

Transient crossed aphasia during focal right-hemisphere seizure

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In nearly all right- and left-handed individuals, language is bound to the left hemisphere. Acquired language disorders subse-

quent to right-hemisphere brain lesions in right-handed subjects amount to 1 to 3% of aphasic syndromes only.¹ We report the rare case of a 59-year-old right-handed woman with transient global aphasia as the sole manifestation of a focal seizure (figure 1) due to a tumor of the right temporal lobe. Language functions recovered completely after seizure termination. fMRI demonstrated exclusive hemodynamic activation within right perisylvian areas during speech production and perception (figure 2). After tumor resection histologic examination revealed an astrocytoma World Health Organization grade III and the patient underwent polychemotherapy.

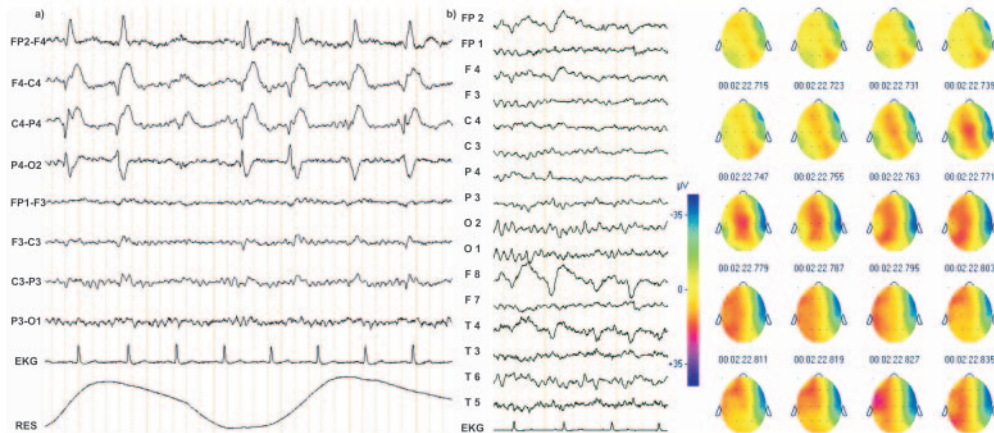


Figure 1. (A) Bipolar ictal EEG recordings (international 10/20 system) displayed right-hemispheric sharp waves extending across the entire seizure episode without propagation to the left side. (B) Source derivation after seizure termination shows a delta focus with a maximum at right-temporal leads (blue color-coding in topographic maps calculated at intervals of 8 msec).

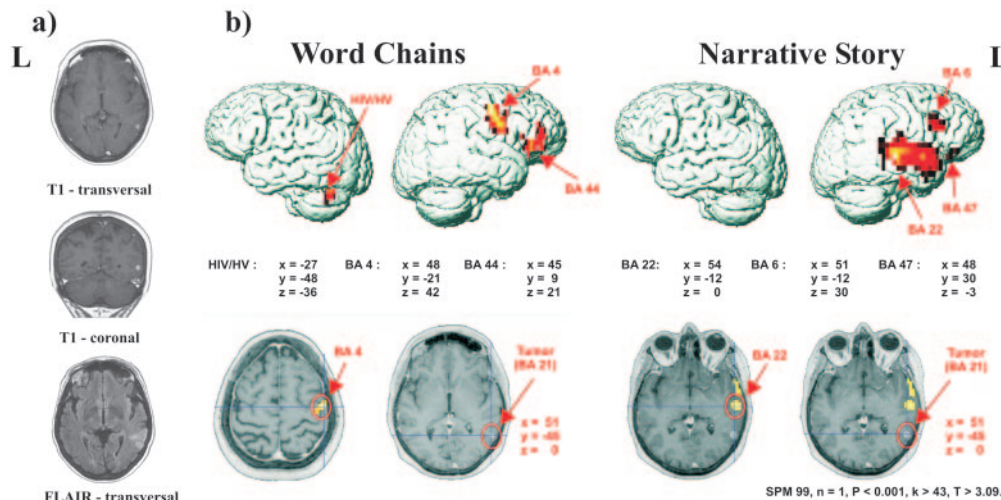


Figure 2. (A) T1- and T2-weighted (fluid-attenuated inversion recovery) MRI displaying a central necrotic tumor (\varnothing 7mm) within the middle temporal gyrus surrounded by peritumoral edema. (B) fMRI activity during speech production (word chains) and perception (narrative story) superimposed on individual magnetization prepared rapid acquisition gradient recalled echo.² The fMRI scans also display the distance between the tumor and the highest activated voxel during speech production and perception. Based on these data, it was expected that extended tumor biopsy should not yield any permanent aphasic deficits.

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