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FEDERAL STATE BUDGET EDUCATIONAL INSTITUTION OF HIGHER EDUCATION "NORTH OSSETIAN STATE MEDICAL ACADEMY" MINISTRY OF HEALTH OF THE RUSSIAN FEDERATION

Department of Human Anatomy with Topographic Anatomy and Operative Surgery

# SITUATIONAL TASKS ON DISCIPLINE "TOPOGRAPHICAL ANATOMY AND OPERATIVE SURGERY»

for 3rd year students in the specialty
31.05.01 General medicine (specialist)

Situational challenges
in the discipline
"TOPOGRAPHICAL ANATOMY AND OPERATIVE SURGERY»
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## Lesson 1.
## General surgical technique. Surgical instruments. Connection and separation of tissues.

1. During surgery, the surgeon uses the apodictilous method of surgery. Explain the essence of this method. What are the advantages and disadvantages of the apodictilous method?
2. The basis of the operations for malignant tumors based on aplasticheskoj principle. Explain the essence of this principle. What methods of separation of tissues in a large git mi satisfy the requirements of ablastichnost operations?
3. The surgeon performs the operation under local anesthesia by "tight creeping infiltration". Why at the end of the operation there is a need to control the quality of hemostasis?
4. When performing surgery should be guided by the General rules of use of surgical instruments. Give the name.
5. The surgeon cuts the skin with a scalpel with a subcutaneous base. Why does he only use a scalpel and only an abdominal one? Why is the skin with a subcutaneous base cut in one motion in the direction of the skin tension lines?
6. After cutting the skin with the subcutaneous base, the surgeon and the assistant began hemostasis. Explain how to put the hemostatic clamp on the bleeding vessel?? Какова последовательность перевязки кровоточащего сосуда??
7. The surgeon and the assistant began to dissect their own fascia (aponeurosis). What is the sequence of dissection of this layer?
8. To perform the surgical sutures used cutting (triangular) and pointed (circular) needle. Explain the difference in the formation of the ligature canal with these surgical needles. Specify the purpose of the dihedral landing pad at the cutting needle.
9. The surgeon sutures the operating wound. What principles should form the basis of this stage of the operation?
10. When performing skin nodular sutures should follow the rules to ensure better healing and cosmetic results. What are these rules.
11. The surgeon stitched the wound with skin nodal sutures. In what order do they perform, why? Where are the nodes, for what?
12. On the 7th day after surgery, the surgeon the noda removes l skin sutures. What is the sequence of actions of the surgeon? What complications can occur if you do not comply with the technique of removing the skin seam?

## Lesson 2.

## Topographical anatomy of shoulder girdle: the scapula, the deltoid, the subclavian and axillary regions; shoulder joint; shoulder.

1. In traumatologic point asked M., age 17: at the rink and he fell on the allotted hand. Diagnosis:"fracture of the collarbone." Explain why the examination of the patient is undesirable definition of pathological mobility and crepitations?
2. The victim M., 15 years old, oblique fracture of the clavicle, the line of which passes through the middle of the bone. What components of the neurovascular bundle can be damaged by displacement of the lateral fragment of the clavicle?
3. The patient M., 48 years old, is scheduled for surgery on the axillary artery. Describe three methods for determining the projection line of the axillary artery.
4. The surgeon performs one of the stages of surgery for breast cancer-excise the tissue and lymph nodes of the axillary area. Specify the group of deep lymph nodes in this area and their localization.
5. The surgeon performs operative access to the axillary artery in the thoracic triangle. Specify which components of the neurovascular bundle adjacent to the axillary artery should be shifted to the medial and lateral sides?
6. Patient P., 21 years old, in the primary surgical treatment of a gunshot wound of the axillary area, the axillary artery in the thoracic triangle (above the scapular artery) was ligated. Explain the possible ways to restore blood supply to the upper limb.
7. Patient S., 62 years old, was admitted to the department of purulent surgery. Diagnosis: "Axillary abscess". Specify the areas in which the spread of purulent leakage is possible.
8. The patient M., 71 years old, a fracture of the surgical neck of the humerus, complicated by a subdeltoid hematoma. Specify the origin of the hematoma.
9. The surgeon makes a counter incision from the back of the shoulder joint. Explain how the “exclusion zone” is defined - the projection of the axillary nerve exit onto the posterior surface of the humerus.
10. During the operation under endotracheal anesthesia, the right shoulder of the patient rested on the edge of the operating table for a long time. In the postoperative period, he had a restriction on the extension of the thumb and index fingers. Explain the cause of this complication.
11. Patient A., 41 years old, a fracture of the diaphysis of the humerus at the level of the middle third. Explain what complication will indicate the absence of skin sensitivity and motor function in the area of innervation of the radial nerve?
12. The surgeon performs non-projection access to the brachial artery in the middle third of the shoulder. Explain which nerve should be shifted to the side when approaching the artery at this level.
13. The patient, 19 years old, was admitted in the emergency ward with complaints of pain, swelling in the area of the middle third of the shoulder, limitation of movement. Locally: there is a hematoma on the shoulder, soft tissue swelling, sharp pain in palpation. What studies are needed to clarify the diagnosis? What vessels and nerves could be damaged by the localization of the fracture at this level? Name the

muscles and specify the direction of displacement of the fragments, resulting from their traction.

14. The patient, 15 yearwas admitted to traumatology,  of pain in the right shoulder joint, swelling and restriction of movements. On examination: the limb is brought and bent in the elbow joint. In the deltoid area, abrasion and extensive hematoma. What studies are needed to clarify the diagnosis? In what directions do the fragments move? What formations could be damaged by displacement of fragments?

Lesson 3

Topographic anatomy of elbow, elbow, forearm, hand, wrist, wrist, metacarpal and fingers, brushes.

1. Patient K., 72 years old, with the aim of intravenous infusion is supposed to venepuncture in the anterior ulnar region. Explain to me what Vienna is more often a target for percutaneous puncture? Why? What technique should be used to contour the veins of the anterior elbow area?

2. A patient with a deep cut wound of the anterior lateral part of the ulnar fossa was admitted to the surgical Department. The wound, 2 cm long, is located at the level of the elbow bend, laterally from the tendon of the biceps muscle of the shoulder. Indicate which muscles may have been damaged? Which nerve function should be checked for diagnosis?

3. Patient K., 49 years old, was found to have purulent inflammation of the elbow joint. On examination, along with other symptoms, a protrusion was found on the sides of the olecranon. Give a topographic and anatomical rationale for this symptom..

4. The traumatology Department enrolled M., 26 years old, who has a scalped wound of the anterior region of the forearm. What are the features of the relationship between the surface and its own fascia of this area is explained by a slight detachment over a significant length of the skin flap?

5. Patient M., 48 years old, developed purulent numbness in the space of N. I. Pirogov-Paron. Name the boundaries of this space, and which external landmarks are reference points in the drainage of phlegmon of this space..

6. Patient U., 22 years old, was admitted to the surgical department, with a transverse wound at the level of the proximal transverse fold of the palm, penetrating into a deep sheet of the palmar aponeurosis. Explain which layers and anatomical formation can be dissected? What determines the contractile ability of the proximal and distal ends of these formations?

7. In the patient J., 15, years of phlegmon of the lateral fascial Lodge of the palm, occupying its medial Department. Specify, what is limited by this cellular gap? In which part of the skin fold of the thumb elevation can not continue the incision? Explain why?

8. Patient K., 26 years old, as a complication developed «U» - shaped (cross) phlegmon. Explain the inflammation of which synovial sheaths of the tendons of the flexors of the fingers is complicated by the development of «U» - shaped phlegmon? How often "this complication can be observed?

9. The patient M., 56 years old, subcutaneous panaritium of the Palmar surface of the nail phalanx of the index finger. There was a painful throbbing pain. When opening the panaritium, dry necrosis of subcutaneous tissue was found. What are the features of the structure of subcutaneous tissue due to severe pain and the possibility of its necrosis?

10. Clinical observations show that the large, index and middle fingers of the hand have a more severe course, can be complicated by the appearance of sub-pectoral phlegmon. Specify the features of the ways of lymph outflow from these fingers, explaining the more severe course of acute purulent inflammation.

11. In the surgical hospital has received the teenager of 16 years with a wound of

the right hand. On the Palmar surface of the right hand at the level of the middle third of the III, IV metacarpal bones there is a wound with smooth edges, moderately bleeding. Movement in III, IV fingers are limited. What kind of formations can be damaged here? What should be the tactics of the surgeon?

12. Patient, 15 yearsentered In the surgical Departmenof, with a cut wound of the left wrist joint. On examination: on the anterior surface of the forearm, 1 cm above the projection of the styloid process of the radius bone observed wound size 1.0*0.6 cm Movement in the first finger of the left hand is limited. What are the layers in this area that may have been damaged? Tactics of the doctor on duty?

Lesson 4.

Topographic anatomy of the gluteal region, hip joint, thigh.

1. Patient K., 70 years old, developed a post-injection abscess in the thickness of the right gluteus maximus muscle. Explain the cause of significant tissue tension and pronounced pain syndrome. What is the prevalence of purulent inflammatory process?
2. In an obese patient T., 68 years old, perform rapid access to the sciatic nerve in the posterior region of the thigh. Is it possible to use skin as the outer guideline: the gluteal fold? Why? How is this fold formed?
3. Explain in which quadrant of the gluteal region intramuscular injections are made? Why? Describe the methods for determining the quadrant of the region in which injections are performed?
4. Patient J., 48 years old, was admitted to the surgical department about a deep incised wound of the gluteal region, accompanied by severe bleeding. What are the features of the blood supply of this area cause difficulties of hemostasis in the wound? What operation should be carried out at unsuccessful attempt to stop the bleeding in the wound?
5. One of the symptoms indicating damage to the hip joint and a hip fracture is the displacement of the tip of the greater trochanter from the Roser-Nelaton line. How is this line determined? For which types of hip injuries does it have a practical meaning??
6. Patient T., 18 years old, coxitis. In which parts of the hip joint capsule are there "weak" places?
7. Patient K., 42 years old, is scheduled to have a puncture and catheterization of the femoral artery according to Seldinger's method for performing celiacography. Describe the projection of the femoral artery in relation to the inguinal ligament. On which side of the artery is the femoral vein located?
8. Patient T., 48 years old, addressed the surgeon. Diagnosis: "Right-sided femoral hernia." From the anamnesis, pathogenetic factors of the hernia are revealed: increased intra-abdominal pressure, degenerative changes in the layers of the abdominal wall and pelvis (cough due to bronchiectasis, three genera). Name the anatomical background of femoral hernia. Name the walls of the femoral canal
9. Patient R., 54 years old, is scheduled for a reconstructive femoral vein surgery. Explain the anatomical relationships of the femoral vessels in the femoral triangle and the middle third of the thigh to justify quick access to the femoral vein.
10. Patient S., 56 years old, suffering from hypertension, makes intramuscular injections of a solution of magnesium sulfate in the upper lateral quadrant of the berry area. As a complication, post-injection abscess of the gluteal region occurred. Specify the spread of pus?
11. Patient C., 31 years old, spondylitis of tuberculous etiology (tuberculosis of the lumbar vertebra) complicated by abscess, which has spread before small spits femur. Indicate which lacuna and fascial sheath which muscle tuberculosis sore could spread to the anterior thigh.
12. In a patient with a fracture of the femur at the level of the middle third, hematoma builds up in the posterior muscle-fascial bed. Explain which blood vessels were damaged, what internal reference points the surgeon should use to access these

blood vessels in order to permanently stop the bleeding.

Lesson № 5.

Topographic anatomy of the knee, knee-joint, lower leg, ankle, foot..

1. Patient K., 23 years old, was admitted to the casualty department, with a gunshot wound of the anterior region of the right thigh 5 cm up from the patella. The surgeon suggested, and after additional examination (X-ray examination, puncture of the joint) found that this wound penetrates into the cavity of the knee joint. Explain what was the basis for such a diagnosis?
2. A patient has an accumulation of pus in the knee joint. Opening and drainage of the anterior part of the joint cavity carried out by parapatellar incisions. In order to drain the posterior part of the joint cavity, an additional incision is made along the medial edge of the popliteal fossa. To do this, through the medial parapatellar incision, forceps are held in the posterior direction. The end of it near the tendon of the semitendinaceous muscle forms a protrusion of the soft tissues and an incision is made above it. Explain why it is not recommended to do arthrotomy along the lateral edge of the popliteal fossa.
3. Patient 3., 57 years old, developed popliteal artery occlusion above the discharge of the upper arteries of the knee from it. What collaterals can help restore the blood supply to the lower leg??
4. Patient N., 17 years old, hit the angle of the chair with the lateral part of the lower leg at the level of the base of the fibula head; she felt such a sharp pain that for a moment she lost consciousness and could not continue to take a single step. Explain which bruise of the nerve is observed in the patient.
5. The patient is scheduled femoral-posterior to the tibia shunting. In which canal of the posterior region of the leg is the posterior tibial artery? Name the muscles that make up the walls of this channel. What is the syntopia of the elements of the neurovascular bundle and the projection of the posterior tibial artery?
6. Clinical observations show that fractures of the bones of the legs are often open. What features of the relationship between soft tissues and bones of the lower leg can explain the cause of open fractures?
7. When phlegmon of the middle fascial bed of the sole of the patient, pus has accumulated in the deep space of the posterior region of the leg. Explain the distribution path.
8. Patient C., 19 years old, 4 days ago, with his right foot, stepped on a nail. The phlegmon of an average fascial bed of a sole developed. Explain the possible ways of dissemination of purulent effusions.
9. The patient came to the emergency room about a cut skin wound of the sole: on the river bank, he stepped on a fragment of bottle glass with his left foot. The skin wound gapes, bleeds, swelling of hypodermic cellulose is noted. What operative reception is shown before skin wound closure in this situation? Why is the need for this operational reception?

Lesson №6.

Operations on vessels, nerves and tendons of the upper and lower extremities.

1. Patient S., 53 years, appointed clickography. Explain, what is this method of research? How to make clickography?
2. The surgeon performs a direct embolectomy of the superior mesenteric artery. Explain how they approach the embolus? What methods produce embolectomy?
3. A 16-year-old patient with a gunshot wound of the right elbow joint was admitted to the surgical Department. On examination: on the medial side there is an inlet with a diameter of 0.2 cm, and on the back surface of the elbow joint there is an outlet with a diameter of 0.5 cm, the wounds moderately bleed. The x-ray shows damage to the medial epicondyle of the humerus. The patient does not feel IV,V fingers of the right hand. What layers could be damaged? What nerve function is affected? What is the tactics of the doctor on duty?
4. Patient P., 17 years old, popliteal artery thromboembolism (complication of mitral valve disease of rheumatic etiology). The surgeon performs an indirect embolectomy. Specify what is the essence of this method, how can I remove a blood clot? What tool is used in this operation?
5. The patient M., 45 years old, due to a gunshot wound has a significant destruction of the artery wall. What methods of ligation of this vessel can be used for the final stop of bleeding?
6. In the surgical Department entered the patient N., 20 years with an ankle wound. During examination noticed the wound on the posterior surface of the ankle joint size 2.0*0.4 cm of Motion in the foot is limited and painful. Which layers are damaged? What should be the tactics of the surgeon on duty?
7. Patient 3., 26 years old, gunshot wound to the armpit. To ensure hemostasis, the surgeon decided to bandage the axillary artery. Specify the sequence of ligation of the ends of the artery: how many ligatures are applied to the Central and peripheral ends of the artery'? How is the reliability control of hemostasis?
8. The patient is 15 years old, he entered the surgical hospital with a wound in the projection of the head of the fibula. The wound is 1.5 * 0.6 cm in size with smooth edges, bleeds moderately, the feet sag (“horse's foot”). name formations that could be damaged? What is the sequence of actions of the surgeon on duty??
9. The surgeon bandages the Central end of the main artery in a deep, inaccessible wound. Explain the technique that the surgeon and assistant will use to secure the ligature before tying the second node.
10. In the trauma Department received a patient with an accident. When examining the patient in the mind, there is swelling of the middle third of the left thigh, pain, deformation of this area. You are the doctor on duty, what is your tactics?
11. The patient was admitted to traumatology 17 years old, with complaints of pain in the area of edema, hematoma, forearm deformed, movements are sharply limited and painful. Palpation is determined by fastening, the head of the radius is palpated freely. What research is required to clarify the diagnosis? What's the preliminary diagnosis? What nerves can be damaged by fractures of such localization?
12. The surgeon performs a circular vascular suture using the Carrel method.

Explain for what purpose the outer shell (adventitia) is pre-excised, freeing 2-3 mm of the artery from it?

13. The patient is 13 years old, went to the surgical Department with complaints of a wound, pain in the right foot. The injury was 3 days ago, cut with glass. When examining the plantar surface of the right foot, there is a wound 2.5*0.8 cm in size, hyperemia of the skin around the wound, pain in palpation. Pain radiates to the back surface of the Shin and the rear of the foot, the wound is covered with a crust, from under which pus seeps, redness and swelling on the back surface of the foot, numbness in the area of the I-th interdigital interval. In what cellular spaces of a sole can develop phlegmons? Ways of distribution of pus in the abscesses of the sole? What branch, what nerve innervates the I-th interdigital space? What should be the breakdown for the opening of abscesses of the sole?

14. When performing a circular vascular suture using the Carrel method, the surgeon connects the ends of the artery with three "P" - shaped sutures-holders. For what purpose are used the suture-holders?

15. In phlebology, along with operations on the superficial and deep veins of the lower limb, a ligation of the communicant veins (supra - fascial - by Cocquet and sub-fascial-by Linton) is used. Explain the purpose of these operations.

16. The patient, 35 years old, entered the Department of peripheral nerve surgery with impaired function of the radial nerve due to compression in the scar. 4.5 months ago, he was on treatment for a gunshot wound to the middle third of the shoulder. Specify in which direction with external neurolysis the surgeon will allocate the nerve from the scar, which method determines the conductivity of the nerve?

17. When performing the nodal suture of the nerve, the surgeon met with a complication-the eruption of the suture. Which suture is stronger when approaching the ends of the nerve? What are the disadvantages of this seam?

18. In the patient H., 40 years, after neurolysis and excision of the sciatic nerve ends, a large nerve defect arose. What techniques are used in peripheral nerve surgery to connect the ends?

# Lesson №7.

## Operations FOR purulent inflammatory diseases of the upper and lower extremities.

1. Explain the possible complications of subcutaneous panaritium of the nail phalanx, if during the operation is not completely dissected connective tissue strands between the skin and periosteum and not carried out radical excision of necrotic areas of subcutaneous tissue.
2. During the operation, a fistula in the subcutaneous tissue was found in the skin of the nail phalanx of the thumb after removal of the detached epidermis. When pressing in the area of fistula appeared pus. What is the surgeon's tactic in this situation?
3. The patient has a subaponeurotic phlegmon of the middle fascial bed of the palm, pronounced swelling of the rear of the hand. What is the structure of the subcutaneous tissue of the rear of the hand and the ways of lymph outflow from the palm of this symptom?
4. The patient has subcutaneous panaritium of the Palmar surface of the middle phalanx of the middle finger. What is the reference point when applying the cut? Explain where the incision is made?
5. The patient has subcutaneous panaritium. The focus of destruction on the Palmar surface of the nail phalanx of the ring finger. What kind of incision will be used by the surgeon?
6. A patient K., 26 years old, addressed to the surgeon at the polyclinic reception. After manicure, she developed inflammation of the periungual roller (paronychia) at one corner of the proximal part of the nail plate. What sections are used in this situation, where it is carried out?
7. At the polyclinic reception, the surgeon has a patient sh., 44 years old, who has paronychia with a lesion of the periungual roller at the base of the nail plate. Explain the technique of the operation.
8. The patient TS, 28 years old, as a result of posttraumatic subungual hematoma, a subungual panaritium with a Central location of the ulcer appeared. Explain the scope of surgery.
9. The patient V., 25 years old, subungual panaritium with localization of purulent focus closer to the free edge of the nail. Explain the scope of surgery.
10. Patient T., 30, subungual panaritium. Most of the nail plate is detached by pus from its bed. Specify the amount of surgery.
11. The surgeon examines the zone of the greatest pain in the tendon of the index finger with the probe. What external guidelines correspond to the distal and proximal boundaries of the zone of greatest pain?
12. In arthrotomy, there is a risk of damage to the articular cartilage. What is the technique to avoid damage to the articular cartilage when dissecting the synovial membrane?

Lesson №7.

Operations on the long tubular bones and joints of the upper and lower extremities. Amputation and exarticulation.

1. Anatomical and physiological features of the long tubular bone, large periods of bone wound healing and the possibility of displacement of bone fragments (due to muscle cravings) determine the features of surgical interventions on this organ. Name them.
2. In the surgical treatment of fractures of the long tubular bones, it is necessary to provide conditions for the regeneration of bone tissue. Name these conditions.
3. In the treatment of closed fractures of the long tubular bones, skeletal traction is used, which providing good reposition and fixation of bone fragments. In what cases is shown skeletal traction? What ways it is carried out?
4. In surgical practice is used subperiosteal and cross-periosteal bone resection. Explain the main differences between these operations.
5. Patient K., 15 years old, apropos ankylosis of the hip joint is performed confirmatory osteotomy of the hip by K. N. Kochev. What technique is used for stable comparison of bone fragments?
6. Patient G., 18 years old, apropos ankylosis of the hip joint is performed confirmatory osteotomy of the hip by A. A. Kozlovsky. What technique is used for stable comparison of bone fragments?
7. Patient A., 22 years old, at the end of the treatment of a shin fracture is observed shortening of the leg by 7 cm. In which way limb lengthening be achieved?
8. Больному В., 18 лет, apropos ankylosis of the knee joint was done supracondylar osteotomy of the hip by Repke. What advantage does this osteotomy have?
9. For the implementation of an open retrograde intramedullary osteosynthesis at a fracture, a traumatologist plans prompt access to the bone. What criteria should he use when choosing operational access?
10. In the traumatological department enrolled B., 15 years old, about the traumatic crush of the right foot. Soft tissues of the heel area are without damage. Radiography of the foot confirmed the integrity of the heel bone. What amputation is shown to this patient? What is its essence? What advantages does it have?
11. To the victim N., 37 years old, performed fascioplasty amputation of the leg on the level of the middle third. Which flap of soft tissue should be longer? What soft tissues are included in the anterior and posterior flap? In what sequence are the sawdust larger and fibula bones covered with these flaps?
12. What are the reasons for the formation of "conical" stump. What is the essence of reamputation?
13. Н. 27 лет, apropos of gunshot wound of knee joint was made hip amputation at the border of the middle and lower third by a double snippet skin and facial method. Name the stages of prosthetics.
14. Patient, K., 45 years old, complained of pulsation stump, which complicating denture wearing. Explain the reason for the development of this complication. What technical technique makes it possible to prevent its development?

15. As a result of traffic accident a 4-year-old child needed to amputate the lower limb on the border of the upper and middle third of the shin. Specify the features of amputation of the tibial and fibula bones, features of the processing of periosteum in children.

16. Patient F., 40 years old, was appealed after amputation of the lower limb at the level of the lower third of the thigh about the gas gangrene to the orthopedic center for the selection of prosthesis 1 month after surgery. What type of prosthesis is shown to her to pick up? Is it possible for her to choose a permanent prosthesis in this period??

Lesson №9.

Topographic Anatomy and Operative Surgery of the brain region of head.

1. Neurosurgeon prepares the surgical field for the surgical processing of wounds of soft tissues of the parietal region. At first, he processes the operative field with a swab with hartshorn (ether or gasoline). Explain the need for this step..

2. In the surgical department was admitted Z.,12 years old, with a scalped wound of the fronto-parietal-occipital region. Skin aponeurotic flap fixed "leg" 5.5 cm wide, located posterior to the mastoid process. The edges of the flap bleed. Which neurovascular bundle is part of the flap? What features of the blood supply to the fronto-parietal-occipital region can explain the significant blood loss and high regenerative abilities of the tissues?

3. In the emergency room of a multidisciplinary hospital, three victims arrived at which the construction of the canopy at the bus stop collapse. As a result of blunt trauma of the soft tissues of the cranial vault, hematomas appeared in the victims: 1) The victim A., 30years old,have a hematoma witch look like a «cone», 3 * 3cm in size, has clear boundaries. 2) The victim V., 40 years old, hematoma has no clear boundaries and occupies the entire surface of the cranial vault. 3) The victim N., 60 years old, hematoma is located in the left parietal region and coincides with the boundaries of the left parietal bone. Can you, on the basis of the examination of the victims, suggest what kind of hematomas they have?

4. N., 14 years old, as a complication of blunt trauma of the fronto-parietal region, has arisen a subaponeurotic hematoma. What local features does it have? What is the nature of the prevalence of it differs from the subperiosteal hematoma?

5. Patient K., 13 years old, because of an infected wound in the soft tissues of the mastoid process area was arise thrombosis of the transverse and sigmoid sinuses. Explain the causal relationship of these pathological processes.

6. A patient F.,28 years old, is admitted to the neurosurgical department with penetrating skull wound (hit with a metal object). At the time of admission, there is a chopped wound of soft tissue, fracture of the parietal bone on the left, near the swept seam. Create an algorithm for the examination and treatment of this patient. What methods can be used to stop bleeding from the diploic substance and from the sinuses of the dura mater?

7. Epidural hematomas are most often localized in the temporal, parietal and occipital regions. What is the source of epidural hematoma, what characterizes the dynamics of compression syndrome in “arterial” and “venous capillary” hematomas?

8. At fractures of the cranial vault the area of the detachment of the internal bone("Glass") plate is 2-4 times larger than the size of the fracture of the external plate. What is the reason for this discrepancy between the area of damage to the external and internal bone plastics?

9. A mother with a child approached a pediatrician for an appointment 1.3 months with complaints of deformation of the child’s head. According to the mother, the boy often complains of a headache, in addition, he has a "bulging eyes", child is maudlin, cranky. Survey results: on the roentgenogram of the skull there are no cranial sutures, the bones of the vault are significantly thinned, there are pronounced fingers

depressions throughout the vault of the skull. The back of the Turkish saddle thinned. At computed tomography: small sizes of ventricles of a brain, reduction of subarachnoid cobweb. Consultation of the oculist: congestive optic nerve discs. Каков Ваш диагноз? What is the treatment strategy??

10. Patient M., 29 years old, as a complication of cranial fracture in the anterior cranial fossa with the formation of liquor fistula, there were symptoms of "hanky" (a handkerchief moistened with liquor from the nasal passages, after drying, remains soft, saturated with mucus - hard) and "double spot" (in the center of the white napkin is a red spot - this is an admixture of blood in the liquor fluid, on the periphery - light coloured halo of liquor) purulent meningitis developed. Explain the mechanism of occurrence of this complication..

11. A 21-year-old boy enrolled in the neurosurgical department. Delivered from the accident site (motorcycle control). The patient is unconscious, fractures of the humerus and femur bones, significant facial damage are diagnosed. At the CT scan in axial projection, a strip of white is detected on the lateral surface of the left hemisphere, having 5 mm in thickness and 12 cm in length. What is the most likely diagnosis??

12. Patient M., 3 years old, located in the neurosurgical department of the children's hospital diagnosed with occlusive hydrocephalus. From the anamnesis of life: a child from pregnancy II, II childbirth. Childbirth was heavy, in mixed buttocks-foot previa. The baby didn't shouted right away. The Apgar score is 5-7 points. What should be the treatment strategy for this patient? Is conservative therapy acceptable?

13. The victim T., 33 years old, a skull base fracture. Along with other symptoms, there is bleeding and discharge of liquor from the external auditory canal, internal strabismus, paralysis of the facial muscles of the face, hearing loss on the affected side. Justify the topical diagnosis of this type of traumatic brain injury. What complication of intracranial nature may occur in this patient?

14. A 23-year-old woman has MRI of the brain. Sagittal section of MRI passed close to midline. The visualization of which space confirms that the cut passed along the midline?

15. Patient O., 12 years old, occlusive hydrocephalus with a uniform expansion of the lateral and 3rd ventricles of the brain. At what level can occlusion of the cerebrospinal fluid pathways take place in this patient? What does “hydrocephalic brain edema” mean?

16. In the neurological department delivered a woman at the age of 70 years, with complaints of visual impairment that arose suddenly against the backdrop of increased blood pressure till 180/ millimeters of mercury. Suffering from hypertension for about 20 years. Never been examined, she was not prescribed antihypertensive therapy. Occasionally, when blood pressure rises to high numbers, she calls an ambulance, which eliminate hypertensive crisis. The last deterioration came on the background of stress. A neighbor called an ambulance. When a woman tried to get out of bed abruptly, she complained of a sharp headache, dizziness, blurred vision. What is your diagnosis?

17. Patient K., 36 years old, repeatedly referred to a neurologist with complaints of frequent persistent headaches, dizziness, memory impairment. The examination

revealed a pronounced narrowing of the left internal carotid artery. Explain why this patient developed these symptoms?

18. Neurosurgeon in the surgical processing of a cranial cerebral wound of the frontal-temporal region after excision of the soft tissues and the periosteum has begun the treatment of a bone wound. What is the sequence of this phase of the operation? What are the ways to provide bone wound hemostasis?

19. At surgical processing of a craniocerebral wound with a small shard skull fracture over the superior sagittal sinus necessitated sinus ligation. In what cases is this hemostasis method shown for sinus damage? How and what is a solid ligature? What are the consequences of using this method of hemostasis?

20. Neurosurgeon performs surgical processing of craniocerebral wound. What is the indication for autopsy an intact dura? What can be complicated by the unreasonable opening of this shell in traumatic brain injury?

21. Neurosurgeon prepares for craniotomy in the temporal-parietal region due to epidural hematoma. Before limiting the operative field with sterile linen, he with a cotton wool stick moistened with 1% solution of brilliant green,draws a Cronlane scheme. Explain the purpose of this scheme. Explain the meaning of this scheme.

22. Patient O., 51 years old, regarding the increase in intracranial pressure in an inoperable brain tumor, decompressive craniotomy in the right temporal region is performed (by Cushing). Made arcuate (horseshoe) incision of soft tissue. In which direction of the area should the base of the skin aponeurotic flap be turned? Why? What methods of hemostasis are used for this?

23. Before autopsy the tense dura mater with decompressive craniotomy by Cushing To the patient is performed lumbar puncture. Why spinal fluid is removed slowly and in small portions (10-30 ml)?

24. When osteoplastic craniotomy of the skull, it is advisable to connect the cutter holes with an Olivecron wire saw. Why?

Lesson №10

Topographic anatomy and operative surgery of the facial region of the head.

1. Patient I., 13 years old, who “squeezed pimple”, developed furuncle upper lip. Along with severe intoxication, a sharp swelling of the face, there is redness and soreness along the facial and angular veins to the medial edge of the palpebral fissure; upon palpation, the veins are dense and roll under the finger. What features of the skin structure determine the frequency of localization of boils of the nasolabial triangle? What terrible intracranial complication may develop in this patient? Why?
2. Woman A., 43 years old, developed pain in the cheek area and near the mouth. Previously, she noted similar pain, but they independently stopped. Currently the pain has become so severe that the patient cannot even eat, brush her teeth. What is your diagnosis?
3. Seny M., 6 years old, left-sided purulent parotitis. Along with other symptoms, there is difficulty breathing, sharp pain when swallowing, protrusion of the left side wall of the pharynx. What is the complication of purulent parotiditis in this child and the cause of its occurrence?
4. A 30-year-old male patient turned to an ENT doctor complaining of pain when swallowing. From the history of the disease: ill a week ago, he was treated at home for angina. On examination, there is a bright hyperemia of the pharynx, protrusion of the anterior arch. What is your diagnosis and treatment algorithm?
5. Patient K., 48 years old, after suffering otitis media (not treated) had a pharyngeal abscess. With which disease is a differential diagnosis necessary? What is the technique of opening and draining the pharyngeal abscess?
6. During operations in the lateral area of the face, cuts are made in “neutral” zones. Explain what these zones represent? What complications can occur if an incision is made incorrectly?
7. In the surgical department is prepared for the operation of the patient U., 50 years old. Preoperative diagnosis: Parotid abscess of salivary gland. What are the features of the opening of the abscess of the parotid salivary gland?
8. During a street fight, a 17-year-old teenager received a incised wound to the left side of his face, 5 cm long. A teenager was taken by ambulance to the department of maxillofacial surgery. Indicate which periods are optimal for the initial surgical treatment of wounds.? What is the technique of face wound closure?
9. Patient P., 52 years old, trigeminal neuralgia. She is shown a blockade of the branches of the trigeminal nerve. Specify the place of introduction of 70% ethyl alcohol.
10. In a newborn T., congenital facial defects are diagnosed: complete cleft of the upper lip and incomplete cleft of the hard palate. What surgical interventions are shown to this patient? What goals do they pursue and within what time frame?
11. Patient S., 45 years old, was performed right-sided parotidectomy for a mixed tumor. What nerve and its branches should be repaired during the operation? What research method allows to identify (distinguish from cicatricial cords) branches of this nerve? How can hemostasis be performed when performing parotidectomy?
12. Parotid-chewing fascia forms the capsule and the case of the parotid gland.

What do “case” glands mean? In which parts of the capsule is more dense and thick, in which it is poorly developed? What is the difference between the relationship of the parotid and submandibular glands with their capsules?

13. Patient P., 13 years old, post-influenza sinusitis maxillitis (sinusitis). What anatomical features of the message of the maxillary sinus with the nasal cavity can be explained by the fact that of all the paranasal sinuses purulent inflammation often develops in the maxillary sinus?

14. When examining patients, a characteristic of the pharynx is given. Explain the concept of "pharynx" and "lymphoepithelial ring." What is the frequency of inflammation of the pharynx?

15. Patient R., 19 years old, as a complication of pulpitis (7th right upper tooth), purulent sinusitis-maxillitis (sinusitis). What features of the anatomical relationship of the roots of the upper tooth 7 can explain the transition of the inflammatory process in the maxillary sinus?

Lesson№11.

Topographic anatomy. Topographic anatomy of the neck organs.

1. Patient 3., 16 years old, was hospitalized in the department of purulent surgery. Due to perforation of the esophagus wall, the patient has a swelling of the neck more on the left side, pain when swallowing, turning the head, body temperature is 39.3 °. Indicate in which fat space of the neck phlegmon has developed? In which area can a purulent drain appear? Where make the incision for opening phlegmon?
2. Patient B., 25 years old, has a formation of an abscess, localized above the sternum jugular notch and above the collarbone as a «collar». Specify, between what fascia abscess is located? What cuts are used to open an abscess??
3. One of the stages of the surgical treatment of cancer of the lower lip is fascial-cular excision of the tissue and lymph nodes of the submandibular triangle (Vanah operation). Explain the need to remove the submandibular gland. What nerve can be damaged during the operation? What blood vessels are ligated and crossed during surgery?
4. Patient I., 32 years old, after subtotal subfascial resection of the thyroid gland celebrated a change in voice (hoarseness) and difficulty in breathing during exercise stress. What caused this symptom? Are there topographic-anatomical prerequisites for the development of this complication?
5. The operation preceding resection of the upper jaw in cancer using the “knife” technique is ligation of the external carotid artery in the carotid triangle. What caused the need for such an operation? Describe the projection line and the place of the incision to expose the external carotid artery. What signs should the surgeon use to distinguish the external carotid artery from the internal?
6. After the lower tracheostomy, the patient developed pain in the area of the surgical wound, skin flushing, soreness, swelling, increased body temperature to 39-40 °. What are the layers of fiber in the neck, in which the purulent process may develop, than they are limited, to which purulent streaks spread??
7. In the emergency room of the surgical hospital by radio from the ambulance car gave information about the arrival of the victim with a wound to the neck in the middle part. What is the duty of a surgeon on duty? What is the surgeon’s tactic for wounding the neck in the lower or upper part??
8. At the 18-year-old woman the knot, with a diameter of 1,5 cm in supraclavicular area comes to light. The node is removed. Histological examination reveals normal well-differentiated thyroid tissue inside the lymph node. What should the surgeon think about when receiving such a result of the histological conclusion?
9. Patient S. was admitted to the surgical department, 21 years old with a diagnosis of neck injury. Damage to major vessels of the neck. How can the external carotid artery be distinguished from the internal carotid artery in a wound? What is the tactic for injuring: 1) the common carotid artery, 2) the internal carotid artery, 3) the external carotid artery.

Lesson №12.

Operative surgery of neck. Operative surgery of neck organs.

1. Patient V.,15 years old, was admitted to the surgical department. Diagnosis: “Phlegmon of the suprasternal interaponevrotic space”. Indicate wherewith this space is limited. Where can a purulent leak come? What education can be damaged when opening this phlegmon by a cut 1 cm up from the jugular notch of the sternum?

2. Liza M., 7 years old, phlegmon of the right submandibular region. At examination: in the lower department of the buccal region there is a festering skin wound - a consequence of an insect bite and a comb. Body temperature - 38.3 °, severe pain and swelling in the submandibular region. Explain the connection between these inflammatory processes. In which layer of the submandibular triangle phlegmon has developed? Why at the opening of this phlegmon should retreat 1.5-2 cm down from the lower edge of the lower jaw?

3. To the patient K., 42 years old, diagnosed with Diffuse toxic goiter planned to perform a subtotal resection of the thyroid gland. Indicate how much thyroid parenchyma should be save? What are the most dangerous complications at this surgical intervention?

4. The patient with a foreign body of the esophagus entered the ENT department. Removal of a foreign body during esophagoscopy failed. Where foreign bodies of the cervical esophagus most often linger? Which cervical vertebra does it correspond to? Which side carry out accessing the esophagus, why?

5. After resection of the thyroid gland for thyrotoxic goiter, the patient developed hoarseness. What technical error caused this complication? What method of operation allows you to avoid this complication, as well as damage to other organs?

6. A child suffering from diphtheria have arisen sharp difficulties external breathing, acrocyanosis appeared, auxiliary muscles are involved in breathing. What is the urgent surgery shown to the baby? What are the complications that occur during this operation. List the special tools needed to execution it.

7. When performing a lower tracheostomy at the time of dissection of the trachea arterial bleeding occurred. What arteries can be damaged during tracheostomy? Specify measures to prevent these complications.

8. At 40-year-old woman in a state of clinical euthyroidism, which in childhood underwent radiation therapy for a thymus disease, currently there is a single asymptomatic node in the right lobe of the thyroid gland. When ultrasound in two projections found that education has a parenchymal structure. What is the most rational tactic at the moment? Whether the puncture aspiration biopsy is shown?

9. 50 year old man with episodes of transient blindness in the right eye needs aorta-femoral and femoral-popliteal shunting on the left due to marked intermittent claudication (endarteritis obliterans). Angiography revealed stenosis of up to 80% in both carotid bifurcations. What operation should be performed first for him him?

10. What blockade should be made to a patient with a penetrating wound of the chest, complicated by pleuropulmonary shock? Describe the technique of this type of blockade.

11. Patient A., 50 years old, suffered a terrorist attack. On admission to the emergency room of a surgical hospital, a wound cervical esophagus was diagnosed.

What is the surgeon tactic? Under what kind of anesthesia should the operation be performed? What position provides the best access to the cervical part of the esophagus? Where is necessary to perform access?

12. At patient U., 18 years old, on ultrasound examination of the thyroid gland revealed a node with a diameter of 2.5 cm. Endocrinologist prescribes fine-needle aspiration biopsy of the thyroid gland. What is the purpose of this study? What are the options for performing this study, which one is preferable? What is the technique of manipulation ? What are the complications of this manipulation?

13. Patient C., retropharyngeal abscess. Explain why this patient needs to open an abscess on an emergency basis? What a dangerous complication threatens to him? Give a topographic-anatomical explanation of the development of this complication. Describe the technique of opening an abscess.

FEDERAL STATE BUDGET EDUCATIONAL INSTITUTION OF HIGHER EDUCATION "NORTH OSSETIAN STATE MEDICAL ACADEMY" MINISTRY OF HEALTH OF THE RUSSIAN FEDERATION

DEPARTMENT OF HUMAN ANATOMY WITH TOPOGRAPHIC ANATOMY AND OPERATIVE SURGERY

# ANSWERS TO SITUATIONAL TASKS ON DISCIPLINE «TOPOGRAPHIC ANATOMY AND OPERATIONAL SURGERY »

for students of the 3rd course in the specialty
31.05.01 Faculty of Medicine (specialty)

2020

Lesson №1.

General surgical technique. Surgical tools. Connection and separation of tissues.

1. Apodactyl method — performing the majority of manipulations in a wound with tools without touching the operation object with hands. Advantages: increasing asepticity, the use of such techniques for microsurgical operations, as well as in the depth of small wounds (during operations on open cavities of the heart, during access to deep structures of the brain). Disadvantage: technical difficulties of the operation.

2. The operation's ablasticity is a set of measures to prevent the dissemination of tumor cells during the operation. It involves the removal of an organ affected with a tumor with regional lymph nodes. It involves the removal of an organ affected with a tumor with regional lymph nodes (also provide hemostasis and partial asepticity), produce.

3. When using local anesthesia by the method of "tight creeping infiltrate", occur compressed ща small veins are and the bleeding stops. By the end of the operation, the anesthetic solution is resorbed, making it possible to resume bleeding, as well slipping ligatures from the stump of a bandaged vessel.

4. 1) only serviceable tools are used; 2) each instrument has its own purpose; 3) the surgeon should feel with the hand not the handle, but the working part of the instrument; 4) manipulation of the instruments in the wound is performed with smooth, rhythmic movements, without any effort; 5) careful, sparing attitude, i.e., with minimal trauma to the walls and bottom of the wound. Wound - open receptor field.

5. To provide a linear skin incision with a subcutaneous base, providing better healing and cosmetic results.

6. Perpendicular to the bleeding vessel (parallel to the wound wall). Under the "nose" of clamp bring closer ligature , tie the first knot; the clamp is gently removed, the first knot is finally tightened, then the second knot is tied to the second knot.

7. The surgeon and the assistant with surgical tweezers capture their own fascia, respectively, in the middle of the wound. Form a fold of this layer with the surgeon cuts through the abdomen of the scalpel. A guttered probe is inserted into the hole, directing its end on its own fascia to one side of the wound. The probe is fixed with fingers according to the lever principle. In the gutter of the probe set scalpel (with belly to anteriorly) and cut their own fascia. The probe is introduced into the other side of the wound, which is dissected just like the previous one.

8. Ligature channel when using triangular (cutting) иглы образуется разрезанием слоя (before performing the skin suture, the skin is treated with an alcoholic iodine tincture). The cutting part of this needle is wider than the ear. When using a round (piercing) needle, the ligature channel is formed by piercing a layer. The cutting needle consists of three parts: the eyelet adjacent to the eye of the dihedral landing pad for the needle holder and the cutting part. The presence of a dihedral landing site eliminates the rotation of the needle in the beak of the needle holder along the axis. Surgical wound is sutured in layers, starting from the bottom. Each edge of the layer is sewn separately, ensuring comparability in length and thickness. Do not leave cavities between the rows of stitches; to do this, capture the surface part of the previous layer.

9. 1)ensuring the comparability of the edges of the skin wound along the length of the execution of adaptation sutures; 2) flashing each wound edge separately (providing entry and exit at the edges at the same depth). The stitches form perpendicular to the wound; 3) the entrance and exit at the edges of the wound at the same distance from the edge;4) the edge of the skin wound is captured with surgical tweezers only once, the cutting needle is inserted under the forceps; 5) the needle is held by the opposite movement of the needle holder and tweezers (the needle is injected into the skin, and the forceps are put on the needle); 6) tighten the knot until the wound edges touch, the knot is placed on one side of the wound; 7) should be excludedtuck the wound edge inward.

10. In order to achieve better healing of the skin wound and the cosmetic of the scar, ensure the compatibility of the wound edges along the length of the adaptation (situational) sutures: 1st - on the middle of the wound, 2nd - on one half, 3rd on the other half of the wound. Then the seams are formed between the adaptation seams. The site is located on the side of the wound to avoid ingrowing it into the scar and the possibility of removing the skin suture without infection of the ligature channel.

11. Before removing the suture, the skin is treated with an alcoholic iodine tincture. In parallel with the suture, the surgeon places the branches of the pointed scissors along the rib (for fixing the suture). The knot is grasped with anatomical tweezers (they hold the knot with tweezers all the time until the suture is removed) and tighten it anteriorly until the “lighter (in the canal not infected) part of the ligature appears. The pointed jaw of the scissors is brought under the ligature; the ligature is cut at the level of its light part. Scissors on the edge set at the seam. The ligature is removed with a pair of tweezers anteriorly. The skin is treated with an alcoholic iodine tincture and aseptic dressing is applied. Complications when removing the suture: 1) the divergence of the wound edges; 2) infection of the wound channel.

Lesson №2.

Topographical anatomy of upper arm : the scapula, the deltoid, the subclavian and axillary regions; shoulder joint; shoulder.

1. Bo avoid damage to the subclavian vein, brachial plexus and subclavian artery.

2. When the lateral fragment of the clavicle is displaced, there may be compression of the subclavian part of the brachial plexus and damage to the subclavian vein and artery.

3. 1) method N. I. Pirogova" - on the anterior edge of the hair growth of the axillary region; 2) on the medial edge of the pectoral-brachial muscle; 3) parallel to the lower edge of the large pectoral pectoral muscle at the border of the anterior and middle third of the width of the axillary fossa.

4. Lateral group of lymph nodes located on the lateral wall of the axillary cavity medial to the neurovascular bundle; the center – in the center of base of axillary cavity in the course of the axillary vein; the medial - serratus anterior in the course of the lateral thoracic artery and vein; posterior - in the course of the subscapular and veins; the apical to the clavicular-pectoral triangle in the course of the axillary vein.

5. In the medial side it is necessary to shift the medial bundle of the brachial plexus and axillary vein, in the lateral-lateral bundle of the brachial plexus.

6. The anastomotic circle of the scapula is formed by the supra-scapular artery - from the thyroid trunk and the descending branch, the transverse artery of the neck (from the subclavian artery), which is anastomosed with the branch of the scapular artery-the artery enveloping the shovel (from the axillary artery).

7. With phlegmon of the axillary region, purulent puffiness can be in the lateral triangle of the neck, deltoid, scapular areas, the anterior region of the shoulder, sub-pectoral (superficial or deep) cellular spaces of the chest wall.

8. Sources under deltoid hematomas are front and back, envelope humerus artery and vein.

9. "Forbidden zone" corresponds to the intersection of the posterior edge of the deltoid muscle and the vertical line drawn from the acromial process of the scapula (6 cm down from the acromial process).

10. This complication is due to the compression of the radial nerve in plicamycin channel with consequent impairment of the innervation of the muscles of the back muscle-fascial bed of the forearm (in particular, the long extensor of the thumb and extensor of the index finger).

11. Existing symptoms indicate a complete anatomical rupture of the radial nerve.

12. Median, because in the middle third of the shoulder it is anteriorly from the brachial artery.

13. It is necessary to perform radiography in 2 projections. Diagnosis: closed fracture of the middle third of the humerus. Damaged deep vessels of the shoulder, radial nerve because they are adjacent to the bone. Proximal fragment is displaced medially - as a result thrust breast, round and subscapularis muscles, anteriorly - as a result of the thrust of the coracobrachialis muscle and shoulder, rotation anterior – latissimus dorsi. Distal fragment moves up-under the thrust of the bicuspid muscle,

anteriorly-as a result of the traction of the humerus muscle.

14. To clarify the diagnosis, it is necessary to perform radiography of the right shoulder joint in 2 projections. Diagnosis: Closed fracture of the surgical neck of the humerus with displacement. Proximal fragment is displaced medially due to the pull of the supraspinatus and infraspinatus muscles. The distal detachment is shifted upwards due to the traction of the biceps, triceps and beak shoulder muscles; medial - due to the traction of the large and small pectoral, large and small round muscles, the scapular muscle. With such a fracture, there is a risk of damage to the axillary nerve and vessels enveloping the humerus.

Lesson №3.

Topographic anatomy of the elbow area ,elbow joint, forearm, hand, wrist, metacarpal and fingers.

1. The object of the puncture is the intermediate vein of the elbow. It is not accompanied by skin nerves, it is an anastomosis of the medial and lateral subcutaneous veins of the hand. The imposition of a tourniquet in the upper third of the shoulder (to avoid infringement of the radial nerve, the tourniquet is applied to the towel).

2. Medial-brachial muscle, lateral-brachial muscle and long radial extensor of the hand. It is necessary to check the function of the radial nerve, its surface and deep branches.

3. The posterior part of the capsule of the elbow joint laterally from the elbow process and the tendon of the triceps muscle is not covered with muscles (layers: skin, subcutaneous tissue with superficial fascia, own fascia, joint capsule), so that when pus accumulates in the joint, protrusion is formed on the sides of the elbow.

4. A slight detachment of the skin flap over a significant period is explained by the weak expression of the surface fascia and loose connection with its own fascia.

5. Anterior fascial sheath of the deep flexor of the fingers long flexor of the thumb, the rear - fascia of the square pronator. External reference points are the ulna and radius.

6. With this type of wound, it is possible to cross the skin, subcutaneous tissue, Palmar aponeurosis, common finger neurovascular bundles (index, middle, ring finger, little finger), tendons of the superficial and deep flexors of the fingers (index, middle, ring finger, little finger), Palmar metacarpal arteries; deep branch of the ulnar nerve. The contractility of the proximal and distal ends of the tendons is due to the flexion or extensor position of the fingers of the hand at the time of injury. The proximal ends of the tendons contract over a long period due to muscle contraction.

7. In front-its own fascia, medial-lateral intermuscular septum, behind-a short muscle that removes the thumb of the hand, laterally-continues to the synovial vagina of the tendon of the long flexor of the thumb, distally - to the first interdigital fold, where it communicates with the subcutaneous tissue of the rear of the hand. The incision can not be continued in the proximal third of the skin fold of the Tenar ("forbidden" zone of the Ditch) ,because there is a risk of damage to the motor branch of the median nerve.

8. "U" - shaped phlegmon develops with inflammation of the radial synovial SAC (synovial vagina of the tendon of the long flexor of the thumb) and the elbow synovial SAC (synovial vagina of the little finger flexors with the proximal part of the common synovial vagina of the tendons of the index, middle and ring finger flexors). In 10% of cases, the ulnar and radial synovial bags communicate with each other, creating a prerequisite for the development of " U " - shaped phlegmon.

9. Subcutaneous fat of the Palmar surface of the finger is devoid of subcutaneous fascia. It has a cellular structure due to connective tissue strands running from the papillary layer of the skin to the periosteum or to the fibrous vagina of the tendon. Due to the high pressure in the focus of inflammation and toxic damage to the nerve endings, a pronounced pain syndrome develops, and circulatory disorders cause dry

necrosis of the subcutaneous tissue.

10. Most of the lymph vessels from the thumb, index and middle fingers open directly into the apical axillary lymph nodes.

11. The following formations are damaged: skin, pancreas, superficial fascia, own fascia of the forearm, vessels and nerves, muscles: 1-humerus muscle, round pronator, radial flexor, long Palmar muscle, elbow flexor; 2 - superficial flexor of the fingers; 3 - deep flexor of the fingers and long flexor of the thumb; 4 - square pronator. You need to perform gastrectomy for gastric cancer: to verify the integrity of the tendon of the long flexor I finger; to perform tendon seam Rozovu or Cuneo. Suture the wound. Perform a plaster immobilization in flexion.

12. The layers of the tendon of the flexor III, IV fingers, vessels, nerves. Tactics - PST wounds, performing tendon suture Rozovu or Cuneo on the tendon of the flexors of the fingers IV. 3) layer-by-layer seams; 4) plaster immobilization in flexion.

Lesson№4.

Topographic anatomy of the gluteal region, hip joint, hips.

1. The gluteus big through the processes of the gluteal fascia is divided into chambers, resulting in suppurative processes have been limited, without considerable tension of the tissues and severe pain.

2. You can not, because there is a shift of the gluteal fold downwards. The fold does not correspond to the lower edge of the large gluteal muscle (crosses it at an acute angle). This fold is formed due to the thinning of the proximal end of the broad fascia of the thigh, on top of which the subcutaneous fat forms a kind of arch.

3. Intramuscular injections are performed in the upper lateral quadrant, because there are no neurovascular bundles. The first technique: a horizontal line drawn through a large spit, and a vertical line drawn through the sciatic hillock, the gluteal region is divided into four quadrants (Department). The second technique: the brush, opposite the gluteal area, with the maximum allotted thumb is placed so that the thumb is at the level of the large spit. The upper lateral part will be limited to the index and thumb.

4. 1) The parts of the upper and lower gluteal artery outside the pelvis is short; the proximal ends of these arteries are reduced in over - and podkrucheno holes, the distal - in the thickness of the muscles. Gluteal arteries have the form of "Karelian birch" (short section of the trunk, creeping direction of branches); 2) большое количество анастомозов; 3) the search for the source of bleeding is difficult - the gluteal vessels lie under the deep plate of the gluteal fascia in a large mass of muscles and loose fatty tissue (deep, inaccessible wound). In case of a failed attempt of hemostasis, the wound should be made operative access (N. I. Pirogov) to the side wall of the pelvis and bind the internal iliac artery (gluteal arteries are branches of the internal iliac).

5. The Roser-Nelaton line is a line connecting the upper anterior iliac spine to the apex of the sciatic hillock with a slightly bent hip in the hip joint. The tip of the large roasting-jack is on the Roser-Nelaton line. With a fracture of the neck of the hip and dislocation in the hip joint, the tip of the large spit will be upward from the Roser-Nelaton line.

6. The first "weak" place of the capsule of the hip joint is in the posterior (in the sciatic-femoral ligament), where there is a protrusion of the synovial membrane and the tendon of the external locking muscle passes. The second-in the anterior part - is the message of the joint cavity with the iliac crest bag.

7. At 2 cm medially from the middle of the inguinal ligament (the point of determining the pulse on the femoral artery). The femoral vein occupies a medial position relative to the artery.

8. 1) the femoral ring occupies the medial third of the vascular lacuna. It is made by adipose tissue and lymph node Rosenmuller-N. And. 2) the femoral septum separating the abdominal cavity from the thigh (part of the transverse fascia) has holes that pass lymphatic vessels; 3) from the parietal peritoneum to

the femoral ring corresponds to the femoral fossa; 4) down from the inguinal ligament there is a subcutaneous slit bounded by the Crescent edge of the broad fascia of the thigh. The walls of the femoral canal: anterior-Crescent edge of the broad fascia (surface sheet of the broad fascia of the thigh); posterior-medial-comb fascia (deep leaf); lateral-fascial vagina of the femoral vein.

9. In the upper half of the femoral triangle, the femoral vein is located medially in relation to the artery of the same name; closer to the top-the vein is medially and posteriorly; in the middle third of the thigh - the vein is located posteriorly from the artery.

10. The gluteal fascia has superficial and deep leaves forming two lodges. In the surface bed is a large gluteus muscle and branches of the upper gluteal arteries and veins. From the superficial leaf of the fascia to the deep leaf depart connective tissue septum that separates the gluteus Maximus muscle on an isolated camera.

11. Tuberculous cold abscess extends to the anterior region of the thigh through the muscular lacuna in the course of the big lumbar muscle with the projection of the protrusion on the lateral half of the inguinal ligament.

12. With a fracture of the femur in the middle third, it is possible to damage the perforating arteries-branches of the deep femoral artery: 1st-departs at the level of the small trohanter; 2nd - at the proximal end of the long adductor muscle; 3rd-continuation of the deep femoral artery. The lumen of the damaged arteries gapes due to the fixation of their outer shell along the edges of the holes in the tendons of the adductor muscles through which they pass into the back of the thigh. The arteries penetrate the tendons near the place of attachment to the rough line of the thigh.

Lesson№5.

Topographic anatomy of the knee,knee-joint ,shin ,ankle joint, foot.

1. Behind the tendon of the quadriceps muscle of the thigh is the upper inversion of the knee joint, extending 5-6 cm up from the patella. The level of the position of the arch of this inversion determines the lower border of the anterior thigh area and the upper border of the knee area. X-ray examination and puncture of the joint allowed to establish the communication of the wound with the joint cavity.

2. To avoid damage to the common peroneal nerve adjacent to the medial surface of the tendon of the biceps muscle of the thigh (the upper lateral wall of the popliteal fossa). In case of emergency rear lateral contraditory,in order to exclude damage of this nerve also form a protrusion of soft tissue that provides the offset in the direction of the nerve is a landmark for the incision.

3. The arterial network of the knee joint: from the femoral artery: 1) the descending branch of the lateral, enveloping thigh, artery; 2) the descending artery of the knee;from the popliteal artery: 1) the medial and lateral upper; 2) the middle; 3) the medial and lateral lower arteries of the knee; from the anterior tibial artery - the return branch; from the posterior tibial artery - the enveloping branch. In this case, the upper and lower medial and lateral arteries of the knee on the anterior surface of the joint form superficial and deep arterial networks.

4. Damage to the common peroneal nerve adjacent to the fibula. Branches of this nerve: 1) deep peroneal - innervates the muscles of the anterior muscular-fascial bed of the tibia (extensors), 2) superficial peroneal - lateral muscular - fascial bed. With the loss of function of these muscle groups, antagonist muscles (flexors) determine the appropriate position of the foot.

5. The posterior tibial artery, two accompanying veins and the tibial nerve are located in the ankle channel (nerve - laterally, artery - medially). The anterior wall of this channel is the posterior tibial muscle, the medial one is the long flexor of the fingers, the lateral one is the long flexor of the thumb, the posterior one is the soleus muscle. The projection of the posterior tibial artery corresponds to the line connecting the point 1 cm posterior to the medial edge of the tibia (above) and the middle of the distance between the heel (Achilles) tendon and the medial ankle (below).

6. The possibility of an open fracture of the Shin bones is due to their close position to the skin. The density of its own fascia (aponeurosis) and its fixation to the anterior edge of the tibia, as well as the lack of expression of subcutaneous fat determine the mobility of the skin.

7. The spread of purulent processes occurs from the middle fascial bed of the sole to the plantar canal( proximal part of the middle special bed), then to the heel canal, from where the pus through the medial ankle canal can spread to the ankle canal.

8. 1) the most severe complication of the phlegmon of the middle fascial bed of the sole is the spread of the plug along the medial ankle canal (along the tendons of the flexors and the lateral plantar vascular-nerve bundle) into the deep cellular space of the posterior region of the Shin; 2) along the worm-like muscles and the oblique head of the muscle leading to the thumb, pus can spread to the interdigital spaces, to the lateral and rear surfaces of the fingers; 3) in the case of purulent fusion of the anterior part of

the plantar aponeurosis may be formed subcutaneous abscess; 4) the spread of purulent streaks on the dorsum of the foot in the course of the deep plantar branch of the back artery of the foot (in the first interplusar period).

9. To ensure better wound healing, before suturing, it is recommended to excise the swelling subcutaneous tissue on the edge of the skin wound. The swelling of subcutaneous tissue is due to the fact that it is enclosed in cells between the skin and plantar aponeurosis (expressed cellular structure of subcutaneous fat is determined by the support and spring functions of the foot).

# Lesson№6.

## Operations on vessels, nerves and tendons of the upper and lower limbs.

1. Clickography (a kind of selective angiography) - x-ray contrast study of the basin of the celiac trunk through the puncture and catheterization of the femoral artery by Seldinger method.

2. In direct embolectomy, the artery is isolated and opened (arteriotomy) above the site of embolization. Using longitudinal (more common) or transverse (rarely) incision of the wall of the arteries the embolus is removed in the following ways: 1) "squeezing" to a section of the artery with your fingers (with a little amble); 2) leaching of the jet of blood (vascular clamp is removed, the superimposed proximal to the point of arteriotomy, after which the embolus begins to "born"); 3) large embolus removed with a Fogarty probe, or a blunt metal spoons.

3. For gunshot wound of the elbow joint area has been damaged: the skin, subcutaneous fat, fascia, muscles: biceps, triceps, elbow muscle, the supinator, the deep flexor of finger and ulnar flexor of the wrist. The medial head of the triceps muscle under the fascia of the shoulder is the ulnar nerve and ulnar artery, the medial epicondyle of the humerus. Loss of sensitivity IV, V fingers due to injury of the ulnar nerve. The surgeon on duty must perform PHO wounds, wound revision, suturing of the damaged ulnar nerve, the establishment of drainage tubes, layer-by-layer suturing of the wound, the imposition of an aseptic bandage, plaster immobilization.

4. With indirect (retrograde) embolectomy, the thrombus is removed from the hard-to-reach artery through a superficially located artery. The thrombus from the popliteal artery is removed by a Fogarty catheter (at the end has a balloon), which is carried through the posterior tibial artery (exposed in the medial ankle canal).

5. For the final stop of bleeding are possible: 1) ligation of the artery in the wound; 2) ligation throughout, i.e. above the wound site.

6. Damaged: skin, subcutaneous fat, superficial fascia, and Achilles tendon. Tactics: the implementation of the tendon suture to the damaged bundles of the Achilles tendon. Plaster immobilization.

7. Initially, the proximal end of the artery is tied with two ligatures: Central and peripheral. Peripheral ligature is set at a distance of 0.5-1.0 cm from the end of the artery in order to avoid slippage of the Central ligature due to pulsation of the artery. Peripheral ligature can be installed by flashing of the arterial wall and the subsequent tying of surgical knot (piercing ligature). After that, the peripheral end of the artery is tied with one ligature. To ensure the reliability of hemostasis, the wound is drained with tampons and after 2-3 min., in the absence of bleeding, the ends of the ligatures are cut off.

8. Damaged: skin, pancreas, fascia, nerves, blood vessels, muscles. It is necessary to check the sensitivity in the toes. To perform a gastrectomy for gastric cancer. Given the rupture of the common peroneal nerve, it is necessary to perform a nerve suture. Layer-by-layer wound suturing.

9. The assistant holds the first node with an anatomical tweezer (so that it does not weaken) until the surgeon ties the second one.

10. It is necessary to perform radiography of the left thigh in 2 projections. When verifying a femoral fracture-skeletal traction for the tuberosity of the tibia. Open reduction, internal fixation.

11. It is necessary to perform radiography of the forearm with the capture of the elbow joint in 2 projections. Preliminary diagnosis: comminuted fracture of the ulna at the border of the upper third and middle third. Head fracture of the radial bone with displacement. Possible damage to the ulnar nerve and the superficial branch of the radial nerve.

12. To avoid screwing the outer shell into the lumen when stitching the artery wall.

13. The purulent process can be localized in the lateral, medial and median cellular spaces. The sole phlegmons can extend to the rear of the foot-along the deep branch of the rear artery of the foot; into the heel canal-through the medial ankle canal; into the deep tissue of the Shin along the course of the posterior tibial vessels and nerves; into the fiber of the interdigital spaces. The I-th interdigital interval innervates the profundus. Incisions for opening of the sole flegmon are carried out from the middle of the transverse line drawn on 4-5cm anteriorly from the posterior edge of the calcaneus to the III interdigital interval (the lateral bed is opened).

14. For the convergence of the ends of the artery and fixing them in this position; transfer of the wound of the artery in the horizontal plane; eversion of the wall of the ends of the artery to map their internal shells ("intima-to-intima", to ensure athrombogenic vascular suture); allow rotation of the artery, the axis, forming a seam along three edges.

15. In case of failure of the valves of communicant veins, their ligation is performed in order to eliminate the pathological reflux of blood from the deep veins of the lower leg to the surface.

16. The nerve is exposed above and below the scar, taken on rubber strips-holders and begin to allocate it from healthy areas in the scar area. The conductivity of the nerve is checked by electrophysiological method.

17. "P" shaped epinephelinae the seams Naattu. When applying these seams, there is a danger to capture the bundles of nerve fibers into the seam.

18. With large defects, the nerve ends can be brought closer together by changing the position of the limb (with the suture of the sciatic or median nerve, the limb is bent). When the ulnar and radial nerves are sutured, they are moved from the posterior to the anterior region. After narratee limb is fixed in the position given to it a plaster cast for 3-4 weeks.

# Lesson№7.

## Operations for purulent inflammatory diseases of the upper and lower limbs.

1. There is a danger of more severe forms of panaritium: bone, joint, tendon.
2. As with subcutaneous panaritiums. The surgeon should apply a "club-shaped" incision, carry out an audit of the purulent focus (is there a necrosis of the subcutaneous tissue?) and provide drainage.
3. The subcutaneous tissue of the rear of the brush is represented by a loose connective tissue. Lymphatic vessels of the palm of the hand pass to the rear of the brush.
4. Neutral line (mid-side). The incision is made on the anterior-lateral surface of the phalanx, without continuing it to the interphalangeal joints"Club-shaped" incision on the anterolateral surface of the phalanx.
5. Arcuate or linear incision along the outer edge of the nail plate in the proximal direction.
6. Perform two incisions (1-1. 5 cm long) from the lateral edges of the nail plate in the proximal direction. Formed skin flap recline in the proximal side (to its base). Discovered necrotic tissue and granulation removed with a sharp spoon. In the case of the spread of pus under the nail plate part of it, exfoliated pus, removed, then remove the granulation. Under the flap is laid a strip of rubber glove and set dressing.
7. Trepanation of the nail over the purulent focus.
8. Wedge-shaped excision of the nail plate over the purulent focus.
9. Removing the nail plate.
10. Distal-to the proximal half of the nail phalanx. Proximal-to the level of the metacarpal head.
12. The joint capsule is taken into the fold, pull it and cut with scissors.
13. Common fibula. From lateral parapatellar cut through the joint cavity is carried out the forceps, which form a protrusion of soft tissue in the posterolateral section of the hip. This technique provides a displacement in the direction of common peroneal nerve and is the benchmark for applying contraditory.

Lesson№8.

## Operations on long tubular bones and joints of the upper and lower limbs. Amputation and assertequal.

1. 1) careful comparison (reposition) of bone fragments; 2) keeping them in the correct position for the entire period of the formation of bone blister.

2. 1) ensuring the contact of bone fragments and keeping them from shifting; 2) exclusion of interposition (the presence between the fragments of fascia, muscle, fatty tissue-the cause of the formation of a false joint); 3) ensuring good blood supply to the ends of bone fragments (removal of sharp uneven edges); 4) periosteum on the edge of the fragments should be whole; 5) prevention of hypocalcemia (correction of disorders of thyroid and parathyroid glands).

3. Fractures not amenable to one-stage reduction, and failure to hold fragments after one-stage reduction with a plaster bandage. Two methods of skeletal traction: holding the metal needles and the use of metal terminals in the area metafit (most often in the area of the condyles of the femur, tibial tuberosity, calcaneal tuberosity, the olecranon).

4. При поднадкостничной резекции кости надкостницу смещают по линии разреза в сторону здоровых отделов кости, при чреснадкостничной - к пораженному участку с целью удаления кости вместе с надкостницей, а при злокачественных опухолях - вместе с прилегающими мышцами.

5. In the femur below the level of the small spit cutter make a through hole. Accordingly, the middle of this hole intersect the bone (Dahlgren forceps, Liston, wire saw Olivecrona) with the formation of saddle-shaped surfaces of the proximal and distal fragments. The lateral edge of the proximal fragment (spike) is placed in the recess of the distal fragment.

6. On the lateral surface of the thigh up from the alleged line of osteotomy, starting from the large spit cutter produce a rectangular bone graft fence (6*1.5 cm). At the level of the lower edge of the formed defect, the femur is crossed. The lower end of the bone graft is inserted into the medullary canal of the distal process. The limb is removed, the upper end of the graft is placed in the defect (after the graft is taken) of the proximal fragment.

7. Oblique or "Z" - shaped osteotomy is performed followed by gradual (1 mm per day) stretching of bone fragments with the help of compression-distraction apparatus (5-7 days after applying the apparatus).

8. Achieved the best conditions for the fixation of bone fragments and the support.

9. 1) operational access through the intermuscular interval; 2) away from large neurovascular bundles; 3) in the limb with the smallest thickness of the muscle layer.

10. Osteoplastic amputation of the tibia by N. I. Pirogov. Closing the sawdust of the tibia with a flap, which includes the heel tubercle. Provides a natural support in the form of heel hill and covering his skin.

11. The front flap should be longer. It consists of skin, subcutaneous tissue with superficial fascia and its own fascia; rear - of its own fascia of the tibia (aponeurosis). The back flap is hemmed to the base of the front flap (own fascia of the back region of

the Shin with its own fascia of the front area), then the front flap is laid and the skin seams are applied.

12. "Conical" stump is a consequence of imperfection of the technique of covering bone sawdust with soft tissues, when the bone stump protrudes from scarred, often ulcerating soft tissues. Excision of scar and creation of excess soft tissue to cover the bone stump.

13. 1) the training of the prosthetic later, 1 week after healing of the amputation stump (according to some authors - up to complete wound healing); 2) the permanent prosthesis - up to 1 month after amputation; 3) change of permanent prosthesis - up to 6 months after amputation (by this time there is a "maturation" of the stump, that is, atrophy of groups of muscles and adipose tissue - the stump becomes smaller in volume).

14. During the amputation, the main vessel was tied too close to the bone cut. In order to prevent the development of such complications as "pulsating stump", it is recommended to tie the main vessel 4-5 cm above the bone cut.

15. It is necessary to take into account the fact that the fibula grows faster than the tibia, so the fibula must be cut 3 cm above the level of the fibula. During the processing of the periosteum is to elect aperistalsis method, i.e., 1-2 mm of bone remain without periosteum.

16. During this period, she needs a temporary prosthesis. After 6 months. when the stump is formed, it will be possible to choose a permanent one.

Lesson№9.

Topographic anatomy and operative surgery of the brain Department of the head.

1. To ensure the wound is aseptic. Treatment of the surgical field with ammonia (ether or gasoline) allows to degrease the skin of the frontal-parietal-occipital area, which contains a large number of sebaceous glands.
2. Occipital (occipital artery and vein and large occipital nerve). Neurovascular bundles are directed radially (from the periphery of the region to the parietal hillock). The arteries form a large number of anastomoses both within one half of the region and with the arteries of the other half and branches of the internal carotid artery, which ensures good tissue regeneration. The wall of the artery is fixed by connective tissue partitions (from the skin to aponeurosis), therefore, when the artery is cut, they gape (do not shrink).
3. The presence of 3 layers of fatty tissue in the soft tissues of the cranial vault causes the formation of 3 types of hematomas. In the 1st victim, the hematoma is localized in the subcutaneous tissue, in the 2nd-in the subaponeurotic, in the 3rd - in the subarticular.
4. Flat, spilled, without clear boundaries, fluctuating. Subarticular hematoma is limited by bone sutures (attachment of the periosteum at the seams).
5. In the area of the mastoid process is a permanent venous graduate (mastoid emissary vein), connecting the superficial veins with the transverse or sigmoid sinus of the Dura mater.
6. Examination: an overview x-ray of the skull in 2 projections to determine the presence, size and position of bone fragments. Treatment - primary surgical treatment of the wound. To stop bleeding from the spongy substance, irrigation of the wound with H202 solution or rubbing of sterile wax paste is used. To stop bleeding from the sinuses of the Dura mater, you can perform a tamponade, suture or bandage the sinus.
7. Within the cranial vault, the Dura mater is relatively loosely connected to the bones; epidural space is formed between them (a microscopic gap consisting of a set of interconnected cells and channels delimited by connective tissue membranes). Sources hematomas: the trunks and branches of the meningeal arteries, diplomatic and emissary veins, sinuses of the Dura mater, arachnoid, (phynova) granulation. Compared with the "venous-capillary", "arterial" hematomas are formed quickly, have a large volume, previously manifested clinically.
8. Different radii of curvature and thickness of the outer and inner bone plates. The inner plate has a smaller radius, so it experiences a greater load and is damaged in a larger volume.
9. This child has craniostenosis, which led to intracranial hypertension, which in turn led to the phenomenon of stagnant optic nerves. Since the failure to eliminate intracranial hypertension stagnation leads to the development of secondary atrophy of the optic nerves, vision reduction up to blindness, urgent surgical treatment is indicated in the age of up to three years. There are 4 types of interventions in craniostenosis: linear craniotomy, circular craniotomy, fragmentation of the cranial vault, two-sided flap craniotomy.
10. With a fracture of the skull base, the line of which passes in the anterior cranial

fossa, infection of the meninges from the sinuses of the ethmoid bone occurs.

11. Trauma can cause epidural, subdural, or subarachnoid hemorrhage. In this case, the patient has a subdural hemorrhage, which on CT usually looks like a long, thin formation, and epidural hematomas look shorter, but wide, often biconvex formation.

12. Conservative methods of treatment for hydrocephalus ineffective. It is permissible to prescribe dehydration therapy at the stage of preparation for surgical treatment. With occlusive hydrocephalus, as in this child, it is shown that shunting operations are performed.

13. Fracture of the skull base in the middle cranial fossa. Fracture of the temporal bone pyramid with rupture of the tympanic membrane. Liquor fistula, damage to VI, VII, VIII cranial nerves. The emergence of meningitis (possible abscess of the temporal lobe of the brain).

14. The brain water pipe is approximately 1.5-2.0 mm in diameter and connects the third ventricle to the fourth ventricle. If this part of the ventricular system is visible on the sagittal MRI slice, the slice passed through the midline.

15. Occlusion (Sylvius) aqueduct or holes Magendie (midline) and Buns (side). Excessive content of tissue fluid in the substance of the atrophied brain due to its impregnation with a large amount of cerebrospinal fluid from the ventricular system.

16. Given the history of the disease in this patient may hemorrhage in the hemisphere of the brain. Visual impairment may be due to the localization of the focus in the pool of the posterior cerebral artery.

17. Probably the women of the circle of Willis is not closed. Otherwise, this circle would compensate for the lack of blood flow through the left internal carotid artery.

18. To remove the fragments of the inner plate (the damage zone is 2-4 times larger than the outer one), the defect of the outer plate is expanded with Luer pliers. Hemostasis is provided by crushing the bone (when aligning the edges of the wound with wire cutters), 3% hydrogen peroxide solution, rubbing the hemostatic paste into the bone wound.

19. Gaping a defect in two or three sinus walls. The sinus is bandaged on both sides of the wound. The ligature is carried out around the sinus with a large round needle. Ligation of the anterior third of the upper sagittal sinus (as well as transverse and sigmoid), as a rule, is not accompanied by a violation of venous outflow. After the ligation of the upper sagittal sinus in the middle third in 50%, and in the back third-in 75% of cases, there is a rapid increase in traumatic brain edema with impaired cerebral circulation and a fatal outcome.

20. Intact Dura mater is opened in the syndrome of compression of the brain (intracranial hematoma and extensive contusion foci). The unjustified opening of the Dura mater causes the transfer of the non-penetrating craniocerebral wound into the penetrating one; at the same time, the danger of the infection spreading into the sub-renal space increases (meningoencephalitis).

21. To substantiate the rational operative access (over the place of localization of the pathological focus in the area with spherical configuration, where one of the layers of the wound is the bone - unyielding layer). Since this scheme allows to determine the projection of the trunk and branches of the middle meningeal artery, major furrows, ventricles and arteries of the brain for operative access with the least injury.

22. To the periphery of the region (to the zygomatic arch), so that the "leg" includes the neurovascular bundle (superficial temporal artery and vein, ear-temporal nerve). The finger pressure wound edges soft tissues to the bone, electrocautery, ligation.

23. For the prevention of herniation of the brain stem in the foramen Magnum.

24. The cut of the bone is made at an angle of 45° in order to create a support for the periosteal-bone flap when it is returned to its place.

Lesson №10

Topographic anatomy and operative surgery of the facial part of the head.

1. The skin of the upper lip contains a large number of sebaceous glands. With a boil, thrombophlebitis and thrombosis of the cavernous sinus of the Dura mater can develop according to the scheme: the upper lip vein-the facial vein and its initial section at the medial edge of the eye slit-the angular vein-the upper and lower eye veins - the cavernous sinus.
2. Trigeminal neuralgia.
3. Purulent occlusion in the anterior part of the parapharyngeal space (occurs 4 times more often than the breakthrough of pus into the external auditory passage) through the pharyngeal process of the parotid gland (the fascial capsule is poorly developed, in addition, between the gland and its capsule there is fiber that causes the accumulation of pus).
4. In this patient, tonsillitis was complicated by a paratonsillar abscess. Surgical treatment is indicated.When opening and draining a paratonsillar abscess, it is necessary to remember about the danger of damage to the internal carotid artery, which is located laterally. Therefore, the incision must be made strictly vertically and from the medial side.
5. The abscess that is behind the pharynx must be distinguished from the incisor in tuberculous osteomyelitis of the cervical vertebrae, when the opening is contraindicated, because in the future a fistula will be formed. The occipital abscess must be opened, while the length of the tip of the scalpel should be limited to 1 cm. After opening the abscess, the patient's head should be quickly tilted forward and down to prevent the pus from flowing into the respiratory tract.
6. "The neutral zone" - zone of the face where there are no branches of the facial nerve. With an incorrectly performed incision, paralysis of the facial nerve, salivary fistula is possible.
7. The incision for opening the bed of the parotid salivary gland is made behind the corner of the lower jaw and parallel to it. The proximity of the trunk and branches of the facial nerve requires, firstly, to produce no closer than 1.5 cm from the edge of the lower jaw, and secondly, the scalpel is used only for cutting the skin and fascia, and then use a hemostatic clamp.
8. The optimal time for PHO wounds-24 hours, however, can be delayed to 36h. Suturing facial wounds should be performed without excision of the wound edges, especially if they are located at the edge of natural holes, otherwise, it may be offset and deformation.
9. Alcoholization of the first branch of the trigeminal nerve in the supraorbital foramen is made in the middle of the upper edge of the orbit. Alcoholization of the second branch at the lower orbital orifice is made 1.5-2cm down from the middle of the lower edge of the orbit. Alcoholization of the third branch at the chin or at the mandibular opening is made at the lower edge of the lower jaw by 1.5-2cm anteriorly from its angle.
10. The patient T., is shown to perform: 1)heyloplasty to restore the upper lip, the circular muscle of the mouth, the red border, the skin of the lip; the creation of the

vestibule of the mouth, the formation of the nasal passage, the correction of the deformation of the wing of the nose and nasal septum. Deadlines cheiloplasty to SX years;2)uranoplasty to correct cleft palate, elongation of the soft palate, narrowing of the middle Department of the pharyngeal ring. Deadlines to Zh years. In a Year begins to form it, so to avoid the formation of nasal and. atypical pronunciation features, vices must be eliminated by the age of 3.

11. Facial nerve and its branches (temporal, zygomatic, buccal, marginal branch of the lower jaw, cervical). Electrophysiological. Ligation of the external carotid artery (in carotid triangle).

12. Case the parotid glands form chewing, medial pterygoid, double-breasted, muscules sternocleidomasteideus, the muscles of the "anatomical bouquet" (starting from the subulate process), the branches of the lower jaw and its fascial capsule. In the upper-posterior (external auditory canal) and medial (pharyngeal process) parts it is poorly developed. The parotid gland is firmly connected to the capsule (fascial septum penetrates into the thickness of the gland), the submandibular gland is loose (between the capsule and the gland there is cellulose).

13. The maxillary sinus communicates with the middle nasal passage through the maxillary cleft, located under the middle nasal shell. The cleft is located in the medial wall above the bottom of the sinus, which makes it difficult to separate outflow. In inflammation, due to edema of the mucous membrane of the middle nasal shell, the maxillary cleft can be closed.

14. Zev - the boundary of the oral and nasal cavities with the nasopharynx: soft palate with the uvula, Palatine arch (palatal-lingual - front, velopharyngeal - back), the tongue, the back of the throat that contains the lymphoepithelial ring consisting of two palatal (between palatal handles), two tube (the pharyngeal openings of the auditory tube), pharyngeal and lingual tonsils. The frequency of inflammation of the tonsils is due to the fact that they are the first barrier to infection from the mouth and nose to the nasopharynx. The pharyngeal tonsil is called an adenoid..

15. The thickness of the compact plate separating the alveoli of the 7th upper tooth from the maxillary sinus often does not exceed 0.3 mm (sometimes can be separated from the sinus only by the mucous membrane). This feature determines the occurrence of foreign bodies (tooth root during tooth extraction), cysts and purulent inflammation of the sinus of odontogenic origin.

# Lesson №11.

## Topographic anatomy. Topographic anatomy of the neck.

1. The patient has a phlegmon retrovirales spaces (on the sides and behind the esophagus). Timely and wide opening of the ulcer can prevent the development of secondary mediastinitis. Opening of the phlegmon is performed along the anterior edge of the left sternocleidomastoid muscle.
2. Abscess is localized between the superficial and deep sheets of the own fascia in above the sternum between aponeurotic space. For opening ulcers use transverse or oblique incisions above the site of fluctuation.
3. Based on the principle of intraoperative plasticity. In cancer of the lower lip, submandibular lymph nodes (which are regional) are affected, the middle group of which is located in the thickness of the submandibular gland. In the process of fascial-box excision of fiber there is a need for ligation of the facial veins and arteries; during the operation, there is a danger of injury to the hypoglossal nerve.
4. The recurrent laryngeal nerve was damaged during the operation. There are 3 zones of the greatest danger of damage to the laryngeal nerve: 1)at the lower pole, it can go lateral; 2)at the intersection of the recurrent laryngeal nerve with the lower thyroid artery; 3) at the level of 2-ix> or 3-th upper tracheal ring, where the thyroid gland is attached to the larynx by a significant portion of connective tissue, called the supporting ligament of the thyroid gland. Here the recurrent laryngeal nerve lies in close contact with the thyroid gland.
5. Ligation of the external carotid artery throughout (in the carotid triangle) in this situation is produced for hemostasis. The external carotid artery in the carotid triangle is projected along the bisector of the angle formed by the sternoclavicular-mastoid muscle and the upper abdomen of the scapula-lingual muscle. An incision 6-8 cm long is made from the angle of the lower jaw along the anterior edge of the sternocleidomastoid muscle so that its middle corresponds to the upper edge of the thyroid cartilage. To distinguish the carotid artery from the internal one, the following signs are used:
   1) a sign of the "anatomical" paradox (mismatch with the position of the name of the artery): external-is located inside and in front, internal-outside and behind;
   2) a sign of branches-from the external carotid artery leaves the anterior group of branches (upper thyroid, lingual, facial), internal-branches does not give;
   3) the external carotid artery is crossed by the hypoglossal nerve and the common facial vein;
   4) with finger pressure of the external carotid artery, there will be no pulse on the superficial temporal and facial arteries.
6. In the early postoperative period after the lower tracheostomy may develop suppuration in the subcutaneous, or in above the sternum inter aponeuroticae. In above the sternum space is limited to the 2nd and 3rd fascia of the neck pretracheal-parietal and visceral leaflets of the 4th fascia of the neck. A subcutaneous phlegmon may spread to the anterior chest wall, in above the sternum inter aponeuroticae - in blind bag (Gruber) between 2nd and 3rd fascia posterior to the sternocleidomastoid muscles and in her case, pretracheal in anterior mediastinum.

7. In this patient, when injuring the middle part, an audit of the wound and the main neurovascular bundles on the side of the damage should be performed. In case of injury in the upper part of the neck, it is necessary to perform arteriography. If damage to the main vessels is detected, then the intersection of the branch of the lower jaw is necessary to create adequate access to the vessels. When wound to the neck at the bottom also perform pre-angiography. To create access to the proximal vascular perform thoracotomy.

8. In some patients with thyroid cancer, the primary tumor is too small and is not detected during the examination. It is possible that metastases of highly differentiated papillary or follicular cancer in the lymph nodes may be its only clinical manifestation. According to the histological structure, they are so similar to normal thyroid tissue that such metastases were previously called " lateral aberrant thyroid glands».

9. The only reliable sign that allows to identify the external carotid artery is the deviation of branches from it, first of all-the upper thyroid artery.From the internal carotid artery on the neck, no branches depart.The damaged external carotid artery can be bandaged. The wound of the common carotid and internal carotid artery must be sutured. If suturing is dangerous in relation to the narrowing of the lumen, it is necessary to sew a "patch" of autogeny.

Lesson №12.

Operative surgery of the neck. Operative surgery of neck organs.

1. The inter-aponeurotic breast space from below is limited by the jugular tenderloin of the sternum, from the front by the second fascia of the neck, attached to the anterior surface of the sternum and sternoclavicular joint, from behind by the third fascia, attached to the posterior surface of the sternum. Pus from this space can spread into a blind bag lying posteriorly from the sternocleidomastoid muscle or into the case of this muscle. The purulent cavity is opened by an arcuate incision 1 cm above the jugular tenderloin of the sternum or by a vertical incision along the midline (in this case, the jugular venous arc may be damaged).

2. Lymph from the skin of the lower part of the face is removed in the superficial submandibular lymph nodes. Lisa M. had a complication of the infected skin wound with lymphangitis, lymphadenitis, purulent melting of the lymph node with the transition of the purulent process into the subcutaneous tissue of the submandibular triangle. When opening the submandibular phlegmon, they retreat 1.5-2 cm downwards from the lower edge of the lower jaw in order to avoid damage to the marginal branch of the facial nerve.

3. In order to preserve the function of the thyroid gland with Subtotal resection, 1-5g of its parenchyma should be left. The most common complications area: damage to the lower or recurrent laryngeal nerve, damage or removal of the parathyroid glands.

4. Foreign bodies of the cervical esophagus are more often localized at the level of its first anatomical narrowing (CVi) in 15-20 cm from the upper incisors. Operative access to the cervical part of the body is carried out by incision (8-10 cm) along the anterior edge of the left sternocleidomastoid muscle, starting from the jugular tenderloin of the sternum (the trachea displaces the esophagus to the left side). The esophagus is located between the trachea and the spine (the main neurovascular bundle of the medial triangle of the neck crochet Farabee slip in the lateral direction).

5. When mobilizing the posterior surface of the thyroid gland at the lower pole, the recurrent laryngeal nerve (the nerve forms a cross with the lower thyroid artery) was dissected or crushed by a hemostatic clamp. This complication is excluded at Subtotal subfascial resection of the thyroid gland according To O. V. Nikolaev-the gland is exfoliated from its own capsule while maintaining the posterior parts of the lower pole. Keeping the capsule and the lower pole of the organ, it is possible to avoid damage to the parathyroid glands, esophagus, common carotid artery and recurrent laryngeal nerve.

6. Acute respiratory failure occurred due to acute edema of the laryngeal mucosa (most pronounced in the interstitial region) of toxic (infectious) origin. The child is shown a lower tracheostomy, which requires the following special tools: two farabef hooks, a small blunt hook for the displacement of the isthmus of the thyroid gland, two single-tooth hooks, a tracheal dilator (truss, Laborde), a tracheostomy cannula (Luer, Björk). When carrying out tracheostomy, complications may occur: bleeding and air embolism, "non-disclosure" (introduction of the cannula into the submucosal layer) and "re-opening" of the trachea (wound of the esophagus), wound of the common carotid artery and the plechegolus trunk, damage to the isthmus of the thyroid gland,

subcutaneous emphysema, loss of the cannula from the trachea.

7. Lower tracheostomy can damage the inferior thyroid artery, the left common carotid artery, and even the aortic arch (in children and women). In order to prevent injury to these arteries should: ensure the correct position of the patient on the operating table (roller height of 12-15 cm under' shoulder blades, head thrown back, external reference points correspond to a straight line located on the median line); carefully separate from the pretracheal tissue of the anterior wall of the trachea (when accessing the trachea internal reference point is the" white line " of the neck); fix the trachea and make sure there are no large blood vessels in the wound.

8. Malignancy in a single parenchymal node of the thyroid gland is detected in 30% of patients and lobectomy is indicated for diagnosis. Aspiration biopsy is not indicated, since even a negative response does not allow to exclude a malignant tumor.

9. It is necessary to perform a carotid endarterectomy on the side of the affected eye.

10. The patient shows a cervical vagosimpaticescoy blockade on AV Vishnevsky. To ensure the effect of the blockade, 40-50 ml of 0.25% novocaine solution is used. The patient is placed on his back, the roller height of 12-15 cm is placed under the shoulder blades, the head is turned in the opposite direction, the hand on the side of the blockade is taken down. Determine the point of intersection of the posterior edge of the sternoclavicular-mastoid muscle and the external jugular vein. The index finger of the left hand is placed above this point and the increasing pressure of the finger feels the front surface of the spine (with the main neurovascular bundle of the medial triangle of the neck shifts medially). Form a "lemon crust", introduce a solution of novocaine, slowly move the needle to the spine. Novocaine infiltrates the vessels. After feeling the needle of the spine, the needle is removed back to 1-2 mm. Making sure there is no blood, without changing the position of the needle, a solution of novocaine is introduced. To provide a "depot" of anesthetic at the level of S (hyoid bone), as the vagus nerve and sympathetic trunk to this level are located in the posterior part of peripharyngeal space.

11. The patient is shown an emergency operation. Anesthesia: anesthesia. The position of the patient, which will provide the best access-lying on his back, with his head turned in the opposite direction from the damage. Incision of the skin and superficial fascia to perform on the front edge of the sternocleidomastoid muscle. On the wound of the esophagus, a single-row nodal suture from the resorbable thread must be applied.

12. Fine-needle aspiration biopsy is performed to obtain a substrate for cytological evaluation of the pathological process in the thyroid gland. There are 2 options for its implementation: under ultrasound control and"blind". The first option is better. To conduct a biopsy, 2 specialists are needed: a doctor of ULTRASOUND diagnosis and a surgeon. Anesthesia is not required. Complications are rare. These include: 1) hematoma at the puncture site due to damage to the blood vessel;2) puncture of the trachea, with the localization of the node in the isthmus of the thyroid gland.

13. Retropharyngeal abscess should be opened on an emergency basis, because the possible spread of pus in the space retrovirales cellular spaces into the mediastinum with the development of the rear of mediastinitis, life-threatening patient. Technique:

the swallowed abscess is opened from the oral cavity by a longitudinal incision (puncture) above the site of the greatest protrusion of the posterior pharyngeal wall. Wound drainage in the postoperative period is not required.

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