LETTERS TO EDITOR

Transitory Alexia without Agraphia Following Head Injury : Letter to Editor

Alexia without agraphia (also called posterior alexia or associative alexia) is a rare disturbance usually due to vascular etiology, but the syndrome may also be seen in CNS infections and tumors. Head injury has not been mentioned as one of the etiological factors.

A 35 year old right handed female sustained head injury in a road traffic accident. She had transient loss of consciousness followed by gradual recovery. Glasgow coma score on admission was 12/15, and there was no other neurological deficit. Non -contrast CT brain showed a small extradural hematoma over the right temporoparietal region and a small area of hemorrhagic contusion over the left frontal convexity. Her hematological, biochemical and coagulation parameters were within normal limits. Twenty-four hours later, although her GCS was 15/15, she was detected to have profound inability to read. She could not identify individual letters or words, but writing, both spontaneous and to dictation was normal, as was spelling and copying. She could not read her own writing. However, her spontaneous speech, fluency, naming (except colour naming) and auditory comprehension were normal. There was no associated visual field defect,agnosia, acalculia or right left dissociation. Mini-mental examination score was within normal limits. Repeat CT brain did not reveal any change in the appearances of the previously observed lesions, or in the brain. Conservative management was continued and she showed gradual and complete recovery from alexia over the next three days.

Dejerine, in 1891, described the first case of alexia without agraphia and postulated that the left angular gyrus was critical for word recognition and writing. The angular gyrus receives : (a) fibres conveying the visual-verbal information from the left occipital cortex, which course in a lateral, dorsal and frontal direction in the vertical fasciculus, (b) fibres conveying visual-verbal information from the right visual area, that cross in the middle of the splenium to reach the left occipital cortex and then proceed in the vertical occipital fasciculus. The vertical occipital fasciculus thus conveys visual information from both the occipital cortices to the angular gyrus for verbal processing. Fibres for colour naming from the right occipital cortex course more dorsally in the splenium to terminate in the mesial temporoparietal lobes, mainly in the rostral lingular and parahippocampal regions. Alexia without agraphia occurs when there is damage to pathways conveying visual input from both the hemispheres to the dominant angular gyrus, which itself remains intact but disconnected from visual regions. Lesions in the rostral lingular and parahippocampal regions are almost always associated with right homonymous hemianopia and impairment of colour naming. Based on these data, the anatomical substrate for various subtypes of alexias without agraphia and their clinical features has been summarised by Kumar and Murthy. A rare variant of this syndrome takes the form of alexia without agraphia and without hemianopia. A deep lesion in the white matter of the left occipital lobe, at its junction with the parietal lobe interrupts the projections from the intact visual cortex to the language areas, but spares the geniculocalcarine pathway. A single lesion in the dominant occipito-temporal paraventricular white matter or a more superior and rostral lesion in the dominant hemisphere parieto-occipital or parietal white matter (subangular or paraventricular alexia) can also lead to alexia without agraphia. In our patient the site of the lesion was possibly the deep parieto-occipital periventricular white matter, since she did not have visual field defects or object agnosia. The usual cause of alexia without agraphia is infarction in the region of left posterior cerebral artery, which produces dominant...
occipital and splenial infarction. These patients have right (dominant) hemianopia. Head injury as a cause of alexia without agraphia has not been mentioned in English medical literature, although there is one report in German literature. It is likely that there was interruption of vertical fasciculus by shearing of the deep white matter in the occipital lobe in our patient. Alexia without agraphia is usually a permanent disorder. However, transitory syndrome of alexia without agraphia has been observed in toxoplasma encephalitis, stroke and vascular lesions and occipital lobe tumor.

Alexia without agraphia may rarely be observed following closed head injury. In mild head injury it may be due to functional disconnection, and is likely to be reversible. Repeated neurological evaluation and keen observation are mandatory to detect such lesion.

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References