

COMMENT The Geschwind-Galaburda theory of cerebral dominance invokes in utero testosterone-induced-immune disorders and left-handedness by effects on the thymus and the brain. Their clinical observations showed a higher frequency of immune diseases, migraine, and developmental learning disorders in left-handed individuals and their families.

ALEXIA, AGRAPHIA, AND FRONTAL LOBE DAMAGE

The case history of a right-handed woman who developed severe and stable alexia and agraphia following a circumscribed surgical lesion in the premotor cortex is reported from the Department of Neurology, Division of Behavioral Neurology and Cognitive Neuroscience, University of Iowa College of Medicine, Iowa City, Iowa. The lesion was above Broca's area in Exner's area. Her visual perception, intellect, memory, oral spelling, and drawing were normal and she was not aphasic or hemiparetic. She was unable to read sentences and her reading of single words and letters was severely impaired. She could not write recognizable letters or words. By contrast she was able to write numbers and perform written calculations without difficulty. These dissociations of function provide evidence of specificity of cognitive and neural representation. (Anderson SW, Demasio AR, Demasio H. Troubled letters but not numbers. Domain specific cognitive impairments following focal damage in frontal cortex. Brain June 1990; 113: 749-766).

COMMENT The isolated simultaneous occurrence of alexia and agraphia is rare. In this case the anatomical lesion within the left frontal lobe was unusually circumscribed. The sector of association cortex in the frontal lobe, known as Exner's area, appears to be related to the ability to read and write. The pathology of the small lesion removed surgically was a single metastasis from an adenocarcinoma of the lung. Neurological evaluation was normal except for the cognitive defect described.

The neuroanatomical basis of developmental dyslexia has been debated since this hypothesis was proposed by Orton in 1937. Patterns of task related slow-brain potentials have been investigated in six dyslexic youths by Landwehmeyer B et al (Arch Neurol July 1990; 47:791-797). Whereas control subjects revealed greater left hemisphere negativity during linguistic tasks, the reverse was found with dyslexics. The authors, working at the Neurologische Universitätsklinik, Freiburg, West Germany, concluded that dyslexia is associated with changes in the lateral distribution of cortical activity during certain types of language processing.

FRONTAL LOBE FUNCTION AND ATTENTION DEFICITS

The results of a psychological test battery administered to 54 clinic referred children aged 8 to 12 years with attention deficit disorders are reported from the Georgia Children's Center and the Department of Psychology, University of Oregon, Eugene, Oregon.