**Nicolae Testemitanu State University of Medicine and Pharmacy**

**Department of Topographic Anatomy and Operative Surgery**

Boris M. Topor, M.D., Ph.D., Professor and Chairman

Syllabus

Course in Topographic Anatomy for Students of Medicine Faculty

**Year 2, Semester 4**

|  |  |
| --- | --- |
| **Lecture number** | **T h e m e** |
| 1 | **Introduction**. The topographic anatomy as the subject of medical instruction, its purpose, place and role in medical education, as well as principles and methods of studying this subject. Surgical instruments – classification. Basic surgical procedures: principles, phases of a surgical act. Methods and basic principles of incisions and sutures of different types of tissues. Hemostasis. Surgical knots. |
| 2 | **The shoulder (pectoral) girdle region**: infraclavicular, deltoid, scapular and axillary regions. Topographic anatomy of vessels and nerves. Spaces. Ways of spreading of pus. Incisions performed to evacuate collections of pus. Collateral blood circulation. Axillary artery: projection lines, surgical approach. Methods of hemostasis. Topographical anatomy of shoulder girdle joints–shoulder (glenohumeral), acromioclavicular and sternoclavicular joint: capsule, tendons, ligaments, bursae. Puncture of shoulder joint. Surgical approaches to shoulder joint.  |
| 3 | **The brachial, elbow and forearm regions**: boundaries, layers, neurovascular bundles. Fascial sheaths and cellular tissue spaces, ways of spreading of pus and hematomas. Incisions performed in case of purulent infections. Positions of the bone segments in case of fractures on different levels of the humerus. Projection lines and surgical approaches to neurovascular bundles of the arm, forearm and cubital region. Collateral blood circulation. Ligation of main arteries. Critical arterial segments. Venesection, venipuncture. Vascular sutures. |
| 4 | **The topography of the hand.** Regions of carpus, metacarpus and fingers: boundaries, layers, fasciae, sheaths and spaces, fibrous canals and synovial bursas. Ways of spreading of pus. The topography and surgical access to vessels, nerves and tendons. Projection lines, finding and ligation of vessels of the hand. Incisions made on hand in case of phlegmons and panaritium. Prohibited surgical areas on the hand. Fingers amputation procedure. Sutures techniques of tendons and nerves.  |
| 5 | **The topographical anatomy of the anterior-medial region of the thigh, gluteal region and posterior region of the thigh**: boundaries, layers.  Lacuna vasorum and lacuna musculorum, infrainguinal space of the femoral triangle (Scarpa triangle). Obturator canal. Adductor canal (Hunter’s canal). Subgluteal cellular tissue space, supra- and infrapiriform foraminae and gluteal neurovascular bundles. Ways of spreading of the phlegmons and hematomas. Projection lines and surgical approaches of neurovascular bundles of the thigh. Collateral blood circulation. Positions of the bone segments in fractures on different levels of the femur.Femoral canal. Surgical anatomy of femoral hernias. Herniotomy and hernioplasty of femoral hernias (Bassini, Rudgi, Parlavechio procedures). Amputation of the thigh: principles, types and surgical phases. Saphenectomy (Trendelenburg, Babcock procedures). C**oxofemoral joint.** Hip joint topography: acetabulum, head of the femur, joint capsule, ligaments, and blood supply. |
| 6 | **The topographical anatomy of the leg and knee region:** boundaries, layers. Musculofascial anterior, lateral and posterior compartments of the leg. Neurovascular bundles: projection lines and surgical approaches and ligation of the arteries. Cruropopliteal canal and superior and inferior peroneal canals. Ways of the spread of pus and hematomas. Popliteal fossa: boundaries, layers and contents. Jobert’s fossa. Collateral blood circulation. Positions of the bone segments in fractures on different levels of the leg bones. Amputation of leg: principles, types and surgical stages. Operations on vessels: saphenectomy. Nerve blockage in legsKnee joint: bones, ligaments, tendons, capsule, meniscuses, and bursae. Puncture of the knee joint. |
| 7 | **The talocrural (ankle) region**: boundaries and layers of anterior, posterior, medial and lateral ankle regions. The ankle, tibiofibular and subtalar joints: capsule, ligaments, tendons around them. Osteo-fibrous canals. Neurovascular bundles. Collateral blood circulation. **The topographical anatomy of the foot.** Plantar and dorsal region of the foot. Ways of spreading of the pus. Projection lines and surgical approaches to vessels, nerves and bones. Joints of the foot. Amputation disarticulation: principles, types. Transverse tarsal Chopart’s joint and its surgical key – bifurcate ligament. Tarsometatarseae Lisfranc’s joint and its surgical key – medial cuneometatarseum ligament. Metatarsophalageal and interphalangial joints.  Mid-term competency test and practical skills of lectures 1-7. |
| 8 | **The topographical anatomy cerebral portion of the head.**  The boundaries and layers of the fronto-parieto-occipital, temporal and mastoid regions. Peculiarities of the vascularization of the scalp. Surgical anatomy of the mastoid region. Cranial meninges and intermeningeal spaces. Surgical treatment of the craniocerebral wounds. Methods of hemostasis. Trepanation of the skull (osteoplastic and decompresive). Cranioplasty. Mastoid antrotomy. Ventriculopuncture. Puncture of the superior sagital sinus. Surgical interventions in case of purulent processes. Venous sinuses of the dura mater encephaly. Arterial supply of the brain. Intracranial hematomas. |
| 9 | **The topography of the facial portion of the head.** Boundaries.The buccal (cheek), parotido-masseteric regions and deep (intermaxillar) region of the face: boundaries, spaces, vessels, nerves. Topography of facial and trigeminal nerves. The blockage of trigeminal nerve branches. Surgical anatomy of the parotid gland. Boundaries and contents of the orbital, nasal and oral regions. Venous connections. Ways of spreading of pus. Incisions made on face. Maxilar sinus puncture.  |
| 10 | **Neck**. The topographical anatomy of the neck. Division into regions (triangles). Fascial layers. Interfascial spaces and their contents. The topography of thyroid and parathyroid glands, larynx, pharynx, neck portion of the trachea and esophagus. The topography of the main neck neurovascular bundles. Ways of spreading of pus. Surgical treatment of wounds of the neck. Surgical acces to organs of the neck, blood vessels and nerves. Puncture of the external and internal jugular veins. Tracheostomy and conicotomy.: indications, complications. Tracheostomy and conicotomy in children. |
| 11 | **Neck**. The topographical anatomy of regions of the neck. Boundaries, layers and contents of the regions: submandibular triangle, submental (suprahyoid) triangle, carotid triangle, inferior carotid (omotracheal) triangle, sternocleidomastoid region, supraclavicular (omoclavicular) triangle, lateral triangle of the neck (antescalen and intercscalen spaces). Scalenovertebral triangle. Ways of spreading of pus. Surgical interventions on the neck. Argumentation of rational incisions made on the neck in case of superficial and deep phlegmons. Cervical plexus block. Puncture of the subclavian vein. |
| 12 | **Thorax**. Boundaries. Landmarks. Lines of orientation. Layers of the chest wall. Topography of the intercostal space. Topographic anatomy of the mammary gland. Lymph drainage from mammary gland and sentinel lymph nodes. Internal thoracic artery. Sugical anatomy of the anterior and posterior mediastinum (heart, pericard, thoracic aorta, esophagus, azygos and hemiazygos veins, splanchnic veins, vagus nerves, phrenic nerves, recurent nerves, trachea, bronchi, thoracic duct, sympathetic trunk). Reflexogenous zones. Topographic anatomy of the diaphragm, pleura, lungs. Ways of spreading of pus. Basic surgical operations on organs of the thoracic cavity. Rational surgical accesses. Incisions made in case of mastitis. Intercostals block. Thoracocentesis and pericardiocentesis. Surgical treatment of the wounds of penetrating and non-penetrating thoracic wounds. Puncture of subclavian vein. Principles of surgical treatment of open and tension pneumothorax.  Mid-term competency test and practical skills of lectures 8-12. |
| 13 | **Topographic anatomy of the antero-lateral abdominal wall**. Weak points. Boundaries. Layers. Vascularization and innervation. Venous porto-caval and cavocaval anastomosis. The surgical anatomy of the the inguinal region. Inguinal canal and inguinal space. Surgical anatomy of the external abdominal hernias of the abdominal wall, structure, types, classification. Surgical principles in hernias, peculiarities in children. The basic steps and surgical procedures in white line hernia, umbilical hernia and inguinal hernia. Surgical peculiarities in congenital inguinal hernia, strangulated inguinal hernia and sliding inguinal hernia. Umbilical hernia repair (Lexer-Șpitț, Mayo, Sapejko procedures, techniques with allogeneic materials), inguinal canal plasty (Martinov, Bassini, Kimbarovski, techniques with allogeneic materials). Ways of spreading of pus. Rational incisions and surgical access on the abdominal cavity organs. Laparocentesis (celiocentesis). |
| 14 | **Topographic anatomy of the abdominal cavity.** The surgical anatomy of supramesocolic organs: skeletotopy, holotopy, syntopy. Relationship of the organs with peritoneum, folds, ligaments, bursa (omental, hepatic and pregastric). Lesser and greater omentum. Topography of the vague nerves. Vascularization and innervation of the organs of peritoneal cavity. Venous portocaval and cavocaval anastomosis. Typical seats of accumulation of the pathological fluid in the peritoneal cavity. Surgical principles on the gastrointestinal tract. Intestinal anastomosis and suture. Surgical operations on the stomach: stomach wound suturing, gastrotomy, gastrostomy, gastroenteroanastomosis, surgical interventions in case of pylorostenosis. Stomach resection (Billroth I and II method). Surgical interventions in case of perforated ulcer (Oppel, Juud meethod), on the liver (hepatorrhaphy), gallbladder (cholecystectomy), spleen (splenectomy) and pancreas (surgical access). |
| 15 | **The surgical anatomy of organs situated in the inframesocolic** **floor** (jejunum, ileum and colon). Relationship of the organs with peritoneum: skeletotopy, holotopy, syntopy. Paracolic sulci, mesenteric sinuses and recesses. Typical seats of accumulation of the pathological fluid in the peritoneal cavity. The topography of the small and large intestine (cecum and appendix). Vascularization critical areas. Surgical anatomy of congenital malformation: Meckel diverticulum, megacolon, Hirschsprung's disease (congenital megacolon), atresia. Revision of the peritoneal cavity. Intestinal suture. Technique of applying intestinal suture (continuous separated sutures, Albert and Schmieden techniques, Lambert suture). Surgical operations on small intestine (enterostomy, intestinal wounds suturing, resection, types of anastomoses). Surgical interventions on large intestine (colostomy and artificial anus, appendectomy).  |
| 16 | **Topographic anatomy of the lumbar region (postero-lateral wall of the abdomen), spinal column and retroperitoneal space.** Layers, weak points (Petit and Lesgaft Grynfelt triangles). Topography of the retroperitoneal organs, sheaths (fascias), adipose layers and neurovascular structures. Ways of pus spreading from retroperitoneal space. The topography of the spinal column and spinal canal (content, osteoligamentar system). Basic principles on retroperitoneal organs surgery. Lumbar spinal canal puncture technique. Spinal anesthesia. Surgical operations on spinal column (laminectomy, spondylodesis). Surgical access on kidneys, ureters and retroperitoneal tissues (retroperitoneal and transperitoneal). Nephrectomy, resection and kidney suture. Pyelotomy. Ureteral resection and suture.  |
| 17 | **Topographic anatomy of the** **pelvis and perineum** (bones, ligaments, skeleton, muscles, pelvic organs, relationship with peritoneum, vascularization, innervation, lymphatic and venous drainage). Age peculiarities. Dividing the pelvis in "floors". Pudendal canal. The relationship of pelvic organs with peritoneum in women and male (folds, recesses, ligaments), sheaths (fascias) and retroperitoneal spaces. Ways of pus and hematomas spreading through fasciocellular spaces. Surgical access and surgical operations on pelvic organs. Pudendal nerve block (Alkok). Douglas pouch puncture. Surgical interventions in hydrocele (Bergmann, Winkelman). Catheterization, puncture of the urinary bladder, suprapubic cystostomy. Surgical procedures for hemorrhoids, paraproctitis and anal fistulas. Argumentation of the incisions made in case of abcesses and phlegmon. Surgical operations in anomalies: atresia of the rectum and anus, epispadias, hypospadias. **Totalization 3** Mid-term competency test and practical skills of lectures Mid-term competency test and practical skills of lectures 13-17. |