PLAN

of Practical Classes on Topographic Anatomy and Operative Surgery

for 3d year students training in specialty «General Medicine»

6th semester of 2025-2026 academic year

Practical study № 1 (09.02.26-13.02.26)

Aim and objectives of topographic anatomy and operative surgery. Surgical instruments

1) The aim, objectives and developmental history of the topographic anatomy and operative surgery, its place in the higher medical educational system.
2) Classification of surgical operations. Requirements for the operation.
3) The concept of microsurgical, endoscopic, minimally invasive, endovascular and plastic surgeries.
4) Basic surgical actions (surgical access, surgical procedures, completion of surgery). Typical (common) surgical techniques, stages of surgical operation.
5) Classification of surgical instruments.
6) Rules for surgical instruments use:
    - for dissecting tissues (scalpel, scissors);
    - auxiliary instruments (Farabeuf laminar hook (retractor), toothed hooks, hand-held and self-retaining retractors, forceps, towel clamps, grooved probe, dressing forceps, Mikulicz's clamp, Deschamp's ligature needles, Cooper's ligature needle);
    - hemostatic instruments (Billroth's hemostatic clamp, Kocher's clamp, Pean's clamp, mosquito clamp, Hopnerf's clamp, vascular clamp);
    - for connecting tissues (Hegar needle holder, surgical needles-cutting needle, taper needle, atraumatic needle; mechanical suturing apparatus).

Practical skills training: define the type of surgical instrument and demonstrate its proper use; demonstrate proper use of forceps, scalpel, needle holder, hemostatic clamps.

Practical study № 2 (16.02.26-20.02.26)

Dissecting and connecting tissues. Suture material. Surgical sutures and knots

1) Rules of dissecting and connecting tissues.
2) Suture materials: classification, types; requirements for suture materials (biocompatibility, biodegradation ability, atraumatic, strength, lack of capillarity and wicking, sterility, manipulative properties, packing and labelling).
3) Surgical knots: simple (granny), square, surgical. Manual and instrumental knot tying techniques.
4) Surgical sutures: simple interrupted, mattress (U-shaped (horizontal) and vertical (by Donati)). Continuous sutures: simple continuous, mattress, blanket suture (by Multanovsky), screw-in (by Schmieden); purse-string suture, Z–shaped, intradermal (cosmetic) (by Halsted).
5) Removal of skin sutures.

Practical skills training: identification of the type of surgical instrument and their purposes; identification of the types, purposes and other characteristics of suture materials according to the packaging specification; tying knots, application of sutures, removal of skin sutures.

Practical study № 3 (23.02.26-27.02.26)

Topographic anatomy and operative surgery of the lower limb

1) Regions and boundaries of lower limb, external landmarks.
2) Topographic anatomy of the gluteal region.
3) Topographic anatomy of the hip joint.
4) Regions and fascial beds of the thigh, boundaries, external landmarks.
5) Topographic anatomy of the anterior region of the thigh.
6) Topographic anatomy of the posterior region of the thigh.
7) Topographic anatomy of the anterior knee region. Knee joint.
8) Topographic anatomy of the posterior knee region. Popliteal fossa. Topography of the neurovascular bundle.
9) Dislocation of the bones in case of the femur fracture.
10) Principles of bone surgery: osteotomy, osteosynthesis, limb prosthetics.
11) Principles of surgery in case of congenital dislocation of the hip.
12) Femoral artery exposure and ligation.
13) Autovenous femoral-popliteal bypass.
Independent (self-study) work. Improvement of practical skills.

Practical study № 4 (02.03.26-06.03.26)

Topographic anatomy and operative surgery of the leg and foot regions

1) Regions of the leg, boundaries, external landmarks.
2) Topographic anatomy of the anterior leg region.
3) Topographic anatomy of the posterior leg region.
4) Topographic anatomy of the ankle regions (anterior and posterior, medial and lateral) boundaries, external landmarks.
5) Topographic anatomy of the ankle joint.
6) Topographic anatomy of the foot region, boundaries, external landmarks.
7) Pulse detection on the posterior tibial and dorsal pedis arteries.
8) Principles of primary surgical treatment of the wounds of extremities.
9) Stages of surgery in case of large vessels injury.
10) Vascular sutures: Carrel and Morozova techniques. «Parachute» technique.
11) Nerve repair via epineural suture technique.
12) Tendon repair techniques (modified Bunnell-Cuneo, modified Kessler-Tajima).
13) Amputation and exarticulation of extremities.
14) Three-step thigh amputation (Pirogov technique).
15) Conception of extremity replantation.
16) Surgery in case of lower limb varicose vein disease: ligation (Troyanov-Trendelenburg operation); stripping (phlebectomy according to Babckock); coagulation (endovenous laser ablation and endovenous radiofrequency ablation); suprafascial and subfascial ligation of perforating veins, endoscopic dissection of the perforating veins; combine phlebectomies; sclerotherapy.

Independent (self-study) work. Improvement of practical skills.

Practical study № 5 (09.03.26-13.03.26)

Topographic anatomy and operative surgery of the axillary region and regions of the upper limb

1) Topographic anatomy of the axillary region, boundaries.
2) The walls of axillary fossa, layer anatomy.
3) Topography of the neurovascular bundle in relation to the triangles of the anterior wall of the axillary cavity.
4) Topography of the axillary artery and its main branches.
5) Axillary artery exposure and ligation.
6) Connection of the axillary cellular space with other cellular spaces.
7) Regions and boundaries of the upper limb. External landmarks.
8) Topographic anatomy of the deltoid region.
9) Topographic anatomy of the shoulder joint.
10) Collateral circulation of the scapular region.
11) Topographic anatomy of the arm region: fasciae, muscles, topography of nerves and vessels. Dislocation of the bones in case of the humerus fracture on different levels (upper, middle, lower third).
12) Brachial artery exposure and ligation.

Independent (self-study) work. Improvement of practical skills.

Practical study № 6 (16.03.26-20.03.26)

Topographic anatomy and operative surgery of the forearm and hand regions

1) Topographic anatomy of the elbow region. Elbow joint.
2) Vein puncture and venesection techniques.
3) Topographic anatomy of the anterior forearm region.
4) Topographic anatomy of the posterior forearm region.
5) Regions of the hand: boundaries, external landmarks.
6) Topographic anatomy of the wrist regions. Carpal canals and its contents.
7) Topographic anatomy of the palmar region of the hand.
8) Superficial and deep palmar arterial arches, nerves of the hand. Canavel's zone.
9) Synovial and fibrous sheath of the tendons.
10) Topographic anatomy of the palmar region of the fingers.
11) Topographic anatomy of the dorsal region of the hand and fingers.
12) Surgery in case of whitlow and phlegmon of the hand.

Independent (self-study) work. Improvement of practical skills.

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Practical study № 7 (23.03.26-27.03.26)

Tutor-led application of practical skills in surgical departments of healthcare institutions

1) Repetition of practical skills that were mastered at the departments of General surgery and Operative surgery and topographical anatomy.
2) Analysing the medical records of inpatients with the study of the rules of execution of surgical protocols, protocols of operations.
3) Topographic-anatomical rationale for describing local status.
4) Dermal and intradermal sutures. Rules of suture removal.

5) Methods of the arterial bleeding arrest.
6) Topographic-anatomical substantiation of pulse detection.
7) Be able to write down the local status of the lower limb arteries in the patient's medical report.
8) Topographic-anatomical substantiation of tourniquet application for arterial bleeding control and duration of its application. Indicate the places suitable and unsuitable for tourniquet application, explain the reasons for unsuitability.
9) Demonstration on X-ray diagrams the bone growth zones, lines of bone fractures and dislocation.

Certification form – credit: pass/fail.

NB: **1.** Absence would be considered unexcused and must be repeated.
2. Classes are held in "3rd city clinical hospital named after E.V.Klumov"on the basis of the Department of General Surgery in the surgical building in the office of Associate Professor Bautsiuk M., the address: Lenin St.,30.
3. Compulsory dress code for class attendance are: surgical scrubs/gown, medical cap, mask, second clothes, surgical hand gloves (2-3 pairs).
4. Any student without surgical wears as stated above, would not be allowed to attend the Classes.

Independent (self-study) work. Improvement of practical skills.

Practical study № 8 (30.03.26-03.04.26)

Topographic anatomy and operative surgery of the cranial part of the head

1) Parts and regions of the head.
2) Features of blood supply and innervation of the cranial part of the head**.**
3) Topographic anatomy of the frontal, parietal, occipital regions (boundaries, layer anatomy and cellular spaces). Anatomical prerequisites of scalp wounds of the head.
4) Cranial bone structure features.
5) Topographic anatomy of the temporal region.
6) Brain tunics, spaces.
7) Dura mater, dural sinuses.
8) Diploic and emissary veins.
9) Head injuries: closed, open; penetrating and non-penetrating.

10)Extracranial hematomas. Intracranial hematomas.

11) Topographic-anatomical rationale, indications and technique for carrying out primary surgical treatment of head wounds, stopping bleeding in case of damage to the middle meningeal artery.

12) Resectional (**decompressive craniectomy**) trepanation and osteoplastic trepanation (**craniotomy**). Instruments for trepanation: trephine, milling cutters, cutting pliers Dahlgren, Luer, Liston, Gigli (Olivecrona) wire saw, Polenov guide (Gigli saw guide).

13) Topographic-anatomical rationale, indications and principles of stopping bleeding in case of damage to the sinuses of the dura mater and diploic veins.

14) Topographic anatomy of the mastoid region: boundaries, layer anatomy, Chipault triangle.

15) Anthrotomy (topographic-anatomical rationale, indications and principles of operation; instruments; possible complications).

Practical skills training: identification of external landmarks of the cranial part of the head. Selection of the sets of special instruments for trepanation (craniotomy) and demonstration of their using. Previous practical skills training.

Practical study № 9 (06.04.26-10.04.26)

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

1) Facial region of the head, boundaries, regions.
2) Features of blood supply and innervation of the facial region of the head.
3) Facial artery, its anastomosis.
4) Facial vein: tributaries, anastomosis (venous plexuses).
5) Topographic anatomy of the buccal region: boundaries, layer anatomy.
6) Topographic anatomy of the parotid-masseteric region: boundaries, layer anatomy.
7) Topographic anatomy of the parotid gland.
8) Topography of the structures (vessels and nerves) that pass through the parotid gland.
9) Topographic anatomy of the deep region of the face.
10) Fat spaces of the deep facial region and their connection with other fat spaces of the head and neck.
11) Incisions and drainage of abscesses of the deep region of the face - temporopterygoid and pterygomandibular.

Practical skills training: identification of external landmarks of the facial part of the head; identification of points to determine the pulse on arteries (superficial temporal artery, facial artery) and finger pressure to temporarily stop bleeding on a human body. Previous practical skills training.

Practical study № 10 (13.04.26-17.04.26)

Topographic anatomy of the neck

1) Regions of the neck, boundaries and external landmarks.
2) Topographic-anatomical features of the neck that are important to operative surgery.
3) Neck fascia, interfascial cellular spaces, fascial beds, fascial sheath of the neck.
4) Anterior region of the neck. Topographical anatomy: boundaries, triangles, layer anatomy.
5) Topographic anatomy of sternocleidomastoid region: boundaries, layer anatomy.
6) Carotid sheath, topography of the neurovascular bundle.
7) Topography and boundaries of the interscalene space, antescalene space and scaleno-vertebral triangle.
8) Topographic anatomy of the submandibular region.
9) Topographic anatomy of the cervical lymph nodes.

Independent (self-study) work. Improvement of practical skills.

Practical study № 11 (20.04.26-24.04.26)

Topographic anatomy and operative surgery of the neck

1) Topographic anatomy of organs of the neck: larynx, trachea, pharynx, esophagus, thyroid and parathyroid glands.
2) Topographic anatomy of the lateral region of the neck. Boundries, layer anatomy.

3) Topographic anatomy of the subclavian artery.
4) Topographic anatomy of the neck veins. Catheterization of the subclavian and jugular veins (Seldinger's techniques).
5) Drainage of abscesses and phlegmons of the neck.
6) Surgical approaches to the common carotid and vertebral arteries.
7) Endovascular surgery: balloon dilation, stenting, thrombectomy, embolectomy, rotary atherectomy.
8) Conicotomy.
9) Tracheostomy. Puncture tracheostomy.
10) Thyroid surgery: resection, thyroidectomy, hemithyroidectomy, thyroidectomy with lymphodissection.
11) Tomography of nerves of the neck: vagus, sympathetic trunk, accessory nerve, hypoglossal nerve, cervical and brachial plexuses.

Independent (self-study) work. Improvement of practical skills.

Practical study № 12 (27.04.26-30.04.26)

Practicing and applying practical skills in the operating room using virtual simulators, cadaver material and laboratory animals.

1. Ability to use correctly surgical instruments (holding and performing).
2. Selection of the sets of general and special surgical instruments for operations:
   - conicotomy;
   - tracheostomy;
   -hip amputation;
   - catheterization of the arteries and veins;
   -puncture (of vessels, pleural cavity, pericardial cavity).
3. Performing surgical manipulations and operations:
   - scalpel dissection;
   - applying hemostatic clamp;
   - applying vascular clamp (Gepfner's vascular clamp);
   -. catheterization of the arteries and veins (Seldinger's techniques);
   - vein puncture and venesection technique;
   - vascular ligation (in the wound, throughout, with suturing, using a Deschamps and Cooper needle);
   - applying and removing the sutures (including endoscopic sutures);
   - vascular suture**: circular**-continuous, «parachute», interrupted; **side-**longitudinal, transverse;
   - conicotomy;
   - tracheostomy;
   - puncture tracheostomy.

Practical study № 13 (04.05.26-08.05.26)

Topographic anatomy and operative surgery of the thorax.

1) Thoracic region boundaries and regions.
2) Thoracic region lines, external landmarks.
3) Topographic anatomy of the thoracic wall.
4) Topography of the intercostal neurovascular fascicle an internal thoracic artery.

5) Topographic anatomy of mammary gland. Drainage of abscesses and phlegmons of the mammary gland.
6) Mammary gland surgery: resection, radical resection, mastectomy, radical mastectomy (Madden, Patey, and Halsteads' operations).
7) Topography of the pleura and pleural cavity. Puncture of the pleural cavity.
8) Surgery of the penetrating chest injury. Types of pneumothorax.
9) Topography of the lungs.
10) Surgery of the lungs: pulmonectomy, lobectomy, segmental resection.
11) Topographical anatomy of the diaphragm. Diaphragm hernias (congenital and acquired).
12) Rib resection.

Independent (self-study) work. Improvement of practical skills.

Practical study № 14 (11.05.26-15.05.26)

Topographic anatomy and operative surgery of the mediastinum organs

1) Mediastinum: compartments, boundaries.
2) Topography of the organs of the superior and inferior (anterior, middle and posterior) mediastinum.
3) Topography of pericardium.
4) Pericardial puncture (parasternal and Larrey's techniques).
5) Surgery of the heart injury.
6) Surgical treatment of ischemic heart disease: endovascular approach (balloon dilation, stents); aortocoronary bypass, mammary artery-coronary bypass; types of bypass, surgical approaches; myocardial laser revascularization.
7) Surgery of the congenital heart defects (persistent truncus arteriosus, coarctation of the aorta, ventricular septal defect, atrial septal defect, tetralogy of Fallot) and valve diseases (comissurotomy, annuloplasty, prosthesis).

Independent (self-study) work. Improvement of practical skills

Practical study № 15 (18.05.26-22.05.26)

Final class: « Topographic anatomy and operative surgery of the head, neck, thorax and mediastinum organs»

Practical study № 16 (26.05.25-30.05.25)

Credit

Assessment of practical skills

1) Repetition of practical skills that were mastered at the departments of General surgery and Operative surgery and topographical anatomy.
2) Analysing the medical records of inpatients with the study of the rules of execution of surgical protocols, protocols of operations.
3) Topographic-anatomical rationale for describing local status.
4) Dermal and intradermal sutures. Rules of suture removal.
5) Methods of the arterial bleeding arrest.
6) Topographic-anatomical substantiation of pulse detection.

7) Be able to write down the local status of the lower limb arteries in the patient's medical report.
8) Topographic-anatomical substantiation of tourniquet application for arterial bleeding control and duration of its application. Indicate the places suitable and unsuitable for tourniquet application, explain the reasons for unsuitability.
9) Holo- and skeletotopia of internal organs of thoracic cavity by radiological visualization (X-ray).
10) Demonstration on X-ray diagrams the bone growth zones, lines of bone fractures and dislocation.
11) Topographic-anatomical substantiation of the choice of the artificial fistula's formation. Determine the type of fistula (tracheostoma, gastrostomy, colostomy, ileostomy) on a mannequin.
12) Topographic-anatomical substantiation of the points for pleural and pericardial cavity puncture.
13) Finding the points to perform subclavian vein and femoral artery catheterization on the human body.

Certification form – credit: pass/fail.

Head of the Department, associate professor M.Bautsiuk

29.01.26