TOPICS FOR PRACTICAL LESSONS,
DISCIPLINE MEDICAL IMAGING
For the Vth year students Faculty of Medicine, university year 2022-2023

1. Medical imaging in oncology.

1. The role of radiological investigations in oncology.
2. Ultrasonography in oncology. Advantages, disadvantages. Indications, contrindications.
3. Computed tomography in oncology. Advantages, disadvantages. Indications, contraindications.
4. MRI in oncology. Advantages disadvantages.
5. Nuclear medicine methods in oncology. Advantages disadvantages.
6. Differential imaging diagnosis of benign and malignant tumors.
7. Imaging of metastases. Radiological types of bone metastases.

2. Medical imaging in gastrology.

1. Imaging diagnostic algorithm of digestive tract pathology.
2. Methodology of digestive tract imaging. Specific examination procedures: Interventional radiology.
3. Differential imaging diagnosis in inflammatory pathology of the digestive tract (gastritis, duodenitis, inflammatory bowel disease).
4. The differential imaging diagnosis of ulcer disease (stomach, duodenum, colon).

3. Medical imaging in surgical diseases.

1. Imaging methods for examination in surgical diseases. The value of abdominal ultrasound in surgical abdominal pathologies.
2. Imaging diagnostic algorithm in acute abdomen (standard radiograph, CT, ultrasonography).
3. Imaging evaluation in surgical pathology of the gallbladder. Cholangiography. Types: endoscopic, perioperative, postoperative on the Kehr tube (tube in "T"), by IRM. Indications of cholangiography by MRI.
4. Algorithm of imaging diagnosis in hiatal hernia.
5. Algorithm of imaging diagnosis in pathological masses: digestive tract, liver, pancreas, gall bladder.
6. Imaging evaluation of the operated stomach.
7. Imaging evaluation of the intraabdominal fluid.

4. Medical imaging in anesthesia and intensive care.

1. The imaging diagnosis of pulmonary edema. Acute respiratory distress.
2. Imaging semiology at various stages of development of pulmonary edema (venous congestion, pre-edema, edema).
3. Algorithm of imaging diagnosis in pulmonary artery thromboembolism. Radiological semiology of pulmonary artery thromboembolism (conventional radiography, angiopulmonography, computed tomography, direct and indirect signs).
4. Classification of adverse reactions to iodinated contrast agents.

5. Imaging in medical emergencies.

1. Imaging examination methods used in medical emergencies.
2. Algorithm of imaging diagnosis in strokes.
3. Methodology of imaging examination in chest trauma (standard radiography, CT, MRI, ultrasonography). Pneumothorax.
4. Methodology of imaging examination in polytrauma (standard radiograph, CT, MRI, ultrasonography).

6. Medical imaging in otorhinolaryngology.

1. Conventional radiography in otorhinolaryngology. Radiological anatomy.
2. Computed tomography in the exploration of middle and inner ear pathology.
3. The imaging examination methodology (standard radiography, CT, MRI) and imaging semiology of the paranasal sinus pathology.
4. Methods of investigation and imaging semiology in pathological masses of the ENT organs. Differential diagnosis.
5. Imaging diagnosis of adenoid vegetations.
6. Imaging diagnosis in ENT emergencies in adults and children (acute laryngotracheitis, epiglottis, foreign bodies).

7. Peculiarities of imaging investigations and normal radiological anatomy in children.

1. Methodology and particularities of imaging investigations in children. Indications, contraindications, radiation protection.
2. Particularities of imaging investigation in neonatal period.
3. Particularities of normal radiological anatomy in children and newborns.

8. Medical imaging in pediatrics.

1. Pneumonia in children. Imaging methods of investigation.
2. Mucoviscidosis. Clinical forms. Imaging methods of investigation.
3. Juvenile rheumatoid arthritis. Imaging methods of investigation.
4. Foreign bodies of the respiratory tract and digestive tract in children. Imaging methods of investigation. Optimal projections.
5. Hirschsprung disease. Imaging methods of investigation.

9. Medical imaging in neonatology.

1. Diagnostic imaging in respiratory distress of newborns.
2. Hyaline membrane disease. Imaging methods of investigation.
3. Diagnostic imaging in the transient tachypnea of newborns.
4. Diagnostic imaging in bronchio-pulmonary displazia.
5. Congenital bronchial-pulmonary malformations. Clinical manifestations during neonatal period. Imaging methods of investigation.
6. Imaging diagnosis in meconial aspiration syndrome.
7. First line imaging investigations in neonatal cerebral pathology.
8. Imaging diagnosis in necrotizing enterocolitis of newborns.
9. Esophageal atresia with and without tracheoesophageal fistula. Imaging methods of investigation.

10. Imaging in medical rehabilitation.

1. Radio-imaging methods and imaging evaluation of pulmonary system rehabilitation.
2. Imaging evaluation of rehabilitation therapy in heart failure.
3. Radio-imaging methods in osteo-articular rehabilitation.
4. The radio-imaging algorithm in musculoskeletal rehabilitation.
5. The influence of radio-imaging on neurological rehabilitation.

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