

Neuroradiological Examination Methods

Skiagraphy

The most commonly indicated skiagraph examination in neurology is an X-ray of the spine in dorsalgia. In most cases, the examination shows only degenerative changes – deforming spondylosis, chondrosis, osteochondrosis, and intervertebral arthrosis. In patients with osteoporosis or after trauma, we look for fractures, which are most often compressive in the area of Th and L of the spine and are manifested by a decrease in the height of the vertebral body. The image of the lbi after trauma is obsolete nowadays because the examination by a neurologist has a higher sensitivity to exclude intracranial bleeding. In addition, patients with fissure calva may not have intracranial bleeding, and vice versa, many patients without fissures have extensive bleeding.

Dynamic images

Dynamic images of the spine are indicated to assess stability inolistosis, mutual displacement of vertebral bodies in a forward, neutral position, and tilt is assessed. Dynamic images can show a function block – an area where the spine is not developing.

Ultrasound

Ultrasound is used in neuroradiology to assess the patency of the arterial arteries – carotid arteries and vertebral arteries, in young children to image the brain and spinal canal.

Angiography

In neurology, it is mainly angiography of the magistral arteries to prove stenosis, aneurysm, and vascular malformations. During angiography, interventional interventions can be performed – balloon angioplasty, stent insertion, coiling aneurysms, and embolization of vascular malformations.

CT

CT of the brain

Acute CT of the brain is most often indicated to exclude bleeding, whether in a stroke or trauma. Intracranial hemorrhage is divided into epidural, subdural, subarachnoid, intracerebral, and ventricular. With an ischemic stroke, the finding on CT in the first few hours is either inconspicuous or normal. To assess the extent of the closure of the bed before the possible intervention, we perform CT angiography and perfusion examination of the brain. CT angiography should also be performed if the non-traumatic subarachnoid hemorrhage is found to rule out an aneurysm or vascular malformation.

CT of the spine

CT of the spine is indicated in patients after trauma to assess the extent of involvement and stability of the vertebrae, as well as to assess degenerative changes. CT allows for more accurate navigation to perform a root injection.

MRI

MRI of the brain is performed in T2, T1 weighted images, in FLAIR sequences with suppression of the liquor signal, diffusion maps and diffusion coefficient are formed. IR images provide excellent anatomical detail. MRI allows functional imaging of the brain and spectral analysis of the pathological process, making angiography. MRI is incomparably better than CT to evaluate most pathologies of the parenchyma of the brain. A frequent indication is an MRI of the spine to assess degenerative changes in the vertebral body and intervertebral disc, their relationship to the spinal cord and spinal nerves with the question of their oppression.

Links

External links

- Pictures on atlas.mudr.org (<http://atlas.mudr.org>)
- Classification and tables in radiodiagnostics at mudr.org (<http://www.mudr.org/web/>)
- Educational portal of the 1st Faculty of Medicine, Charles University – Radiodiagnostics: Quiz Neuroradiological Examination Methods (<https://el.lf1.cuni.cz/p18342258/>)