PROGRAM REALIZACJI ZAJĘĆ

Schedule for anatomy classes.

Przedmiot: ANATOMIA PRAWIDŁOWA

Human anatomy

Tematyka ćwiczeń.

Kierunek: LEKARSKI - semestr letni - moduł 6/7

Field of study: Faculty of medicine - spring semestr - part 6/7

ABDOMEN AND PELVIS

LABORATORY CLASSES 1

Wet lab classes with PBL and SGD (Classes will be conducted at the *Collegium Anatomicum*. Wet preparations. Classes implemented using VR, *Anatomage* and the „inverted spotters" method*)*.

1. Planes and regions of the abdomen cavity
2. Division into nine regions and four quadrants
3. Layers of the abdominal wall
4. Muscles of the anterolateral and posterior abdominal walls
   - Attachments
   - Aponeuroses
   - Innervation
   - Actions.
5. Rectus sheath
   - Anterior and posterior layers
   - Arcuate line
   - Contents
6. Internal surface of the anterolateral abdominal wall
   - Folds and their contents
   - Fossae.
7. Inguinal canal
   - Development
   - Structure of walls
   - Deep and superficial rings- boundaries and detailed location
   - Main contents (in general) in males and females
8. Places of weaknesses of the abdominal cavity (sites of hernias
   - Linea alba
   - Umbilicus
   - Inguinal canal
   - Femoral canal (general location)
9. Arteries of anterolateral abdominal wall.
10. General orientation in location of viscera of the abdominal cavity in situ after opening (cut) of abdomen in the median plane

LABORATORY CLASSES 2

Wet lab classes with PBL and SGD (Classes will be conducted at the *Collegium Anatomicum*. Wet preparations. Classes implemented using VR, *Anatomage* and the „inverted spotters" method*)*.

1. Esophagus
   - Structure and layers of wall
   - Course and topography
   - Constrictions
   - Esophagogastric junction

PBL - Problem Based Learning
SGD - Small Group Discussion

LABORATORY CLASSES 1
LABORATORY CLASSES 2

- Esophageal hiatus
- Blood supply
  - Arterial vasculature
  - Venous drainage with emphasis on portocaval junction and possibility of varices of esophagus
- Innervation
- Lymphatic drainage.

2. Peritoneum
   - Development
   - Parietal and visceral layers
   - Lesser and greater omentum
   - Peritoneal cavity and its compartments
     - Greater sac
     - Lesser sac (omental bursa)- location and boundaries, omental foramen
     - Other peritoneal recesses including pelvic peritoneal pouches in male and female
   - Peritoneal fluid
   - Relationship of the viscera to peritoneum (division into intraperitoneal and extraperitoneal organs)
   - Peritoneal mesenteries and ligaments
3. Stomach
   - Relation to skeleton, peritoneum and other structures
   - Structure
   - Layers of wall
     - Serous membrane (visceral peritoneum) and ligaments
     - Muscular layer
     - Mucous membrane
   - Function
   - Blood vessels
     - Arteries of stomach (names of arteries, origin, course, area of supply)
     - Venous drainage (names of veins, area of drainage, place of termination)
   - Lymphatic drainage (names of lymph nodes, area of drainage, place of termination)
   - Innervation.
4. Abdominal aorta
   - Course in abdomen
   - Branches- celiac trunk and its branches (whole course)
     - Left gastric artery
     - Splenic artery
     - Common hepatic artery
5. Abdominal part of autonomic nervous system
   - Celiac plexus (solar plexus)
     - Location
     - Sympathetic roots
     - Parasympathetic roots
     - Secondary plexuses
   - Visceral reffered pain.
6. Radiological visualization of esophagus, stomach and related structures in X- ray, CT, NMR and angiographic examinations

LABORATORY CLASSES 3

Wet lab classes with PBL and SGD (Classes will be conducted at the *Collegium Anatomicum*. Wet preparations. Classes implemented using VR, *Anatomage* and the „inverted spotters" method*).*

1. Intestine- parts and differences between them, structure, layers of wall, topography, relation to skeleton and peritoneum, function, blood vessels, lymph nodes, innervation
   - Small intestine
     - Duodenum
     - Jejunum
     - Ileum
     - Meckel's diverticulum (as possible, important developmental remnant)

PBL - Problem Based Learning
SGD - Small Group Discussion

- Large intestine
  - Cecum with (vermiform) appendix
  - Colon
  - Rectum
  - Anal canal

2. Levator ani, anal sphincters, control of defecation
3. Rectouterine and rectovesical pouches.
4. Lymphatic system
   - Lymph nodes involved in drainage of intestine
   - Intestinal trunks
   - Chyle cistern and thoracic duct.
5. Unpaired visceral branches of abdominal aorta supplying intestine
   - Celiac trunk and common hepatic artery
   - Superior mesenteric artery
   - Inferior mesenteric artery
6. Branches of internal iliac artery supplying rectum
   - Middle and inferior rectal arteries

LABORATORY CLASSES 4

Wet lab classes with PBL and SGD (Classes will be conducted at the *Collegium Anatomicum*. Wet preparations. Classes implemented using VR, *Anatomage* and the „inverted spotters" method*).*

1. Liver
   - Localization, relation to skeleton, peritoneum and other organs
   - Structure (surfaces, lobes, segments, ligaments, porta hepatis, portal triad)
   - Function
   - Blood supply
     - Common hepatic artery and proper hepatic artery
     - Portal vein, intrahepatic vascular network
     - Hepatic veins
   - Lymphatic drainage and related lymph nodes
   - Innervation
2. Biliary system
   - Intrahepatic portion
   - Extrahepatic portion
     - Common hepatic duct
     - Gallbladder (localization, relation to skeleton, peritoneum and other organs, parts, function)
     - Cystic duct
     - Bile duct and its course
     - Hepatopancreatic ampulla
3. Inferior vena cava
   - Origin
   - Course
   - Topography
   - Tributaries and places of drainage
4. Portal vein
   - Origin
   - Course (including intrahepatic venous network)
   - Topography
   - Tributaries and places of drainage
   - Portocaval anastomoses
     - Esophageal anastomosis
     - Rectal anastomosis
     - Paraumbilical anastomosis
     - Retroperitoneal anastomosis
5. Pancreas
   - Structure (head, neck, body, tail)
   - Relation of particular parts to skeleton, peritoneum and neighbouring structures
   - Function

PBL - Problem Based Learning
SGD - Small Group Discussion

- Exocrine secretion (main and accessory pancreatic ducts)
- Endocrine secretion (pancreatic islets and their hormones)
- Blood supply
  - Pancreaticoduodenal arteries
  - Splenic artery
- Lymphatic drainage and related lymph nodes
- Innervation

6. Spleen
   - Localization and relation to skeleton, peritoneum and neighbouring structures
   - Structure: surfaces, borders, ends
   - Ligaments
   - Blood supply
     - Splenic artery and vein
   - Function.
7. Radiological visualization of liver, gallbladder, pancreas and spleen in X- ray, CT, NMR, cholecystographic and angiographic examinations

LABORATORY CLASSES 5

Wet lab classes with PBL and SGD (Classes will be conducted at the *Collegium Anatomicum*. Wet preparations. Classes implemented using VR, *Anatomage* and the „inverted spotters" method*)*.

1. Kidneys (right and left)
   - Localization, relation to skeleton, peritoneum, muscles and other organs
   - External structure
     - Renal hilum and its structures
   - Macroscopic internal structure
   - Structure of nephron
     - Function
     - Production of urine
   - Endocrine function
   - Blood supply
     - Renal arteries and veins
   - Lymphatic drainage and related lymph nodes
   - Innervation
2. Urinary tracts
   - Renal calyces
   - Renal pelvis
   - Ureters
     - Course and parts
     - Topography
     - Constrictions
3. Urinary bladder
   - Localization, relation to skeleton, peritoneum, and other organs in male and female
   - Structure
     - Parts, trigone of bladder
   - Layers of wall
   - Muscles of bladder
   - Innervation and nervous control of urination
   - Blood supply
     - Superior and inferior vesical arteries
     - Venous drainage
   - Lymphatic drainage and related lymph nodes
4. Suprarenal glands (left and right)
   - Localization, relation to skeleton, peritoneum, and other organs
   - External shape
   - Parts of internal structure and their endocrine functions
     - Cortex
     - Medulla

PBL - Problem Based Learning
SGD - Small Group Discussion

- Blood supply
  - Suprarenal arteries (superior, middle, inferior)- origins
  - Suprarenal vein (right and left)- places of drainage
- Lymphatic drainage and related lymph nodes.
- Innervation

5. Abdominal aorta
   - Paired visceral branches
     - Middle suprarenal arteries
     - Renal arteries
     - Testicular (ovarian) arteries
   - Paired parietal branches
     - Inferior phrenic arteries
     - Lumbar arteries
6. Radiological visualization of urinary system and related structures in X- ray, CT, NMR, and angiographic examinations

LABORATORY CLASSES 6

Wet lab classes with PBL and SGD (Classes will be conducted at the *Collegium Anatomicum*. Wet preparations. Classes implemented using VR, *Anatomage* and the „inverted spotters" method*).*

1. Testes (right and left)
   - Ultimate localization
   - Descending and relation to peritoneum (tunica vaginalis)
   - Relation to other structures
   - External structure
   - Layers of wall
   - Internal structure
     - Seminiferous tracts
   - Function
     - Role in spermatogenesis
     - Production of hormones
   - Blood supply
     - Testicular artery
     - Pampiniform plexus and testicular veins (left and right)
   - Lymphatic drainage and related lymph nodes
   - Innervation
2. Epididymides (right and left)
   - Localization and relation to other structures
   - Parts (head, body, tail)
   - Internal structure
     - Ductuli efferentes testis (in head)
     - Epididymal duct (in body and tail)
   - Role in spermatogenesis
   - Blood supply and lymphatic drainage
   - Innervation
3. Ductus deferentes
   - Parts and course
   - Layers of wall
   - Role
4. Spermatic cord
   - Layers of sheath
   - Contents
5. Seminal vesicles
   - Localization
   - Role
6. Ejaculatory ducts
   - Localization and course
   - Role

PBL - Problem Based Learning
SGD - Small Group Discussion

7. Prostate
    - Localization and relation to other structures
    - Arterial and venous vascularization
    - Lymphatic drainage and related lymph nodes
    - Role
8. Bulbourethral glands
    - Localization
    - Role
9. Scrotum
    - Development and ultimate layers of wall
    - Contents
    - Blood supply
    - Lymphatic drainage and related lymph nodes
    - Innervation
10. Penis
    - Parts
    - Internal structure
        - Corpora cavernosa- structure and role
        - Corpus spongiosum- - structure and role
    - Bulbospongiosus and ischiocavernosus muscles
    - Blood supply
        - Arteries and veins of penis
    - Innervation
11. Male urethra
    - Orifices, course and parts
    - Curves, constrictions and enlargements
    - Urethral sphincters
12. Internal iliac artery and vein
    - Course
    - Branches
13. Pelvic part of autonomic nervous system
    - Superior and inferior hypogastric plexuses
        - Location
        - Sympathetic and parasympathetic roots (pelvic splanchnic nerves)
        - Secondary plexuses
    - Autonomic control of erection and ejaculation
14. Sacral and coccygeal nerves
    - Pudendal nerve

LABORATORY CLASSES 7

Wet lab classes with PBL and SGD (Classes will be conducted at the *Collegium Anatomicum*. Wet preparations. Classes implemented using VR, *Anatomage* and the „inverted spotters" method*)*.

1. Ovaries (right and left)
    - Localization, relation to peritoneum and other organs
    - External structure
    - Mesoovary and ligaments
    - Internal structure
        - Ovarian follicles
        - Changes during ovarian cycle
    - Function
        - Role in oogenesis
        - Production of hormones
    - Blood supply
        - Ovarian artery
        - Ovarian branch of uterine artery
        - Venous drainage

PBL - Problem Based Learning
SGD - Small Group Discussion

- Lymphatic drainage and related lymph nodes
- Innervation

2. Uterine tubes
   - Parts
   - Relation to peritoneum
     - Mesosalpinx
   - Arterial and venous blood supply
3. Uterus
   - Parts
   - Localization and position in pelvis
   - Relation to peritoneum and other organs
   - Ligaments
     - Broad ligament of uterus with mesometrium and parametrium
     - Round ligament of uterus
     - Cardinal ligament of uterus
   - Layers of wall
     - Perimetrium
     - Myometrium
     - Endometrium (changes in menstrual cycle)
   - Blood supply
     - Uterine artery
     - Venous drainage
   - Lymphatic drainage and related lymph nodes
   - Innervation
4. Vagina
   - Course and relation to other organs
   - Walls
   - Parts of fornix
5. Female external genitalia
   - Pudendal labia
   - Clitoris
   - Vestibule of vagina
     - Orifice of vagina, hymen
     - External orifice of urethra
     - Vestibular glands
6. Female urethra
   - Parts and course
   - Relation to other organs
   - Sphincters
   - Orifices

LABORATORY CLASSES 8

Wet lab classes with PBL and SGD (Classes will be conducted at the *Collegium Anatomicum*. Wet preparations. Classes implemented using VR, *Anatomage* and the „inverted spotters" method*).*

1. Muscles of pelvic diaphragm (pelvic floor)- main action, innervation)
   - Levator ani and coccygeus
2. Ischioanal (ischiorectal) fossae
3. Pudendal canal (vessels, nerves)
4. Perineal body
5. Perineum
   - Muscles (main action, innervation)
   - Perineal fascia (layers)
   - Superficial and deep perineal pouch
6. Radiological visualization of male and female genital organs and related structures in CT, NMR and other radiological examinations
7. Clinical anatomy: parametrium, paracervix, pelvic canal (delivery way).

PBL - Problem Based Learning
SGD - Small Group Discussion

- Episiotomy. Examination per vaginam.
- Anteflexion and anteversion of uterus, retroflexion and retroversion of uterus.
- Homologic organs of perineum.

LABORATORY CLASSES 9

Wet lab classes with PBL and SGD (Classes will be conducted at the *Collegium Anatomicum*. Wet preparations. Classes implemented using VR, *Anatomage* and the „inverted spotters" method*).*

1. Clinical anatomy: spondylosis and spondylolisthesis, lumbalisation and sacralisation
2. **REVIEW - ABDOMEN AND PELVIS**

CREDIT 6

Credit: **ABDOMEN AND PELVIS**- SPOTTERS / inverted spotters
Credit: **ABDOMEN AND PELVIS** - SCQ / MCQ

MCQ - Multiple Choice Question
SCQ - Single Choice Question

PBL - Problem Based Learning
SGD - Small Group Discussion