

Endo-Neuro-Sonography(ENS): Erste klinische Serie

Endo-Neuro-Sonography (ENS): First clinical Series

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Ojective

The step from micro-neurosurgery toward Endo-Neuro-Surgery meant a step to a minimally invasive technique, but at the same time decreased its safety, which limits its applicability. The goal to further development had therefore been, to make neuro-endoscopy safer. After laboratory work, in a first series of 65 patients with a broad variety of lesions, a sono - catheter for trans-endoscopic imaging was applied for the first time in neurosurgery.

Material and methods

A trans-endoscopic sono-catheter (Aloka Deutschland GmbH, Düsseldorf/Germany) with a diameter of 1.9 mm (6F) and 2.5 mm (8F) was used and introduced into the working canal of an endoscope. The image produced by the probe is a 360° scan („brain radar“) displayed on a monitor, on which some parameters can be varied to get best view of different anatomical structures.

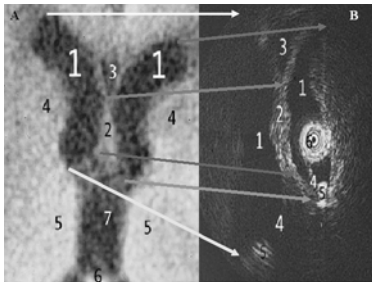
Results

In 51 cases intraoperative imaging was the main reason for investigation and in 15 cases neuronavigation was in the focus of interest. In 20 cases of tumor resection control, targeting a visualized remnant was necessary. ENS proved in this small series to make neuroendoscopy safer and easier by online and real-time imaging with high resolution. There are limitations and artifacts which should reveal themselves in laboratory and clinical experience.

Conclusion

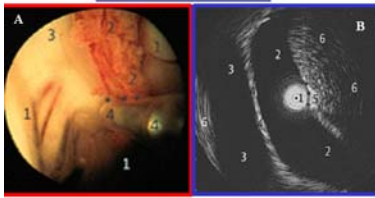
Endo-Neuro-Sonography now as it stands, is a technique, which can contribute to the concept of minimally invasive techniques in neurosurgery, as this presentation does describe.

Literature: Resch, K.D.M. Endo-Neuro-Sonography: trans-endoscopic sonography for neurosurgery. Springer 9/2004 (in press)



- 1 frontal horns of lateral cerebral ventricles
- 2 petrous part of temporal bone
- 3 small septum cyst (anat. variation)
- 4A caudate nuclei
- 4B foramen of Monro
- 5A thalamus
- 5B choroid plexus
- 6 pineal gland
- 7 third ventricle

CT Endo-Sono Correlation



- 1A: opendural veins cella media o fricht lateral cerebral ventricle
- 4A+1B: trans-endoscopic sono-probe
- 2A+5B: choroid plexus
- 2B: right lateral ventricle
- 3A+4B: pellucid septum
- 3B: left lateral ventricle
- 6: right thalamus

