PLAN
of Topographic Anatomy and Operative Surgery
Practical Classes
for 3rd year students, 2016/2017 academic year

Practical class #1 (06.02-10.02/2017)
Aims and objectives of topographic anatomy and operative surgery.
Surgical instruments.

1) Aim and objectives of the topographic anatomy and operative surgery as a scientifically practical academic discipline, its place in the system of a high medical education.
2) Basic concepts of topographic anatomy: topography, projection, relief, layer, region, holotopy, skeletotopy, syntopy of the organs, fascial sheath, neurovascular bundle, cellular space, collateral blood supply.
3) Clinical, projective, relief anatomy.
4) Individual variability, norm, norm variations, anomaly, congenital defects, teratosis.
5) Research methods in topographic anatomy.
6) Surgical operations, classification.
7) Concepts of microsurgical, endoscopic, minimally invasive, endovascular and plastic operations.
8) Surgical technique: elementary surgical actions, surgical modes, stages of the operation.
9) Surgical instruments, classification.
10) Rules of surgical instruments usage:
   - Instruments for dividing tissue (scalpel, scissors)
   - Auxiliary instruments (Farabeuf laminar hook, toothed hooks, wound dilators (retractors), forceps – surgical, thumb, tenaculum, towel clips, grooved probe, packer, Mikulich’s clamp, Cooper’s ligature needle, Deschamp’s ligature needle).
   - Hemostatic instruments (Billroth’s hemostatic forceps, Kocher’s clamp, Pean’s forceps, “mosquito” forceps, Gepfner's vascular clamp, ligating clamp).
   - Instruments for connecting tissue (Hegar’s needle holder, surgical needles: taper needle, cutting needle, atraumatic needle, surgical staplers).

Practical skills: detection of the type of surgical instruments and demonstration rules of its application.
Practical class #2 (13.02-17.02/2017)
Connecting and disconnecting tissues. Suture material. Surgical sutures and knots. Parts and regions of the head. Topography of the fronto-parieto-occipital region.

1) Techniques of dissecting tissues and putting the surgical sutures.
2) Suture material: classification, types, mechanical, biological, immunological characteristics.
4) Removal of the skin stitches.
5) Surgical knots: square (reef), surgical, granny knot.
6) Parts and regions of the head.
7) Distinctive features of the blood supply and innervation of the scalp soft tissues.
8) Boundaries, layer anatomy and fat spaces of the fronto-parieto-occipital region.
9) Cranial bone structure.

Practical skills: detection of the type of surgical instruments and demonstration of its application, detection of the suture material type, knots tying, suturing, stitch removal.

Drawings: layers of fronto-parieto-occipital region.

Practical class #3 (20.02-24.02/2017)
Topographic anatomy and operative surgery of the temporal and mastoid regions.

1) Topography of the temporal region.
2) Brain tunics, spaces.
3) Dura mater, sinuses.
4) Diploic and emissary veins.
5) Classification of head injuries.
6) Types of extracranial and intracranial hemorrhages.
7) Initial surgical debridement (primary surgical treatment) of the head wounds: topographo-anatomical substantiation, indications and techniques.
9) Stopping venous sinuses and diploic veins bleeding.
10) Mastoid region: boundaries, layer anatomy, suprameatal (Shipo) triangle.
11) Anthrotomy (indications, topographo-anatomical substantiation, and principles of the operations, possible complications).

Practical skills: defining external landmarks of the head, making set for craniotomy and demonstration of their use, previous practical skills.
Drawings: Shipo triangle.

Practical class #4 (27.02-03.03/2017)
Topographic anatomy of the fascial region of the head.

1) Facial region of the head, boundaries, regions.
2) Distinctive features of blood supply and innervation of the fascial region of the head
3) Fascial artery, its anastomosis
4) Fascial vein: tributaries, anastomosis (venous plexuses)
5) Buccal region: boundaries, layer anatomy.
6) Parotid-masticatory region: boundaries, layer anatomy.
7) Topography of the parotid gland
8) Topography of the structures that pass through the gland
9) Topography of the deep region of the head
10) Fat spaces of the deep facial region: connection with other regions of the head and neck.

Practical skills: defining external landmarks of the fascial region of the head, previous practical skills training.
Drawings: parotid duct pass, fascial nerve branches.

Practical class #5 (06.03-10.03/2017)
Topography of the abdomen. Anteriolateral abdominal wall topography.

1) Abdomen, abdominal cavity: definition, boundaries, external landmarks, abdominal cavity walls.
2) Anteriolateral abdominal wall: regions of the abdomen, layer anatomy, blood supply and innervation. Vascular anastomosis.
3) Projections of the abdominal cavity organs on the anteriolateral abdominal wall.
4) Linea alba, umbilical ring.
5) Rectus sheath: anatomy.
6) Weak places of the anteriolateral abdominal wall.
7) Inguinal region, inguinal interspace.
8) Inguinal canal, Hesselbach’s Triangle (Inguinal Triangle), umbilical folds, inguinal fossae.
9) Topography of the spermatic cord, its elements; layers.
10) Descent of the testes into the scrotum.
11) Anatomical substantiation of the cryptorchidism, hydrocele and hydrocele of the cord.
12) Topographic and anatomical substantiation, indications and techniques of the operations in case of cryptorchidism, hydrocele (Vinkelman, Bergman methods).

**Practical skills:** defining external landmarks and boundaries of the anteriolateral abdominal wall, defining the projection of the organs on the anteriolateral abdominal wall.

**Drawings:** regions of the abdomen, structure of the rectus sheath, inguinal region, inguinal interspace, inguinal canal, umbilical folds, inguinal fossae, inguinal triangle on the internal surface of abdominal wall.

**Practical class #6 (13.03-17.03/2017)**

**Surgical anatomy of hernias. Operations on anteriolateral abdominal wall.**

1) Hernia – definition, composition and elements, classification, steps of herniotomy.
2) Surgical anatomy of the hernias: direct, indirect, congenital inguinal, umbilical, linea alba hernias.
3) Topographo-anatomical substantiation, indications and techniques of the operations in case of indirect inguinal hernia (hernioplasty by Martynov, Girard-Spasokukotski), in case of direct hernia (hernioplasty by Bassini). Lichtenstein’s method of hernioplasty.
4) Operations in case of umbilical hernias (hernioplasty by Meyo, Sapeshko, Lexer, with synthetic patch).
5) Laparoscopic operations in case of hernias.
6) Distinctive features of the operations in case of congenital, strangulated and sliding hernias.

**Practical skills:** previous practical skills training.

**Drawings:** indirect, congenital, sliding inguinal hernias, hydrocele and hydrocele of the cord, hernioplasty by Bassini, Girard-Spasokukotski, Martynov, Sapeshko, Lexer.
**Practical study #7 (20.03-24.03/2017)**

Topography of the peritoneum and abdominal cavity. Intestinal sutures.

1) Peritoneum, peritoneal cavity. Extraperitoneal space (retroperitoneal space, retropubical, retroinguinal spaces).
2) Topography of the endoabdominal fascia.
3) Topography of the peritoneum: compartments, mesenteries, omenta, omental bursa; lacunas, fossas and folds; ligaments and, recesses of the upper compartment.
4) Topography of the peritoneum in the lower compartment.
5) Mesenterial sinuses; lateral canals (paracolic grooves), recesses.
6) Intestinal sutures: infected ("dirty") and "clean", single-row, multi-row, interrupted and continuous, manual and hardware.
7) Intestinal sutures techniques: Mateshuk, Jobert, Shmiden, Lambert, Albert.

**Practical skills:** intestinal sutures: by Jobert, Mateshuk, Shmiden, Lambert, Albert. Previous practical skills training.

**Drawings:** sagittal scheme of the peritoneum, intestinal sutures: by Jobert, Mateshuk, Shmiden, Lambert, Albert.

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**Practical study# 8 (27.03-31.03/2017)**

Small intestine topographic anatomy and operative surgery.

1) Topography of the small intestine and their mesentery.
2) Surgical approaches to the abdominal cavity organs – open and laparoscopic operations.
3) Intestinal wound repair.
4) Bowel resection: indications, steps of the operation (approach, defining the length of the resecting part and its mobilization, end-to-end and side-to-side anastomoses, mesentery repair).
5) Meckel’s diverticulum removal.

**Practical skills:** end-to-end anastomosis, surgical instruments for abdominal cavity organs operation, previous practical skills training.

**Drawings:** surgical approaches to the abdominal cavity organs.
Practical study #9 (03.04-07.04/2017)
Stomach topographic anatomy and operative surgery.

1) Topography of the stomach.
2) Gastrostomy: temporal (Witzel’s method, Kader’s method) and permanent (Toprover’s method).
3) Anterior and posterior gastroenteroanastomosis.
4) Repair of the perforated gastric ulcer.
5) Gastric resection (Bilroth I procedure, Bilroth II procedure, Finsterer-Hofmeister modification).

Practical skills: previous practical skills training.
Drawings: stomach blood supply, gastrostomy, gastroenteroanastomosis, gastric resection.

Practical study #10 (10.04-14.04/2017)
Liver, gallbladder, extrahepatic bile ducts topographic anatomy and operative surgery.

1) Topography of the liver, gallbladder, extrahepatic bile ducts.
2) Liver resection, liver injury suture (nodal, Kuznetsov-Penskij, Oppel’s suture)
3) Liver transplantation
4) Gallbladder surgery: approaches, cholecystectomy from the neck to the body and from the body to the neck.
5) Laparoscopic cholecystectomy.
6) Choledochotomy, papillotomy.
7) Common bile duct drainage: by Ker, Kholsted-Pikovski
8) Biliodigestive anastomosis (choledocho-duodenal, hepato-enteral anastomosis).

Practical skills: previous practical skills training.
Drawings: Calot triangle, extrahepatic bile ducts, parts of the common bile duct, portal vein and its tributaries, liver suture, common bile duct drainage.
Practical study #11 (17.04-24.04/2017)
Pancreas and spleen topographic anatomy and operative surgery.
Large intestine topographic anatomy.

1) Topography of the pancreas.
2) Topography of the spleen.
3) Pancreatoduodenal resection.
4) Spleen injury repair, splenectomy.
5) Topography of the large intestine.

Practical skills: previous practical skills training.

Practical study # 12 (24.04-28.04/2017)
Large intestine surgery.

1) Surgical approaches to the appendix: by Mack-Burney, Lennander, transverse); technique of wound expansion in case of the atypical position of the appendix.
2) Appendectomy technique.
3) Laparoscopic appendectomy.
4) Large intestine resection (hemicolonecnotomy).
5) Colostomy (sigmostomy).
6) Alternative surgical technique of fecal diversion.

Practical skills: previous practical skills training.
Drawings: colon, mesenteric sinuses, paracolic grooves, variations in the position of caecum and appendix, approaches to the appendix, colostomy, alternative technique of fecal diversion.

Practical study #13 (02.05-06.05/2017)
Topographic anatomy of the lumbar region and retroperitoneal space.
Surgery of the retroperitoneal space organs.
1) Lumbar region: boundaries, external landmarks, layer anatomy, weak places of the lumbar region.
2) Retroperitoneal space: boundaries, layer of the cellular fat tissue, interconnection of fat spaces in the region.
3) Topography of the kidneys, ureters, adrenal glands.
4) Topography of the abdominal aorta.
6) Extraperitoneal (Fedorov and Bergman-Israel) and transperitoneal approaches to the kidneys and ureter.
7) Pyelotomy nephrostomy, nephrectomy, kidney resection; kidney transplantation.
8) Ureter suture.
9) Abdominal aortic aneurisms (complicated and uncomplicated).

Practical skills: defining external landmarks of the lumbar region, previous practical skills training.
Drawings: medial and lateral compartments of the lumbar region, surgical approaches to the kidneys and ureter, parts of the ureter.

Practical study #14 (08.05-12.05/2017)
Pelvis topographic anatomy.
1) Bones, walls of the pelvis (pelvic girdle). Perineum, urogenital diaphragm, pelvic diaphragm.
2) Fasciae and fat spaces of the pelvic cavity.
3) Topography of the urogenital peritoneum. Floors of the pelvic cavity.
4) Topography of the iliac arteries and veins.
5) Topography of the pelvis organs (rectum, anal canal, bladder, ureter, prostate, urethra, uterus, its appendages and vagina).

Practical study #15 (15.05-19.05/2017)
Pelvis operative surgery.

1) Urinary bladder puncturing.
2) Cystostomy.
3) Bladder injuries repair.
4) Surgery in case of paraproctitis, rectal fistula, hemorrhoid.
5) Cesareans section.
6) Drainage of pelvic abscesses through the rectum, vagina.
5) Surgery in case of benign and malignant pathology of the prostate.
6) Principles of varicocele surgery: Ivanisevich operation, endovascular and laparoscopy techniques.

**Practical skills:** previous practical skills training.
**Drawings:** fat spaces and floors of the pelvic cavity.

**Practical study # 16 (22.05-26.05/2017)**
**Final credit class**

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30.01.17