Role of the pulvinar in ideomotor praxis

The production of learned skilled movements (praxis) is mediated by a modular network of cortical and subcortical structures that may include the thalamus. We report a patient with a left medial occipital, inferior temporal, and pulvinar infarct who showed a bilateral ideomotor limb apraxia. We attribute her apraxia to the pulvinar lesion.

The patient was a 76 year old, right handed woman who had a left posterior cerebral artery embolic infarct. We followed up the patient from five to the end of 17 months after the stroke during which time her examination did not change. On examination she had a right homonymous hemianopia and mild increase of reflexes on the right with normal strength and sensation. She was fully orientated except to year. She produced fluent aphasic speech with preserved auditory comprehension and repetition, had amnesia, colour anomia, acalculia, a lexical agraphia, and read by a letter by letter strategy. Her figure copying was apraxic. Oral praxis was normal. She showed an ideomotor limb apraxia bilaterally.

Magnetic resonance imaging of the brain with horizontal, coronal, and sagittal slices was performed at five months after the stroke (figure). The stroke involved the left medial occipital lobe, inferoposterior temporal lobe, and the pulvinar nucleus of the thalamus.

We tested the patient with several sections of the Florida apraxia battery. She was able to recognise all tools (for example, hammer, scissors) used in testing.

She was given the name of each of 20 tools (transitive gestures) and 10 intransitive gestures (meaningful gestures that do not involve tool use—for example, salute) and asked to demonstrate the appropriate gesture. She was asked to use her right hand to perform all requested gestures and, subsequently, to use her right hand. Error types included content errors (the correct movement but for the wrong tool), temporal errors, spatial errors (errors in the movement, relation of the hand to the tool, or the

Screening for cognitive dysfunction in neurodegenerative illness

The current profusion of clinical trials of antideementia compounds adds renewed urgency for accurate patient screening. There are a number of brief assessment instruments for use by the clinician to aid in the determination of dementia or other cognitive dysfunction. All scales may not, however, be equivalent or interchangeable. We have investigated the equivalence of two particularly frequently used scales (mini mental state examination1 and the Mattis dementia rating scale2) in three clinically demented populations: a Huntington’s disease group (n = 13), and a Parkinson’s disease group (n = 10). The Mattis scale and mini mental examination were strongly correlated in the Alzheimer's disease sample (r = 0.78), but not in the Huntington's disease group (r = 0.15) or the Parkinson's disease group (r = 0.15). Further investigation of the subscales in each test yielded a possible explanation for these discrepancies. The tests comprise sets of subscales, each of which assesses function in a different domain of cognitive function. The only common domain covered by both tests is attention and memory. If these are the only domains of interest, then either test will suffice. Both functions are affected in Alzheimer’s disease, which may underlie the strong correlation between the two tests in this group. Due to subcortical influences in Huntington’s disease and Parkinson’s disease, however, frontal lobe dysfunction tends to be a prominent part of the clinical presentation. Only the Mattis dementia rating scale assesses lobe function in its conceptualisation, and initiation and perseveration subscales. In our samples, these two subscales were sensitive to overall dementia severity in the Huntington’s disease group and the Parkinson’s disease group, but not in the Alzheimer’s disease group. No subtest scores on the mini mental state exam achieved this level of sensitivity to subcortical dementia. Therefore, when integrity of the subcortex and frontal lobe may be of concern, the Mattis dementia rating scale seems to be the more appropriate screening tool to use.


Screening for cognitive dysfunction in neurodegenerative illness.

L McFadden, M Sampson and E Mohr

J Neurol Neurosurg Psychiatry 1994 57: 1282
doi: 10.1136/jnnp.57.10.1282