**Current Concepts of Cerebrovascular Disease — Stroke**

**Treatment of Aphasia Following Stroke**

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The medical practitioner often has significant success in managing his patient to physical recovery from a life-threatening, major cerebral infarction. However, the stroke brings in its wake emotional, psychological, vocational, and behavioral problems for the surviving patient and his family. Preparation for coping with these problems is usually lacking, and families and survivors of stroke are often left to their own devices in seeking help.

One of the most pernicious post-stroke problems faced by patients and families is the presence of the language disorder, aphasia. Physicians usually recommend physical therapy for their patients' motor problems or occupational therapy for both sensory and motor difficulties; yet they seem to share the helplessness felt by their patients about language difficulties shown by a curious reluctance to recommend evaluation of the aphasia by the speech/language pathologist. "The value of speech therapy in the adult aphasic patient is questionable; it is a difficult, frustrating task for therapist and patient." This flat dismissal, unsubstantiated by experimental evidence, appears in a recent introductory neurology text and serves as a typical example of the nihilistic attitude toward therapy. The remarks that follow suggest that the outlook for benefit is not necessarily so gloomy and may somewhat dispel this attitude of pessimism regarding return of language function. Four topics will be explored briefly: 1) major aphasic syndromes will be described; 2) treatment for the aphasic patient will be discussed; 3) some recent evidence of the efficacy of treatment will be summarized; and 4) ways to find out what services are available in a given community will be suggested.

**Aphasic Syndromes**

Although aphasia can result from a number of disease processes ranging from head injury to tumor, by far the predominant cause of this disorder of language is stroke. It has been estimated that between one-third and one-half of left hemispheric strokes will produce aphasia. Aphasia itself is not a particularly descriptive term, since the patterns of language disturbance subsumed represent a wide range of deficits in language skills as well as varying degrees of severity. Nomenclature in aphasia is notoriously slippery and subject to change without notice depending on whose work in aphasia is being read. Generally, however, lesions involving the posterior distribution of the middle cerebral artery produce the so-called fluent aphasias, while lesions involving its anterior distribution produce a variety of syndromes which are referred to as nonfluent aphasias. Thus, fluent aphasias appear to involve temporal-parietal cortical regions, nonfluent aphasias the inferior portion of the frontal lobe.

The most noteworthy of the fluent aphasias is Wernicke's aphasia, in which the aphasic patient speaks with at least normal and often excessive volubility, referred to by some as "press of speech." The speech of such a patient often lacks clear content and direction and sometimes consists almost entirely of neologic jargon. Of most significance is the severe loss by the patient with Wernicke's aphasia of the ability to comprehend not only the speech of others but often his own as well. Reading and writing skills are similarly affected.

Another of the fluent aphasias is anomic aphasia, in which the patient's otherwise almost normal speech is marred by word-finding difficulties. Comprehension of language is almost always near normal in anomic aphasia, as is reading, although the groping inability to produce substantive words is mirrored by a similar difficulty in writing. Anomic aphasics, given the word they are searching for, usually recognize it immediately and can repeat accurately.

Conduction aphasia is still another fluent aphasia syndrome. In conduction aphasia, comprehension of language is good, but speech is marred by inappropriate word use. Such errors in speech sometimes are frequent enough to cause the patients to sound as bizarre as Wernicke's aphasics. The hallmark of the conduction aphasic in his disproportionate inability to repeat and to make use of verbal cues supplied by others, even though he is quick to recognize the correct word when it is said by another person. Reading and writing are usually rather well preserved. Although there are a few other fluent syndromes, these are the most common.

Nonfluent aphasia is perhaps better known as Broca's aphasia, which is characterized by paucity of speech output, difficulties in word-finding, labored and slow rate of speech, and omissions of small, grammatically important words (e.g., "the," "is," and "on"). Comprehension of spoken and written
language is generally good, although writing problems commonly mirror speech output.

It is not unusual for the aphasia-producing lesion to encompass both the anterior and posterior speech areas with mixed or global aphasia as the result. Global aphasia produces the paucity of speech typical of nonfluent aphasia and the comprehension problems typical of the Wernicke's patient. Generally considered to be the most severe of the common aphasic syndromes, it is unfortunately the most frequently seen.

Aphasias can exist in these "pure" forms. Often, however, they occur in combination with a variety of apraxias, as well as dysarthria, all of which complicate the diagnostic and therapeutic picture. The first responsibility of the speech/language pathologist is to clarify some of the complexities so that the relative contributions of motor speech problems, auditory comprehension problems, central language processing problems, and word retrieval problems to the total aphasia picture can be measured.

The Language Pathologist
and the Aphasic Patient

Before undertaking treatment, the language pathologist will conduct a detailed evaluation. Some aphasic patients are not good candidates for rehabilitation, notably those with extremely severe global aphasia or those whose aphasias coexist with other problems such as dementia or serious medical problems which are incompatible with arduous language work. The first goal of evaluation is, therefore, to determine whether clinical intervention is feasible. Detailed analysis of the aphasic patient's language performance aimed at defining and described the type of aphasia, the extent of his auditory comprehension and/or motor programming deficits, and his language strengths and weaknesses will help the language pathologist to determine the most profitable approach for the patient's rehabilitation.

How formal the initial evaluation will be is directly related to how long after onset the evaluation is made. Early evaluation tends to be less structured, later evaluations more structured. One constant aspect, whether early or late, however, is contact and counseling with the aphasic patient's family. Although many of the decisions about the treatment depend on the evaluation itself, supportive counseling is always initiated at the time of the first evaluation.

One unique benefit of early involvement of the language specialist is this counseling aspect. Certified speech/language pathologists are trained in counseling technics. Those who work with aphasic patients are also aware of the range of rehabilitation services and support groups, such as stroke clubs, in the community. As a result they are prepared to discuss resources with the aphasic patient and his family, as well as to provide emotional support.

There are many approaches to rehabilitating the aphasic adult: direct work on underlying processes such as memory, training in language comprehension, developing facility with alternative communication systems such as Amerind (American Indian Sign) or communication boards, retraining speech by melodic intonation approaches, writing and reading practice, teaching the patient to use compensatory communication strategies, and facilitating the ability to use nouns — to suggest only a few. Which technics are used depend on the patient's problems and strengths in communicating.

Treatment is frequently initiated as soon as the patient's medical condition is stable in an effort to capitalize on the spontaneous recovery period, which for language functioning is usually considered to be completed within the first 3 months if thromboembolic stroke is the cause of the aphasia. Whether this is the optimal time to intervene or whether language therapy should wait until spontaneous recovery is complete is not known and is presently the focus of a large VA cooperative study. Treatment can take place either in clinical settings or at home, and both individual and group therapy approaches are used. Treatment generally continues as long as the patient makes gains. Although experimental evidence is lacking, most experts agree that intensive treatment, that is, sessions at least once a day, is more effective than less frequent sessions.

Regardless of the optimal time for initiating direct treatment, early involvement of the speech/language pathologist is important, not only for the counseling functions described previously, but for other reasons as well. Foremost among them is that the evaluation itself can provide hospital staff and families with useful insights about how best to facilitate communication with the aphasic person. It is an unfortunate commonplace that patients with limited or no verbal output are often assumed to be globally aphasic when, in fact, their comprehension of language may be quite good, or conversely, they may be assumed to have excellent comprehension — that is, to have a profound Broca's aphasia — when their speechlessness really indicates a global problem with language. Even more common are the aphasic patients with fluent, inappropriate, jargon-replete speech who are assumed to be demented. These patients are exhibiting Wernicke's aphasia, in which the unusual and often bizarre speech is related to disturbance in the comprehension of language. Feedback from the language specialist can help to unravel some of these false assumptions and help family and hospital staff to gear their own communication with aphasic patients more appropriately.

A related secondary reason for early involvement is that aphasic syndromes tend to evolve, to change into simpler patterns over time, in a large number of cases. Family, aphasic patient, and staff will be more sensitive to such change as a result of early assessment.

Efficacy of Treatment

On what foundations do the preceding comments rest? There is little point in recommending extensive testing and demanding therapy if treatment is as
questionable, difficult, and frustrating as was suggested in the previously cited negative attitude. The problems inherent in developing a single, thorough, adequately controlled study on the effectiveness of aphasia rehabilitation are great, possibly insurmountable. They involve statistical matters, such as adequate sample size; ethical questions, such as the justification for withholding treatment; and problems with controlling the host of variables presumed to influence recovery from aphasia, including age, initial severity of the aphasia, the role of spontaneous recovery, and type and frequency of treatment. A Lancet editorial recently discussed these problems in assessing recovery from aphasia and concluded that until more is known about aphasia itself, investigations should concentrate on small, well-defined studies comparing one mode of treatment with another. Of the more than 20 such presently available studies on the effectiveness of treatment, the clear majority conclude that treatment has a positive effect on recovery from aphasia.

The most impressive evidence for the effectiveness of treatment, however, comes from a recently completed Veterans Administration cooperative study. Well-designed and tightly controlled, the study addresses the Lancet criteria quite explicitly by comparing the effectiveness of one year of individual versus group treatment for a large number of aphasic patients carefully screened to approximate the normal distribution of post-stroke aphasics at 5 VA hospitals. The results showed that patients receiving either of the 2 types of treatment made significant gains in language ability. The few differences between treatment groups favored individual over group treatment.

There is no doubt that more evidence on the effectiveness of treatment needs to be obtained. However, the bulk of the present evidence shows that treatment contributes substantially to improving language function.

Even less amenable to rigorous experimental test is the question of language gain. Improvement in the quality of life for aphasic patients is a potential side benefit of language treatment. It is a belief, but only that, that part of the benefits of language treatment are beyond scientific measurement, having to do with the counseling functions described earlier. The language pathologist is a unique purveyor of "follow-through" for persons who have had a stroke. This aspect of efficacy should not be ignored.

Locating Services

Most urban hospitals and a substantial number in smaller communities have speech and hearing clinics. Staffed by certified speech/language pathologists, most provide inpatient and outpatient services for aphasic adults. The place to begin is in one's own hospital. If services are not available there, another hospital in the community may provide aphasia rehabilitation service. Most Veterans Administration hospitals have audiologic-speech pathology services, as well as ties to the community which make them not only the outpatient referral source of choice for most veterans, but the conduit through which it is possible to check on where to refer nonveteran patients.

Local chapters of the American Heart Association can provide valuable publications for the patient and his family as well as information on local sources of therapeutic help. The American Speech and Hearing Association, the professional organization to which certified speech/language pathologists belong, can also be approached for information on agencies in the community. The Association publishes an annual Guide to Clinical Services, purchasable through its office. Specific referral questions directed to that office will also be answered. For more information, write to either Dr. Peggy S. Williams or Dr. Barbara Dabul, Clinic and Hospital Program, American Speech and Hearing Association, 10801 Rockville Pike, Rockville, Maryland 20852 (301-897-5700). In addition, assistance is often available through other dedicated voluntary health organizations such as the Easter Seal Foundation, agencies of the local United Way, or equivalent public volunteer organizations.

References

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