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Frameless Stereotactic Cerebral Biopsy: Our Experience in 296 Cases.

Fрати A, Pichierri A, Bastianello S, Raco A, Santoro A, Esposito V, Giangaspero F, Salvati M.

Neurosurgery, IRCCS Neuromed, Pozzilli, Italy.

Abstract

Aims: To evaluate the reliability, safety and accuracy of a the frameless stereotactic system in our clinical series and the differences between head fixation by means of a standard Mayfield head holder and the pinless FESS frame, and to evaluate the usefulness of biopsy targeting on the basis of magnetic resonance spectroscopy (MRS) data. **Methods:** The spectroscopic analysis was used to facilitate the targeting of the lesion. The fusion image function embedded in the Neuronavigation Unit was used postoperatively to assess the level of accuracy of the biopsy. The grading of the glioma specimens was correlated to the spectroscopic data. **Results:** 296 patients underwent cerebral biopsy in 8 years. The diagnostic yield was 99.7%. The spectroscopic choline/N-acetyl aspartate ratio in different areas of the same tumor correlated well with the histological grading of the lesion. **Conclusion:** The frameless stereotactic systems guarantee excellent biopsy results. Advanced imaging, in particular MRS, facilitates the correct targeting of nonenhancing lesions.

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