

Conspectus

1. X-ray tube - basic components. X-ray image - obtaining, essence, qualities.
2. Digital X-ray images - obtaining. Methods for archiving and transmitting images. DICOM. PACS.
3. Principles of computed tomography - modern development
4. Principles of ultrasound examination - application
5. Principles of magnetic resonance imaging – concept of sequence
6. Contrast tools for diagnostic imaging - classification. Advantages and disadvantages.
7. Radiation protection of staff and patients.
8. Imaging methods for examination of the respiratory system
9. X-ray diagnosis of airway diseases
10. Nonspecific inflammatory diseases of the lungs
11. Diseases of the pleura
12. Pulmonary tuberculosis. Classification. X-ray images in primary and secondary pulmonary tuberculosis
13. Lung cancer - diagnosis and staging with imaging methods.
14. Benign lung tumors. Echinococcus of the lungs
15. Occupational diseases of the lungs - silicosis
16. Methods for imaging of the heart, coronary vessels, large and peripheral vessels
17. Normal X-ray anatomy of the cardiovascular shadow
18. Imaging diagnosis of acquired heart defects
19. Diseases of the myocardium
20. Imaging diagnosis of pericardial diseases
21. Imaging in diseases of the aorta and peripheral vessels.
22. Imaging methods for examination of the esophagus and stomach. Normal X-ray anatomy of the esophagus and stomach
23. Diseases of the esophagus - diverticula, strictures, tumors, varicose veins
24. Imaging diagnosis of peptic ulcer of the stomach and duodenum. Complications.
25. Hiatal hernia. Benign and malignant tumors of the stomach
26. Imaging methods for examination of the small and large intestines. Carcinoma of the colon
27. Imaging methods for examination of the liver. Diffuse liver diseases.
28. Focal diseases of the liver - primary and secondary tumors
29. Imaging methods for examination of the biliary system. Diseases of the gallbladder and bile ducts.
30. Imaging diagnosis of the pancreas. Diffuse and focal diseases. Pancreatic cancer.
31. Imaging methods for examination of the urinary system
32. Normal X-ray anatomy of the urinary system. Varieties and anomalies.
33. Urolithiasis. Hydronephrosis.
34. Tumors of the kidneys, ureters and bladder. Tumors of the prostate gland.
35. Imaging methods in obstetrics and gynecology.
36. Imaging diagnosis of the mammary gland. Benign and malignant diseases of the breast.
37. Imaging methods for examination of the musculoskeletal system.
38. X-ray images of the main pathological processes in the bones
39. Traumatic diseases of the bones and joints - fractures, fissures, dislocations, dislocation fractures, subluxations
40. Osteomyelitis - acute, chronic. Atypical forms. Bone and joint tuberculosis.
41. Benign bone tumors - osteoma, osteoid-osteoma, osteoblastoma

42. Benign bone tumors - chondroma, osteochondroma. hemangiomas, osteoclastoma
43. Malignant bone tumors - osteosarcoma
44. Malignant bone tumors - Ewing's sarcoma. Myeloma. Chondrosarcoma
45. Inflammatory and degenerative-dystrophic diseases of the joints and spine
46. Aseptic osteonecrosis - Perthes' disease.
47. Imaging methods for examination of the central nervous system
48. Brain tumors.
49. Imaging diagnosis in ischemic stroke.
50. Imaging diagnosis of intracranial hemorrhages.
51. Pulmonary thromboembolism - modern imaging methods for diagnosis
52. Aortic aneurysm and dissection
53. Examination methods and X-ray images in acute abdomen - differential diagnostic plan. Perforation of a luminal abdominal organ. Ileus
54. Posttraumatic patient