Transient aphasia

Permanent aphasia is the result of brain damage, while transient aphasia can be caused by any number of fleeting environmental conditions. Although most cases of transient aphasia are not serious, temporary aphasia sometimes suggests an underlying health problem.

Transient aphasias are often observed in the first few days after a patient has undergone resection in the language-dominant hemisphere.

One hundred ten patients undergoing resection to the language-dominant hemisphere participated in the study. Language was evaluated prior to surgery and 2-3 days and 1 month postsurgery using the Western Aphasia Battery and the Boston Naming Test.

Voxel based lesion symptom mapping was used to identify relationships between the surgical site location assessed on MRI and deficits in fluency, information content, comprehension, repetition, and naming.

Seventy-one percent of patients were classified as aphasic based on the Western Aphasia Battery 2-3 days postsurgery, with deficits observed in each of the language domains examined. Fluency deficits were associated with resection of the precentral gyrus and adjacent inferior frontal gyrus cortex.

Reduced information content of spoken output was associated with resection of the ventral precentral gyrus and posterior inferior frontal gyrus (pars opercularis). Repetition deficits were associated with resection of the posterior superior temporal gyrus. Naming deficits were associated with resection of the ventral temporal lobe cortex, with midtemporal and posterior temporal damage more predictive of naming deficits than anterior temporal damage. By 1 month postsurgery, nearly all language dysfunctions were resolved, and no language measure except for naming differed significantly from its presurgical level.

These findings show that transient aphasias are very common after left hemisphere resective surgery and that the precise nature of the aphasia depends on the specific location of the surgical site. The patient cohort in this study provides a unique window into the neural basis of language because resections are discrete, their locations are not limited by vascular distribution or patterns of neurodegeneration, and language can be studied prior to substantial reorganization [1].

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Wilson SM, Lam D, Babiak MC, Perry DW, Shih T, Hess CP, Berger MS, Chang EF. Transient aphasias after left hemisphere resective surgery. J Neurosurg. 2015 Sep;123(3):581-93. doi: 10.3171/2015.4.JNS141962. Epub 2015 Jun 26. PubMed PMID: 26115463; PubMed Central PMCID: PMC4558229.