion is a powerful means of treating a variety of diseases, often an indispensable means of saving a patient's life. Attempts to transfuse blood for the treatment of patients were made in ancient times - Celsus, Homer, Pliny.
In the history of blood transfusion, 3pernodes can be put forward:
1 period - from ancient times to 1628,
2 period-from 1628 to 1901 - 1628 discovered by Harvey of blood circulation.
3 period-associated with the name of Landsteiner
Period 2- characterized by the completion of the technique of hemotransfusion: blood was transfused from vein to vein using silver tubes. Jean Denis in 1666 for the first time performed a blood transfusion to a person.
Blood loss is a threat to the patient's life, and his fate depends on the actions of the doctor. Bleeding is the outflow of blood from blood vessels when the permeability of their walls is damaged or impaired. The source of blood. Blood harvesting, its conservation, separation, into components and preparation of drugs is carried out at blood transfusion stations or special departments in hospitals.The main source of blood is donors. Be sure to conduct a study on the r-vasserman, on the carrier of the hepatitis virus, HIV.
Duck blood. (placental) - placental blood is collected immediately after the birth of the child and the umbilical cord ligation. 200 ml of blood is collected from one placenta.
Cadaverous blood. (Shamov V.N.) - from the corpses of practically healthy people who died suddenly (closed injuries and injuries, OSN, myocardial infarction, cerebral hemorrhage, electric shock). Blood sampling is carried out no later than 6 hours after death - from 1 to 4 liters . Do not use the blood of the deceased from infectious and oncological diseases, poisoning (except alcohol), blood diseases, tuberculosis, syphilis, AIDS, etc.
Autohemotransfusion - with traumatic injuries of internal organs, outpouring of blood into serous cavities. Such blood does not need to be determined by blood compatibility.

Autohemotransfusion- in the preoperative period, blood is taken, and during the operation it is poured into the same patient.
The mechanism of action of transfused blood.
Hemostatic (hemostatic) – fresh blood has a hemostatic property (hemophilia, cholemia, hemorrhagic diathesis). The action is due to the introduction of blood factors.
1. Detoxification effect, dilution of toxins circulating in the recipient's blood, increased oxygen transport and rapid elimination of toxic substances from the body.
2. Immunocorrilating property due to the introduction of Rg, interferon, neutrophils, lymphocytes.
3. The nutritional effect of blood is associated with the introduction of missing proteins and carbohydrates into the body.
4. Restoring the volume of circulating blood.
5. Stimulation of the body's defenses.
The main blood transfusion agents.
1. Canned blood is prepared using one of the preservative solutions: the role of the stabilizer is sodium citrate, which binds Ca ions and prevents clotting, the preservative is glucose, sucrose, etc..The most common preservative solutions are TSOLIPK No. 7b, TSOLIPK – 12, which, in addition to the preservative, contain levomycetin, glucose. Bottles with a capacity of 250-500 ml. or in plastic bags. Stored at t 4-6 ° C, shelf life – 21 days ratio of blood and preservatives 1: 4.
2. Fresh citrate blood – 6% solution of citrate Na 1:4 (1:10), used immediately.
3. Heparinized blood – (heparin + levomycitin). Shelf life is 1 day.
Blood components and preparations.
1. Erythrocyte mass. t – 4-6 S: Shelf life – 21 days.
2. Erythrocyte suspension. – a mixture of erythrocyte mass and TSOLIPK No. 8 1:1. stabilizer citrate Na – t – 4-6S, shelf life 8-15 days.
3. Washed and thawed red blood cells. – remove leukocytes, platelets, plasma proteins. Stored in electric coolers at t from – 70 to - 80 ° C. Stored for 8-10 years. They are transfused to patients in the presence of incompatibility with leukocyte antigens of the HLA system or sensitized to plasma proteins.
4. Platelet masses. Stored at t - 4ºC, shelf life 6-8 hours.
5. Leukocyte mass. Stored at t - 4ºC, shelf life is 24 hours.
6. Blood plasma, used immediately after receipt. Frozen plasma is stored at t _25 °C for 90 days. It is used to replace plasma loss in shock, deficiency of BCC, to stop bleeding, for complex parenteral nutrition.
7. Dry plasma. – shelf life of 5 years.
8. Albumin. – in the form of 5%, 10%, 20% solutions, bottles with a capacity of 50, 100, 250, 500 ml. Pronounced therapeutic effect – 20% - 100, 200ml; 10% - 200 and 300ml; 5% - 300 – 500ml or more, intravenously 40-60 drops in 1 min., with shock – jet.
9. Protein. – 4,3 - 4,8% isotonic solution of stable pasteurized proteins of human plasma. Composition – albumin - 75-80%, stable α and β – globulins (20-25%). The total amount of proteins is 40-50 g/l.
10. Cationic blood is called blood treated with a cation exchange resin that absorbs calcium ions and releases sodium ions into the blood. Decalcification of the blood prevents its clotting. The addition of electrolytes, glucose, sucrose allows you to store such blood for 20-25 days.
Methods of blood transfusion.
1. Transfusion of canned blood (indirect transfusion) is the main method.
2. Direct blood transfusion. This method of transfusion is rarely used. Indications – prolonged non-amenable to hemostatic therapy of bleeding in patients. Traumatic shock of the III degree in

combination with blood loss of more than 25-25% of the BCC. Violation of the blood coagulation system.
3. Exchange blood transfusion – hourly or complete removal of blood from the patient's bloodstream and simultaneous blood compensation. Indications – various poisoning, hemolytic insufficiency. Blood removal and infusion of donor blood are performed simultaneously at an average rate of 1000 ml in 15-20 minutes. It takes 10 -15 liters of blood to fully replace the blood.

4. Autohemotransfusion.

• Reinfusion – transfusion of blood poured into serous cavities, for example – rupture of the spleen, liver, mesentery vessels, closed damage to the chest organs – rupture of intra-thoracic vessels, lung. Contraindication – damage to hollow organs (large bronchi, esophagus, stomach, intestines, gallbladder, extrahepatic bile ducts, bladder, with the collapse of malignant neoplasms.
• Hemodilution (blood dilution), which is performed immediately before surgery.
• Autoplasmotransfusion.

Methods of blood transfusion.
1. Intravenous – venipuncture, less often venesection.
2. Intra-arterial: indications: a state of clinical death caused by acute blood loss, severe traumatic shock with a prolonged decrease in systolic blood pressure to 60 mmHg, ineffectiveness of intravenous blood transfusions.
3. Intra-aortic blood transfusion. In case of sudden clinical death, massive bleeding that occurs during thoracic surgery.
4. Intraosseous introduction. It is used extremely rarely, if it is impossible to inject blood in another way – extensive burns. The infusion is made into the crest of the iliac bone, into the sternum, calcaneus. The sternum is punctured under local infiltration anesthesia. The puncture is made strictly along the middle line – until the sensation of failure, the bone marrow is aspirated. A 3-5 ml 1-2% novocaine solution is injected into the bone marrow and a blood transfusion system is connected. 5-30 drops in 1 minute, it takes 2-3 hours to transfuse 250 ml of blood.

Indications for blood transfusion:
1. refund of BCC;
2. increased activity of the coagulation system;
3. acute blood loss;
4. shock;
5. severe anemia;
6. severe traumatic operations;
7. blood diseases;
8. purulent-inflammatory diseases;
9. severe intoxication.

Contraindications to blood transfusion:
1. decompensation of cardiac activity in heart defects;
2. septic endocarditis;
3. hypertension stage III;
4. violation of cerebral circulation;
5. thromboembolic disease;
6. pulmonary edema,
7. acute gromerulonephritis;
8. severe liver failure;
9. general amyloidosis;
10. allergic condition;
11. bronchial asthma.

Complications of transfusion.

Hemotransfusion reactions do not pose a danger to the patient's life: pyrogenic and allergic reactions. Pyrogenic reactions – distinguish between light, medium and heavy pyrogenic reactions. When pyrogenic reactions occur, the patient must be warmed up, put hot water bottles to his feet, give hot tea, give amidopyrine. In severe reactions – promedol, amidopyrine in injections, in / in 5-10 ml of 10% calcium chloride solution.

5. Literature:

• Durmanov, K. D. General surgery: Textbook/ . - Kagandy: AKNUR, 2017. - 608 page. S
• Gostischev V.K. General Surgery: textbook and CD.– 4th ed. – M., 2016. – 832 p.;

6. Control questions (feedback)

1. How is the determination of blood group and Rh factors carried out?
2. What methods of blood transfusion do you know? What types of blood substitutes do you know?
3. What indications and contraindications do you know for blood transfusion?
4. What complications of blood transfusion do you know?

Lecture No. 6

1.Subject: Closed and open mechanical damages.

2. Purpose: Development and strengthening of knowledge in general traumatology. To teach to distinguish between different injuries by clinical manifestations. Training in the correct diagnosis and trial diagnosis of various types of injuries. Training in first aid for various open and closed injuries and their complications, the use of modern complex methods of treatment. First aid training for various injuries, the application of a transport bandage, dressing, carrying. Familiarization with the peculiarities of caring for patients with various injuries.

3. Lecture theses:

Traumatology — the science of injuries Trauma is the impact on the body of an external factor that causes anatomical and functional disorders in tissues and organs, which are accompanied by a local and general reaction. Traumatism is a set of injuries affecting, under certain circumstances, the same groups of the population. Injuries are divided into industrial and non-industrial. This division has important social and legal significance. In case of an industrial injury, the company fully pays the costs of treating the victim, from the first day a disability certificate is issued to the victim with 100% payment, if necessary, a special pension and compensation. In Russia, a work injury is considered to be an injury received at the workplace during the performance of official duties, as well as on the way to work and home. In case of non-work injury, a disability certificate is issued from the sixth day and it is paid in accordance with the rules adopted in the industry: work experience, position, etc. Depending on the type of activity in which the injury was sustained, agricultural, industrial, transport, street, sports, school, military, household and intentional injuries are distinguished. In recent years, there has been a tendency for injuries to take second place in the overall mortality structure. Traumatism ranks 3rd among the causes of disability. In Russia, about half of the cases are domestic injuries, transport — about 40%, production — 5-6%.

Organization of trauma care.

The provision of trauma care consists of the following links: first aid, outpatient inpatient treatment, rehabilitation. The provision of first aid is carried out by a doctor, secondary medical personnel or other people in the order of self- and mutual assistance. In this case, the role of sanitary and educational work among the population is important. Everyone should have the skills to provide medical care, especially representatives of the police, fire service, military personnel, drivers of vehicles. When providing first aid at the scene, it is necessary to carry out transport immobilization, anesthesia, apply a bandage, stop bleeding and perform basic cardiopulmonary resuscitation. To provide qualified medical care, the victim is taken to a medical institution. When transporting the victim, it is necessary to properly lay him down and quickly deliver him to the emergency room or trauma department.

Outpatient treatment of a traumatological patient is performed in specialized trauma centers. X-ray examination, primary surgical treatment of wounds, the application of conventional and plaster dressings, as well as comprehensive treatment and follow-up of victims after discharge from the hospital are carried out here.

Inpatient treatment of traumatological patients is carried out in specialized departments of city and district hospitals, in clinics at the departments of Traumatology and Orthopedics of medical universities, in the Research Institute of Traumatology and Orthopedics. Rehabilitation of the victim plays an important role.

Rehabilitation is carried out in trauma hospitals, trauma centers, polyclinics at the place of residence of patients, special rehabilitation centers and sanatoriums, where the restoration of lost functions is carried out.

Classification of damages.

Damages are divided into single and multiple, closed and open. Injuries of the musculoskeletal system, combined with damage to internal organs, are called combined trauma. With a combination of various injuries (fractures, burns, concussion, etc.), they speak of a combined injury. Closed soft tissue injuries include: bruising, stretching, tissue rupture, concussion, prolonged compression syndrome. Dislocations and fractures of bones can be closed and open.

Bruise. A bruise is a closed mechanical damage to soft tissues and organs without a visible violation of their anatomical integrity. Bruises can be an independent injury or accompany other more severe injuries. The cause of the injury may be a fall from a small height or a slight impact. Bruises can be superficial and internal organs. The main clinical manifestations of bruising are pain, swelling of soft tissues, hematoma and dysfunction of the damaged organ. The pain occurs immediately at the moment of injury, then subsides a little. The swelling usually remains limited and painful. The size of the hematoma depends on the depth of the injury. Violation of the function of the damaged organ with a bruise usually does not occur immediately, but as the swelling and hematoma increase. The patient complains about the restriction of active movements associated with pain syndrome. Passive movements are usually preserved. When providing first aid, it is necessary to apply a pressure bandage and cold. Treatment is carried out on an outpatient basis. On the first day, to reduce the swelling of soft tissues and hematoma, cold is applied or the place of injury is treated with chloroethyl. An immobilization soft bandage is applied to the joint area. To reduce the hematoma, a pressure bandage can be applied. To reduce edema, an elevated position of the limb and troxevasin ointment are used. After 4 reduction of edema and hematoma (2-3 days), thermal procedures are applied: dry heat, ultraviolet radiation, UHF therapy.

Stretching. Stretching is called tissue damage with partial tears while maintaining anatomical integrity. Stretching usually occurs with sudden or sudden movement. Ligaments and tendons are more often damaged, but muscles, fascia, nerves can also be damaged. The clinical picture of stretching resembles a bruise, but all the symptoms are most pronounced. When providing first aid, it is necessary to apply an immobilization bandage and cold. Treatment is carried out on an outpatient basis: rest for the limb, cold with subsequent thermal procedures.

Gap

A rupture is a closed damage to tissues or an organ with a violation of their anatomical integrity. Strong stretching of the tissues can cause them to rupture. Ligaments, tendons, muscles, fascia, nerves are usually damaged. Ligament rupture. Ligament rupture can be either an independent injury, or in combination with a dislocation or fracture of bones. The ligaments of the ankle and knee joints are most often damaged. At the same time, there is severe pain, swelling of soft tissues, hem arthrosis and restriction of joint function. Hem arthrosis (the presence of blood in the joint) is determined by the symptom of balloting in the joint or by radiography (expansion of the joint gap). When providing first aid, it is necessary to apply a transport tire and cold, to carry out anesthesia. Treatment consists in applying a plaster splint for 2-3 weeks, followed by a gradual restoration of the load on the joint with the help of physical therapy, physiotherapy is also necessary. In case of hem arthrosis, joint punctures are performed. Sometimes, when ligaments are torn, surgical treatment is performed.

Muscle rupture. The rupture of the muscle can be with a rapid strong contraction or a strong blow to the contracted muscle. When damaged, severe pain appears, an increasing hematoma, swelling of soft tissues, loss of muscle function, a defect (gap) in the muscle is palpated. When providing medical care, it is necessary to apply a pressure bandage, cold, immobilization splint, anesthetize in one of the ways. Treatment is carried out in the traumatology department of the hospital. In case of incomplete rupture, observation, cold at the site of damage, the application of a plaster splint for 2 weeks. From 3-4 days physiotherapy procedures are shown, after removing the plaster splint — physical therapy. In case of a complete rupture of the muscles, surgical treatment (stitching of the muscles), the

application of a plaster cast for 2-3 weeks. After removing the plaster — physiotherapy and physical therapy.

Tendon rupture. The most common is the rupture of the tendons of the extensors of the fingers of the hand, the Achilles tendon, the long head of the biceps muscle of the shoulder. When a tendon is torn, pain appears, swelling of soft tissues, loss of function of the corresponding muscle (flexor or extensor) while maintaining passive movements. With first aid, immobilization with a tire is carried out, anesthesia is applied, cold is applied. Treatment of tendon ruptures is operative: suturing the tendon and applying a plaster cast for 2-3 weeks, followed by physiotherapy treatment.

Rupture of fascia. When the fascia ruptures, pain, swelling of soft tissues, palpable muscle hernia appear. 6 When providing first aid, it is necessary to apply a pressure bandage, cold, immobilization splint. Treatment of fascia rupture is only operative: suturing of the fascia, observance of rest and physiotherapy.




5. Literature:

• Durmanov, K. D. General surgery: Textbook/ . - Kagandy: AKNUR, 2017. – 608 page. S
• Gostischev V.K. General Surgery: textbook and CD.– 4th ed. – M., 2016. – 832 p.;

6. Control questions (feedback)

1. What types of injuries do you know?
2. what special signs of various injuries do you know?
3. What types of immobilization do you know?
4. What complex measures are advisable to perform with double injuries?
5. What is the danger of timely medical care for various injuries?

Lecture No. 7

1. Topic: Surgical operation. Pre and postoperative periods.

2. Purpose: To consolidate and expand knowledge on the classifications of operations, on general issues of surgery, preoperative and postoperative periods. To teach to recognize the clinical manifestations of the underlying disease and concomitant diseases. To teach to identify absolute relative indications and contraindications to operations. To teach to master the basic skills of first aid in acute surgical diseases, as well as the principles of modern complex treatment. The main and concomitant diseases, as well as postoperative complications. To familiarize with the peculiarities of patient care in postoperative periods.

Lecture theses:

The preoperative period is the period from the moment of admission of the patient to the surgical department of the hospital until the beginning of the operation, during which a set of measures aimed at

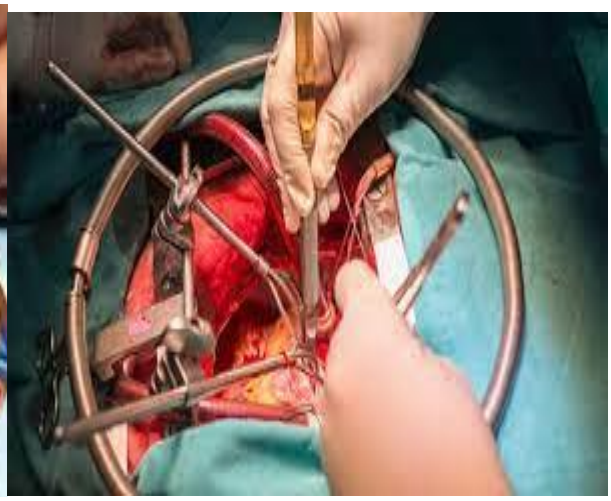
preparation of the patient for surgery.The preoperative period is conditionally divided into 2 stages: diagnostic and the stage of immediate preoperative preparation. All preoperative preparation measures are mainly aimed at minimizing the risk of surgery and preventing or reducing the severity of possible postoperative complications. It also provides for the training of a surgeon, an anesthesiologist and other participants in the operation, under! Fitting of the operating unit and surgical instruments.Depending on the complexity of the entire preoperative preparation, the features of the pathological process, the urgency of the operation, the duration of the PP is different.In the practice of modern surgery, there is a tendency to reduce the number of patients due to the danger of nosocomial infection, as a rule, to the widely used antibiotics and threats.infection of preoperative patients with it. In some cases, the general preparation for the operation is carried out in specialized departments of endocrinology, cardiology, therapeutic, the doctor justifies the operation by making a brief epicresis of the need for the operation determines its nature and type of anesthesia.

And makes the necessary preoperative appointments. The patient is given a receipt of consent to the operation, a receipt of consent to the operation.

General measures for the preparation of coperation patients. Preparation of the nervous system. Almost every patient is in a state of nervous tension before surgery. Especially the elderly have a fear of pain, about the nature of the disease can lead to overstrain of the nervous system, in connection with which they have a cold * sweat. dry mouth, hyperadrenalinemia, etc. In p. p. a thorough prophylaxis of these phenomena is carried out, which simultaneously serves as a preventive surgical shock and a number of other possible complications during the operation.An important role is played by the well-thought-out organization of work in the surgical department, which excludes contacts of patients awaiting surgery with large, newly undergone ce, the sight of which moans, tear-soaked bandages can make a heavy impression.The protective value for the nervous system is pre-anesthesia pre-medicine, prescribed by an anesthesiologist. As a result, her nervous tension sharply decreases immediately before the operation, the patient sleeps at night, in a drowsy state.Preparation of the cardiovascular system and normalization of blood composition.With normal activity of the cardiovascular system, small and medium-severity operations are performed without special training of the patient. With a slight weakening of the functioning of the cardiovascular system without the phenomena of organic changes, it is usually sufficient to prescribe cordiamine or one of the cardiac glycosides inside for several days and intravenously but 20-40 ml of 40% glucose solution with the addition of 3 ml of 5% ascorbic acid solution, preparation for large operations is expressed in a longer duration of these measures. In case of organic lesions of the heart and blood vessels, appropriate special agents are added-hypotensive, vasodilating, antispasmodic. Given that large operations are usually associated with significant blood loss, a single or repeated blood transfusion of 200-250 ml is performed before them.Planned operations are not prescribed during menstruation,

because during these periods there is increased bleeding and a decrease in the body's neurobiological reactivity. For the prevention of thrombosis and embolism, especially in patients with varicose veins, phlebitis or thrombophlebitis and cleaning, as well as in usually predisposed.
The main task of intensive therapy in the preoperative period is to achieve the fullest possible compensation for impaired vital functions and body systems.
Preoperative preparation includes:
psychological preparation;
preparation of vital organs (CCC, DS, MVS, etc.), correction of violations of homeostasis systems;
specific preparation for surgery (bowel cleansing, etc.);
Direct training:
- preliminary preparation of the operating field,
- empty stomach,
- empty bladder,
- premedication.
Psychological preparation is necessary, aimed at calming the patient, instilling in him confidence in a favorable outcome of the operation. The patient needs to explain the inevitability of the operation and the need to perform it (with planned operations, sedatives are prescribed on the eve). 30 minutes before the operation, the patient is given premedication, which includes narcotic drugs.The preparation of vital organs and systems is important.It is necessary to achieve compensation for impaired vital functions and body systems. It is necessary to compensate not only for violations Functional state of organ systems associated with the main surgical disease, but also various concomitant diseases (respiratory, circulatory, liver, kidneys).The task of achieving the fullest possible compensation of the function is preserved even in conditions of time deficit accompanying urgent (emergency) surgery. At the same time, all violations should be corrected simultaneously. Preoperative preparation should be adequate, intensive and as short as possible. In patients with hypovolemia, the signs of which are deafness of heart tones, collapsed veins, low blood pressure and blood pressure, etc., violations of the water-electrolyte balance, acid-base states, which are detected by biochemical blood analysis, immediately begin infusion therapy, including transfusion of high- and low-molecular dextrants, water-electrolyte solutions, glucose solutions with insulin, alkalizing solutions. In case of life-threatening blood loss, erythrocyte suspension, plasma, whole blood are injected. Simultaneously with infusion therapy, cardiovascular agents are used. The fight against respiratory insufficiency is carried out - oxygen therapy, normalization of blood circulation, the use of bronchodilators, in extreme cases, artificial ventilation of the lungs is carried out.During preoperative preparation, a number of procedures are also carried out aimed at preparing the patient's organs. Before anesthesia, evacuation of the pancreatic contents is mandatory – gastric lavage is performed with a probe. Emptying of the bladder is also necessary. If the patient cannot urinate on his own, the bladder is catheterized with rubber or metal catheters. The hair covering in the area of the surgical field is shaved off.In elective surgery, it is possible to thoroughly examine the patient and there is time for special preparation of the patient for surgery.Correct disorders of the functions of the respiratory system, blood circulation, gastrointestinal tract, liver and kidneys. Infusion therapy is carried out to normalize O.C.K., protein and water-electrolyte balance, acid-base balance. If necessary, parenteral nutrition is carried out.On the eve of the operation, the patient is given a cleansing enema. The patient takes a hygienic bath or shower, then his underwear and bed linen are changed. The patient does not have dinner, does not eat or drink in the morning before the operation.If the patient's evacuation from the stomach is disrupted (with ulcerative stenosis of the abdominal department or tumors), the stomach is washed in the evening and in the morning through the probe. In the morning, the patient's hair is shaved off in the area of the surgical field.In the process of preparing the patient for elective surgery, prevention of endogenous infection is carried

out – foci of chronic infection are detected and sanitized (chronic tonsillitis, caries, pharyngitis, pustular diseases of the skin and soft tissues and other chronic inflammatory diseases).Scheduled operations should not be prescribed during menstruation, since these days there is increased bleeding and a decrease in the reactivity of the body.Sedatives are prescribed the day before. Premedication is performed 30 minutes before the operation, which includes promedol (narcotic analgesic); atropine (M- cholinolitine) to reduce salivation, which is mixed during anesthesia; antihistamines (diphenhydramine, pipolfen). After that, the patient is taken to the operating room on a gurney, and placed in the position necessary to perform the operation.

5. Literature:

• Durmanov, K. D. General surgery: Textbook/ . - Kagandy: AKNUR, 2017. - 608 page. S
• Gostischev V.K. General Surgery: textbook and CD.– 4th ed. – M., 2016. – 832 p.;

6. Control questions (feedback)

1. The concept of surgery: radical and palliative.
2. Types of operation (single- and multi-stage, simultaneous. diagnostic, typical and atypical, closed and open, microsurgical, endoscopic).
3. Preoperative period (main tasks, preparation of the patient for surgery).
4. Determination of the urgency of the operation
5. Assessment of surgical and anesthetic risk
6. Additional research
7. Psychological and preoperative preparation of patients
8. Special preoperative preparation

Lecture No. 8

1. Topic: Acute local surgical infection.

2. Purpose: Learn to recognize the clinical picture of acute local surgical infections. Training in determining absolute relative indicators and contraindications to operations in acute local surgical infections. To teach the basic skills of first aid in acute local surgical infection, as well as the principles of modern comprehensive treatment..

Surgical infection

5. Literature:

• Durmanov, K. D. General surgery: Textbook/ . - Kagandy: AKNUR, 2017. - 608 page . S
• Gostischev V.K. General Surgery: textbook and CD.– 4th ed. – M., 2016. – 832 p.;

6. Control questions (feedback)

1. Classification of surgical infection
2. Etiology, pathogenesis of purulent infection.

3. Local reaction of purulent infection
4. General reaction of purulent infection
5. General principles of treatment of purulent infection (conservative, operative)
6. Antibacterial therapy, tests.

Lecture No. 9

1. Topic: Chronic specific surgical infection.

2. Purpose:To consolidate and expand knowledge on the classification of chronic specific surgical infection, general issues of surgical infection. Learn to recognize the clinical picture of the underlying disease and concomitant diseases. Specific surgical infection training in determining absolute relative indicators and contraindications. Training in mastering the basic skills of first aid in chronic specific surgical infection, as well as the principles of modern complex treatment.

Lecture theses:

Surgical infection is an inflammatory disease of different localization and nature caused by a purulent flora. By the end of the first day of life, the child is already inhabited by 12 species of bacteria. On the third or seventh day, they penetrate into his intestines. As a child grows up, its microbial population grows rapidly. In the body of an adult, it is already represented by hundreds, the number of which reaches astronomical figures. It is estimated that the total weight of bacteria living in the human body is about two kilograms. There are about 200 species of microorganisms living in humans, and 80 of them are in the mouth. In the human intestine, there are normally from 300 to 1000 species of bacteria with a total mass of up to 1 kg, and the number of their cells exceeds the number of cells of the human body by an order of magnitude. They play an important role in the digestion of carbohydrates, synthesize vitamins, and displace pathogenic bacteria. But they are constantly changing, becoming more pathogenic. How many of them get to us together with food, breathing, through dirty hands, during nursing and medical manipulations. Surgical infection is defined as the process of introduction and development of microbes into unusual habitats for them (wounds, internal organs and cavities, fiber). Patients with purulent-inflammatory diseases make up a third of all surgical patients. Classification

1. By clinical course:

1.1. Acute surgical infection: purulent; putrefactive (anaerobes that do not form spores); anaerobic; specific (tetanus, anthrax, etc.).

1.2. Chronic surgical infection: nonspecific (pyogenic); specific (tuberculosis, syphilis, actinomycosis, etc.).

2. For each of the listed forms, there may be the following forms:

2.1. Local surgical infection (with a predominance of local manifestations);

2.2. General surgical infection (with a predominance of common phenomena with septic course).

Etiology Purulent-inflammatory diseases have an infectious nature (monoinfection or mixed, penetrating into the body exo- or endogenous).

Osteoarticular tuberculosis is one of the most common localizations of extrapulmonary tuberculosis: its frequency is more than 20% in relation to other manifestations of extrapulmonary tuberculosis [Vasiliev A.V., Petrov I. N., 1987]

In recent years, the evolutionary, pathogenetic classification of osteoarticular tuberculosis, proposed by P. G. Kornev, which is based on the regularities of the development of the pathological process, has been most widely used in anti-tuberculosis institutions.

The first phase — prespondylitic, prearthritic — is characterized by the presence of primary tuberculousostitis (its formation and development).

The second phase — spondylitic, arthritic — pathogenetically corresponds to the occurrence and development of progressive specific spondylitis and arthritis. In this phase, there are two stages: the beginning and the height.
The third phase — postspondylitic, postarthritic — is characterized by temporary or stable elimination of the tuberculosis process with preservation or enhancement of anatomical and functional disorders that have arisen during the disease.
In each of these phases of the disease, the degree of activity of specific inflammation may be different. From this point of view, the tuberculosis process is characterized as active, torpid-current, lost activity and cured.
In addition, the classification of osteoarticular tuberculosis includes tuberculosis-allergic synovitis and arthritis, which are the result of allergic lesions of the synovial membrane of the joints.
Pathological anatomy and pathological physiology
A specific process occurs in the red myeloid bone marrow, where epithelioid tubercles are formed, which, merging with each other, form productive conglomerate tubercles that undergo curd necrosis. Diffuse proliferation of tuberculous granuloma causes resorption of bone matter, accompanied by the formation of sequesters, leaky abscesses and fistulas [Graziansky V. P., Khokhlov D. K., 1966, etc.].
With tuberculosis of the spine, primary ostitis occurs in the thickness of the spongy tissue of the vertebral bodies, much less often there is a lesion of the arches and processes of the vertebrae. The development of tuberculous spondylitis begins from the moment the primary tuberculous focus leaves the vertebral body to neighboring soft tissues.
The spread of a specific process to healthy vertebrae occurs in two ways: intra-disk and non-disk. In the intradiscal pathway, the progression of the inflammatory process leads to dystrophic changes in the intervertebral disc, then its partial or complete destruction occurs and the vertebra is involved in a specific process. Contact destruction is formed between the affected vertebrae.
In the non-disk pathway of development, primary ostitis destroys the cortical layer of the vertical surfaces of the vertebral bodies with the formation of prevertebral, paravertebral or epidural leaky abscesses. The transition of the tuberculous process to neighboring vertebrae in these cases occurs due to their contact infection with tuberculous granulation tissue.
The destruction of the vertebral bodies and intervertebral discs causes spinal deformity, mainly kyphotic. The degree of its severity depends on the size of the destruction. The development of the tuberculosis process is accompanied by the formation of leaky abscesses, which have a typical localization.
The spread of the tuberculosis process to the posterior parts of the vertebral bodies leads to the development of spinal disorders, which are observed mainly in tuberculosis of the thoracic spine. Due to the destruction of the skin by granulation tissue, external fistula openings are formed.
In tuberculous arthritis, the spread of specific inflammation from the primary focus to the joint most often occurs by gradual germination of granulation tissue into the synovial membrane of the joint. Much less often, mainly with subchondralostitis, tuberculous arthritis can occur due to the destruction of the integumentary articular cartilage by a specific process and the breakthrough of tuberculous granulation tissue into the joint cavity.
Subsequent changes consist in the fact that the tuberculous process passes from the synovial membrane to the articular ends of the bones, causing their destruction, which is focal in nature. The changes described above lead to a violation of anatomical relationships in the joint and loss of its function.
The dynamics of radiological changes in tuberculosis of the spine
in the prearthritic phase in the vertebral body is determined by a focus of destruction with fuzzy contours containing sequestration. However, these changes during this period of the disease are not detected in all patients.

In the initial period of the spondylitic phase, the focus of destruction is clearly expressed, a decrease in the height of the intervertebral disc and contact destruction in neighboring vertebrae are observed. In some patients, the shadows of leaky abscesses are determined at the level of the affected vertebrae. In children, the increase in destruction is accompanied by an increase in osteoporosis, whereas in adults, the density and structure of bone tissue may be little changed.

In the most active period of the disease, the destruction of the bodies of 2-3 vertebrae with the destruction of the intervertebral disc is visible. The contours of the vertebrae are fuzzy, blurred, there is a pronounced deformity of the spine, mainly kyphotic.

In most patients, shadows of leaky abscesses are found, which in the thoracic spine are determined by the presence of compaction of pre- and para-vertebral soft tissues having a fusiform, triangular or spherical shape. More often these changes are symmetrical.

In the lumbar spine, the presence of a leaky abscess is indicated by a change in the contours of the ilio-lumbar muscle, their expansion or disappearance on one side.

In the postspondylitic phase, the contours of the affected vertebrae are clear, sclerosed; partial filling of defects in the vertebrae with newly formed bone trabeculae, spinal deformity, bone-cartilaginous growths, dystrophic and sclerotic changes in bone tissue are determined.

Dynamics of radiological changes in tuberculosis of joints

in the prearthritic phase, near the joint, more often in the metaphysical part of the bone, a site of altered sparse bone structure is detected, and subsequently a focus of destruction containing inclusions of different densities (sequester). These changes are observed against the background of unchanged bone tissue or osteoporosis.

At the stage of the onset of the arthritic phase, the bone focus increases in size, the characteristic symptoms are osteoporosis and a change in the size of the articular gap: at first its expansion, and then narrowing. The expansion of the shadows of the joint capsule is revealed. In children, there may be an increase in the epiphyses.

Osteoarticular tuberculosis eventually leads to severe bone deformities, functional disorders in the limbs and spine, bone destruction, and can also be the cause of amyloidosis of organs.
The disease proceeds in three phases.
• In the initial latent phase, the first signs are formed in the bone — the initial tuberculous focus or ostitis.
o Areas with signs of osteoporosis appear on the bone.
o There may be no pain in the bones.
o The patient feels lethargy, apathy, the general temperature may be slightly elevated (subrephilic), leukocytosis and increased ROE are possible in the blood.
o The local temperature of the skin surfaces in the area of tuberculosis lesion may be normal.
• In the second phase (acute), arthritis of a toxic-allergic nature begins with symptoms of villous synovitis, vasculitis, lymph node lesions.
o The patient begins to feel pain at first incomprehensible, but then pronounced localization.
o Osteoporotic bone manifestations are increasing.
o There is an effusion (accumulation of fluid), swelling of the joint, a decrease in motor functions. Thus, with tuberculosis of the TBS, femoral and tibial bones, lameness, muscle weakness and atrophy develop.
o There is a narrowing of the articular gap or intervertebral canal.
o Another characteristic feature is the thickening of the skin fold over the pathological area (Alexandrov's symptom).
o During this period, temperature rises, both general and local, are possible.
• In the third (post-inflammatory) phase, degenerative and deforming bone processes occur. At this stage, the disease seems to recede, and at the same time the most destructive stage begins.
o Effusions and edema stop, abscesses noticeably decrease.
o The contours of the joint become smoother, there is no temperature.
o Contractures begin in the joints, ankylosis (mainly fibrous), limbs are fixed in the wrong vicious position.

o Bones change their shape (large tubular bones acquire a cylindrical shape, the bones of the hand or foot are fusiform), some bones are destroyed, others are shortened.

This disease gives a more pronounced clinical picture in children than in adults. And the most terrible thing is that the child is already born with a disease that turns him into a disabled person. Due to the fact that ankylosis and muscular atrophy occur in TBS, the leg shortens, its growth stops, as a result of which it remains infantile, that is, underdeveloped, in a growing child as a whole. It looks like a shrunken limb.

Therefore, it is extremely important to determine the first symptoms of tuberculosis of joints and bones in a small, newly born person.

Tuberculosis of the spine has some distinctive features:

• The mobility of the vertebrae is preserved with it.

• Obvious distinguishing features are the strongest kyphosis (stooping), deformities of the spine and chest, which is also more pronounced in childhood.

• With tuberculous deformation of the vertebral body, compression of the spinal cord and neurological disorders are possible.

The disease does not pose a direct threat to life, so the prognosis is generally favorable. But without timely diagnosis and early treatment, the patient, especially in childhood, may become disabled. Bone tuberculosis is no more contagious than AIDS. It is the pulmonary form of tuberculosis that is most dangerous, since it is transmitted as a common acute respiratory viral infection or influenza — by airborne droplets (that is why almost all of us today are passive carriers of tuberculosis). It is possible to get infected with articular-bone tuberculosis from person to person only with blood transfusion or if the infection from the purulent focus of the patient gets into the wound on the body of a healthy person, and from there into the blood, that is, by contact. In the latent initial stage, contact infection is hardly possible. It is easier to get infected first with the pulmonary form of tuberculosis, and already from the lungs microbes can get into the bones through the blood. A certain danger arises with exacerbations, in the presence of open purulent abscesses and fistulas — such a patient, as well as his relatives, must observe strict hygiene: change bed linen, clothes, bandages more often. But during such periods, patients are usually treated in hospitals, in any case, they should be there.

4. Illustrative material:




5. Literature:
• Durmanov, K. D. General surgery: Textbook/ . - Kagandy: AKNUR, 2017. - 608 pages. S
• Gostischev V.K. General Surgery: textbook and CD.– 4th ed. – M., 2016. – 832 p.;
6. Control questions (feedback)
1. Concept, etiology, pathogenesis.
2. 3 phases according to P.G.Kornev. Tuberculosis clinic.
3. Diagnosis of osteoarticular tuberculosis
4. Tuberculous spondylitis
5. Tuberculouscoxitis, drives joints.
6. Dif. diagnostic signs of chronic hematogenous osteomyelitis and bone tuberculosis
7. Treatment of tuberculosis of bones and joints
8. Tuberculous lymphadenitis
9. Prevention of tuberculosis

Lecture No. 10
Topic: Parasitic diseases.The main issues of oncology. Tumors.
2. Purpose of classification of parasitic diseases, general issues of parasitic diseases, consolidation and expansion of knowledge. Learn to recognize the clinical picture of the underlying disease and concomitant diseases. To teach to determine absolute relative indicators and contraindications to tumor diseases. Training in mastering the basic skills of first aid in the main problems of oncology, as well as the principles of modern comprehensive treatment.
Lecture theses:
Echinococcosis is a dangerous parasitic disease that leads to disability and death of people.Young and able-bodied persons account for 90% of cases.Currently, echinococcosis is most common in Australia, New Zealand, South America, North Africa, Mongolia, and the Mediterranean countries. In the CIS - in the republics of Central Asia, and Transcaucasia, the Volga region, the Crimea and the

Stavropol Territory.Echinococcosis is 2 times more common in men than in women. Echinococcal disease often affects the liver (50-85%), and purulent and other complications from echinococcal cysts in the liver are observed in 12-50% of patients. In 12.4% there is a pulmonary form.

Etiology, epidemiology and pathogenesis

The life cycle of echinococcus occurs with the change of two hosts. The final owners are: domestic dog, wolf, jackal, fox, lynx, etc. Intermediate hosts in which the larval (vesicular) stage of echinococcus develops are: sheep, cattle, camel, horse, pig, monkey, some rodents, as well as humans.The sexually mature form of echinococcus is a small cestode (2.7-5.4 mm long), consists of 3-4 segments, a scolex and a neck. The Scolex is armed with a double crown of hooks in the amount of 36-40 and has 4 muscular suckers. The eggs are rounded or oval, have a delicate radial striated shell. Each egg contains a six-pointed embryo (oncosphere).With the death of the echinococcal bladder, the liquid becomes cloudy, is absorbed, and part of it turns into a putty-like mass, the germinative layer is destroyed, the shells are impregnated with lime salts. A small cyst can completely disappear, leaving only a scar in its place.The death of the parasite can be caused by the lack of proper conditions for its development, suppuration or hemorrhage in the cyst, trauma, physiological aging of the cyst.

The spread of the parasite in the host body occurs in the following way:

- hematogenically;
- by serous membranes;
- through the mucous membrane;
- along the lymphatic pathways.

The clinical course of echinococcosiscan be divided into stages with some conditionality.

The most convenient is the classification of A.V. Melnikov:

Stage 1 is asymptomatic, from the moment of penetration of the oncosphere into the body until the first signs of the disease appear. It can last for several years. The condition of patients is little disturbed.

Stage 2 - the stage of manifestation of symptoms characteristic of uncomplicated cysts. The clinical picture in this case is variegated, depending on the localization of the parasite and the rate of cyst development. With rapid growth, it causes serious violations of the function of the affected organ, with slow development, it does not cause noticeable violations.

Stage 3 is the stage of pronounced pathological changes and complications. During this period, complications are noted in the parasitic cyst itself (perforation, suppuration, calcification). However, the death of the parasite does not mean that the patient has recovered. On the contrary, this stage is dangerous, as it conceals the possibility of severe complications that threaten the patient's life.

Most often, the diagnosis of echinococcosisis established in the second stage of the disease, when the symptoms are well expressed. According to the time of occurrence, they are divided into early (nonspecific) and late (specific).The most frequent and early signs of the disease in all localities of the parasite are pains that occur long before the development of other signs and are of a stabbing, pinching or aching nature. Another sign of echinococcosisshould be considered the appearance of a slow-growing, often painless tumor. It can be dense or elastic, embedded or movable. With a superficial location, an important sign of a cyst is a symptom of fluctuation.As the cyst increases, it is possible to detect deformation of individual parts of the body: the subcostal arch with liver echinococcosis, chest - with lung echinococcosis, etc.Some authors attach diagnostic importance to urticaria, which is an expression of anaphylaxis. It is called "local" urticaria.The temperature depends on the intoxication caused by the parasite and on the inflammatory process. With perforation of the cyst or its suppuration, t reaches 39 S, sometimes accompanied by chills.Toxic substances secreted by helminths have neurotoxic and hematotoxic properties. They can cause headaches, loss of appetite, weakness, anemia, epileptic seizures, paresis, choking attacks.

Echinococcosis of the liver is characterized by: dull pains in the right hypochondrium and in the lower chest, with irradiation into the right shoulder blade, back and lower back; weakness, malaise, heartburn, belching, nausea, weight loss, fever, increased liver size; jaundice of the skin and sclera. When the diaphragm is pushed back by an echinococcal cyst, shortness of breath and palpitations develop.

Palpation determines the enlargement of the liver, the presence of a tumor-like formation of a rounded or oval shape of elastic or dense consistency - with a superficial location of the cyst. When the cyst is located on the diaphragmatic surface, a positive frenicus symptom is sometimes determined.

DIAGNOSTICS

 Laboratory tests.

In the general blood test, eosinophilia is noted. Eosinophilia is a sign of only a living parasite, which is confirmed by the Anfilogov test - after palpation of only a living cyst, an increase in the number of eosinophils occurs. The increase in ESR is constant.With complicated renal echinococcosis, changes are observed in the urine: microhematuria, pyuria, pathological flora, the appearance of echinococcal blisters, fragments of the parasite shells.

 Immunological studies.

Used in / to Katsoni's allergic reaction.The latex agglutination reaction is effective and harmless, which is used for the purpose of early detection of asymptomatic stages of echinococcosis, however, anaphylactic shock may develop with repeated administration of the allergen during the reaction. The reliability of immunological diagnostics increases with the simultaneous use of 3-4 serological reactions: latex agglutination, indirect hemagglutination and double diffusion in gel.

- X-ray examination.

Multi-axis radioscopy, radiography in direct and lateral projections, tomography, and in some cases bronchography are used.A characteristic feature of an echinococcal cyst in the lung is a change in the shape of its shadow when breathing (Nemenov's symptom). Sometimes cysts squeeze the adjacent bronchi and vessels, causing atelectasis. Small cysts are detected by tomography.Theinformativeness of the liver R-examination depends on the position and condition of the cyst. When localized in the anterior-upper and diaphragmatic parts of the liver, there is a high standing of the right dome of the diaphragm, its deformation, and limited mobility.

- Computed tomography.

With echonococcosis of the liver, the following can be determined:
an increase in the size of the organ,
deformation of the contour,
displacement of anatomical structures.

Basic principles of echinococcectomy:

1. Prevention of scattering of scolexes during the operation.
2. Echinococcectomy begins with a puncture of the cyst with a large-diameter needle with lateral holes, a tube connected with suction is put on its pavilion. After removal of the liquid, a part of the fibrous capsule is dissected and cut off, after which the cuticular and germinative membranes are removed.
3. The operation is completed by the elimination of the residual cavity.

Echinococcal cysts developing in the spleen are usually removed together with the organ. In the kidney, the cyst grows peripherally and after its elimination, only the fibrous capsule is sheathed. In the abdominal cavity, in the muscles, an ideal echinococcectomyis more often performed. In case of pulmonary localization, the cavity is eliminated by capitulation.

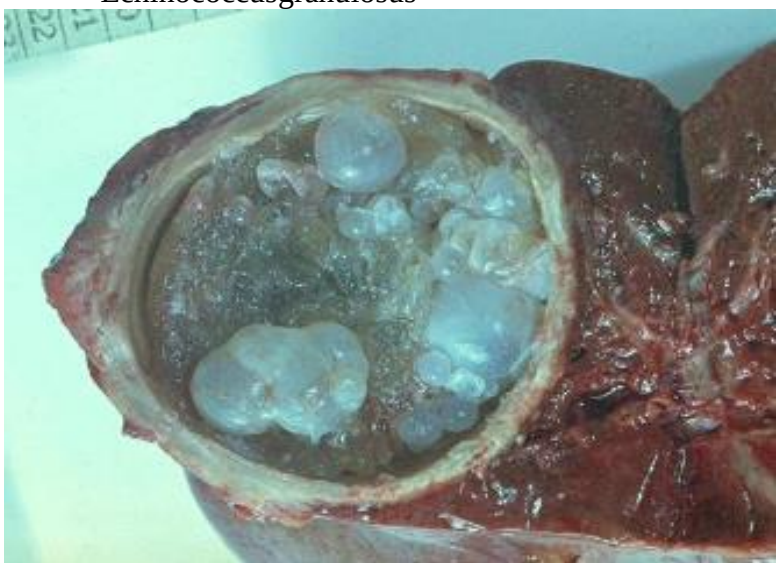
With hydatidechinococcosis, the operation of choice is the opening of the cyst with the evacuation of its contents, with alveococcosis, resection of the liver is resorted to, resection - exfoliation or exfoliation at the border with healthy tissues.The high incidence of serious complications of the hydatidous form of echinococcosis dictates the need for surgical treatment regardless of the size of the cyst.An ideal echinococcectomy, in which the entire cyst with its chitinous and fibrous membranes is removed without opening the lumen, is rarely used - with small cyst sizes, its marginal location. With large cysts located in the thickness of the liver tissue, this method is fraught with damage to large vessels and bile ducts.

Removal of the cyst with its hermetic and chitinous membranes is more often used after preliminary puncture of the cyst cavity, with suction of its contents, this avoids its rupture and dissemination of the parasite. After removal of the cyst, the fibrous membrane is treated from the inside with a 1% formalin solution and sutured with separate sutures from the inside.

OPISTHORCHIASIS

Helminthiasis of the liver, gallbladder and pancreas, the causative agent of which are two types of flukes (flukes) – Opisthorchisfelineus and Opisthorchisviverini.

- Hydatid liver echinococcus is caused by parasitization of the larval stage of the tapeworm Echinococcusgranulosus



- Alveolar echinococcus (alveococcosis) of the liver is a severe, long-term disease caused by the tapeworm Echinococcusmultilocularis