

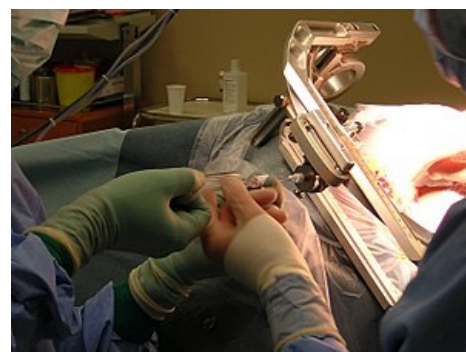
Stereotaxis

The stereotatic technique enables operations on deep brain structures with minimal tissue damage in the approach path.

- They are puncture procedures performed with a targeted trepanation drill bit with high targeting accuracy.
- They are used either in functional neurosurgery (affecting dyskinesia) or as a puncture biopsy, evacuation of cysts, abscesses, etc.
- For orientation, the patient has a stereotaxic device fixed on his head.

Functional operations

- The target structures are deep structures in the brain (nuclei of the thalamus, BG, etc.).
- Aiming is done using reference points in the vicinity III. ventricles (anterior commissure and posterior commissure) – shown by MRI or ventriculography.
- The procedure itself is the targeted destruction of the tissue of a defined volume, most often we do it with a high-frequency current or gamma radiation (LGK).
- Procedures are performed under LA (local anesthesia), due to contact with the patient - the possibility of clinical and EEG monitoring.
- Two phases:
 1. after deploying the device, we aim at the points according to the MRI, determine the target point;
 2. we make a trepanation drill bit and introduce the probe using the guidance device.



Biopsie mozku pod stereotaktickou kontrolou

- the stereotatic frame is made of special materials so as not to interfere with imaging techniques

Indication

- The most common are various forms of dyskinesia.
- Often in Parkinson's disease - in the case of pharmacologically uncontrolled tremor, which also affects rigidity, coagulation lesions are made in the nuclei of the thalamus, in the subthalamus and in the pallidum.
- Other controllable dyskinesias – chorea, athetosis, hemiballismus.
- In children with severe forms of DMO, dentate nucleus is destroyed of the cerebellum → we reduce muscle hypertonus.
- Less common indications:
 - chronic pain (nonspecific thalamic nuclei);
 - psychoses – bilateral cingulate gyrus coagulation.
- Sometimes we can implant electrodes and stimulate long-term.

Links

Sources

- BENEŠ, Jiří. *Studijní materiály* [online]. ©2007. [cit. 2010]. <<http://www.jirben.wz.cz/>>.

Reference

- ZEMAN, Miroslav. *Speciální chirurgie*. 2. edition. Prague : Galen, 2004. 575 pp. ISBN 80-7262-260-9.