

Sonographiegesteuerte Punktion intracerebraler Raumforderungen - Eine Alternative zur stereotaktischen Punktion ?

Ultrasound guided puncture of cerebral lesions - Alternative to a stereo tactical approach ?

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Introduction

The use of intraoperative ultrasound in neurosurgery was already being reported in the early 80's. In the meantime the equipment and technique were being improved. Nevertheless, only with a few neurosurgical departments had this technique been firmly established. As in our department became standard procedure to do a difficult puncture of a ventricle by ultrasound guidance, it appeared necessary that the preferences to an ultrasound guided puncture of cerebral lesions be reported.

Method

We use a burrhole ultrasound probe. A "normal" burrhole was enough, only needed to be somewhat expanded by the punch. To support the puncture we have a special tool at the probe which leads for example the needle or the catheter. With the puncture program the virtual way of the procedure can be visible.

Results:

In each case the lesion could be identified by the aid of ultrasound and successfully punctured. There were 11 neoplastic, 13 infectious and 6 primary cystic lesions punctured.

The ultrasound guidance had some advantages in contrast to the, until now, practiced stereotactical punctures. In each case the entire procedure took less than an hour. It required no preparation. Without additional expence, more points could be made on different puncture lines. Should the puncture fail the procedure can be immediately reviewed and corrected in the real-time picture. Bleeding can be avoided by switching the Doppler ultrasound but can also be immediately detected. Each of the residents learned quickly how to do a ultrasound guided puncture.

Conclusions

Ultrasound guided puncture of cerebral lesions has, contrary to the stereotactical puncture, more advantages and is very easy to learn