

Clinical report of stereotactic biopsy for the brain lesions: 1500 cases

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Objectives: This study is to investigate the methodology of diversified advanced image-guided stereotactic biopsy for the brain lesions, and to summarize significance and experience of image-guided stereotactic biopsy in nervous system diseases diagnosis.

Methods: Retrospectively reviewed 1500 cases of brain lesions since December 1987 to June 2012 in our department, underwent image-guided stereotactic biopsy, in which have CT-guided stereotactic biopsy in 650 cases, MR-guided stereotactic biopsy in 735 cases. For details, there is 1H-MRS-guided stereotactic biopsy in 70 cases, PET-CT-guided stereotactic biopsy in 5 cases, stereotactic-guided neuroendoscopic biopsy in 40 cases, frame stereotactic biopsy in 780 cases, frameless stereotactic biopsy in 720 cases (guided by CAS computer-assistant robot).

Result: In all the cases, 878 cases were male (58.5%), 622 were female (41.5%) (age: 1~85; mean: 39.7), 1241 (82.81%) cases were diagnosed pathologically as brain tumor, and 219 (14.57%) cases were diagnosed as non-tumor disease, 40 cases could not be diagnosed pathologically (2.61%), positive diagnosis rate of biopsy is 97.39%. Hemorrhage associated with biopsy caused 5 cases directed death, the biopsy targets were the pineal region and sellar region (0.25%) and caused hematoma without neurological deficits in 20 cases (volume of hematoma <10 ml), and caused large hematoma which need neurosurgical treatment in 9 cases (catherization and craniotomy evacuation of hematoma). There were no severe intracranial infection cases. Consequentially, the target and range of biopsy could be decided easily, meanwhile, accurate rate of diagnosis could be improved remarkably.

Conclusion: The stereotactic biopsy employing advanced image-guided technique represents a safe, reliable and minimally invasive method for pathological diagnosis of intracranial lesions. Moreover, the developments of biochemical imaging such as MRS and PET-CT images give new concept to stereotactic biopsy.

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