

APHASIA, ALEXIA, AND AGRAPHIA

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By utilizing these tests and neighborhood neurologic and aphasic signs, a number of distinct varieties of anomia can be postulated and a neuroanatomical correlation suggested for each variation (see Ch. 15).

It must be remembered that a number of "nonaphasic" cerebral abnormalities such as dementia, confusional states and others also produce notable problems in word-finding. Word-finding difficulty is not an exclusive indication of aphasia. When anomia is present, however, aphasia must be seriously considered and the responses to word-finding tests may prove helpful in establishing the appropriate diagnosis.

Reading

Loss of the ability to read following brain damage (alexia), either with or without accompanying aphasia, has been recognized for centuries and reading is comparatively easy to evaluate, at least in a gross manner. When quantified results are required, however, standardized test material will be necessary. Simply offering the written name of a body part or room object for the patient to identify is an easy reading test to perform at the bedside. If the patient is successful at this level, more difficult written material including phrases or sentences, dependent on low frequency or relational types of words, can be presented for interpretation. An even more challenging bedside test of reading ability is to request understanding of paragraph-length material from a newspaper or magazine. A simple determination of the retention of reading comprehension is to request that the aphasic patient recognize words spelled aloud by the examiner (Geschwind, 1962; Howes, 1962). While not always accurate, most patients with parietal-temporal alexia fail to recognize words spelled aloud, while those with occipital alexia perform quite well (see Ch. 11 for details). The most common error made in the testing of reading ability is equating the ability to read out loud with the ability to comprehend written material. Many aphasics with verbal output disturbances fail when asked to read aloud but some of them comprehend written material adequately. The opposite can also be seen, aphasic patients who read aloud flawlessly but in whom comprehension of what has been read cannot be demonstrated. It is the ability to comprehend written language that is to be monitored; it is the loss of this ability that is called *alexia*. Alexia will be further discussed in Chapter 11.

Writing

Almost without exception, every aphasic suffers some difficulty in writing (*agraphia*). An initial test is to request that the patient write his own name. Some aphasics fail even this most elementary test, but many succeed and it must be recognized that the ability to sign one's name is sufficiently over-learned that many aphasics with severe writing disturbance produce their own signature readily even when they cannot write any other words. Testing of writing ability, therefore, should not stop at the level of the patient's signature. Writing tests should include the ability to write words and sentences to dicta-

tion and to produce written sentences to command (i.e., describe your job). In nonhemiplegic patients, writing should be tested in each hand. Comparison can be made of the ability to copy written material with the ability to produce similar words to dictation. There are qualitative variations in agraphia and four aspects of writing disorder deserve specific attention: 1) defects of the mechanics of handwriting (orthography); 2) abnormalities of written syntax; 3) disorders of semantic content and 4) an inability to spell. Unfortunately, the variations of writing disorders that can follow brain damage combined with marked premorbid individual variations have defied demonstration of exact clinical-anatomical correlations of agraphia. At present, tests of writing ability are primarily used as screening devices for language disturbance, but in the future variations in agraphia should come to have considerable meaning for the student of language problems.

In summary, the clinical testing of aphasia is inexact, nonstandardized and constantly being altered. Therein lies both the weakness and the strength of the clinical approach. Many of the techniques utilized in the formal aphasia batteries and in the research tests of language dysfunction were derived from the experiences gained in the clinic or at the bedside. An experienced examiner can perform a clinical evaluation on an aphasic patient's language in only a few minutes and, by focusing on the primary problem, obtain an in-depth view of the type of aphasia that is often more accurate and exacting than that available from either the formal aphasia batteries or the most advanced research techniques. However, even in the best hands, the results of clinical testing are subject to theoretical biases and in the hands of inexperienced examiners the clinical evaluation can prove disastrously misleading. The need for more exact, standardized testing techniques is obvious.

FORMAL TESTS OF APHASIA

Following the lead of Henry Head (1926), Weisenburg and McBride (1935) produced a battery of tests to define the language qualities of aphasic patients. While never widely used, this battery was the harbinger of a new era in aphasia assessment. In the past 25 years a large number of formal test batteries have been devised for the assessment of aphasia, standardized to a greater or lesser degree and utilized widely. While there is considerable overall similarity in the tests, there are also a number of significant differences. There is no consensus as to which battery or batteries are best and all of the tests to be mentioned are favored and in use somewhere at the present time. Almost every aphasic entering a formal aphasia therapy program is given part or all of one or more of these tests and the results from the tests are widely used in both research projects and clinical reports. This section will list some of the currently popular tests along with some of their more distinctive characteristics. The test batteries will not be outlined in full detail; readers desiring such information are referred to the references given for each test battery.

One of the earliest tests and one still in wide use is Eisenson's *Examining*