Department of Diagnostic and Interventional Radiology

STRUCTURE, FUNCTION AND ORGANISATION OF THE INSTITUTE

Radiology is a medical specialty that employs the clinical and scientific use of imaging methods to both diagnose and treat disease.

Fields of activity of the clinic for diagnostic and interventional radiology:

- Diagnostic methods (all acquired image data are in digital format)
  - Radiography (Conventional Radiology)
  - Radioscopy (Fluoroscopy)
  - Computed Tomography (256-slice CT)
- Magnetic Resonance Imaging (1.5 Tesla - 3.0 Tesla, Non-proton MRI (Helium-3, fluorinated gases)
- Digital Subtraction Angiography (DSA)
- Sonography
- Mammography

Therapy methods (full spectrum of Interventional Radiology care):
- Balloon dilatation and stent implantation
- Occlusion of blood vessels
- Percutaneous tumor ablation
- Biliary tract interventions
- Biopsies and marking methods
- Percutaneous drainages

Patients treated with methods of interventional radiology which require in-patient monitoring are taken care in the ward of the Department of Radiology (which is used together with the Department of Radiooncology).

General responsibilities and specialties:
- Radiology Information System (Database since 1988)
- Picture-Archiving and Communication System (PACS) (Database since 1998)
- Teleradiology
- Clinical Trial Center Radiology
- Section of Medical Physics
- Section of Pediatric Radiology

MAIN FOCUS OF RESEARCH

Areas of research:
- Lung imaging using MRI and CT
- Interventional vascular and tumor therapy
- IT and image post-processing in radiology
- Innovative MRI techniques

Fig. 39: New 64-Channel Cardiac Receive-Only Phased Array Coil for use on MAGNETOM Skyra 3T and MAGNETOM Prisma 3T (left) and four chamber view at IPAT = 7 (right)

Fig. 40: Vascular model with a vascular bifurcation (upper box) and a stenosis (lower box)

Fig. 41: The new translational research MRI scanner: MAGNETOM Prisma

Fig. 42: The new translational research MRI scanner: Transport

Fig. 43: The new translational research MRI scanner: Lowering of the scanner via the courtyard of building 505

IMPORTANT PUBLICATIONS | MAX. 5


IMPORTANT PROJECTS | MAX. 5

Detection of pulmonary hemodynamics in probands with patients with pulmonary hypertension using high-resolution phase contrast MRI (MAIFOR) Project Manager: Dr. G Wirth Cooperation: Prof. S Konstantinides, CTH, Mainz Funding: MAIFOR Project, University Medical Center Mainz Sum: € 50,000 Project Duration: 2013 - 2015

Dynamic contrast enhanced-MRI in rectal cancer: Inter- and intraobserver reproducibility and the effect of slice selection on pharmacokinetic analysis Project Manager: Dr. A Hoekker Project Duration: 2010 - 2013

Evaluation of thyroid diseases in pediatric oncological patients after treatment with a high dosage of chemotherapy and/or radiation therapy of the head and neck Project Manager: Prof. G Staatz Cooperation: Prof. J Faber, Center for Childhood and Adolescent Medicine Project Duration: 2013 - 2014

Fig. 44: MRI in a patient with liver cirrhosis