Acute aphasia in multiple sclerosis
Brooke Hatfield MS, CCC-SLP & Suzanne Coyle Redmond MA, CCC-SLP
National Rehabilitation Hospital, Washington, DC

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Traditional understanding of multiple sclerosis (MS):
• A progressive, autoimmune disease characterized by demyelination of the white matter of the central nervous system.
• Periods of relapsing and remitting sensorimotor sequelae, which can result in dysarthria and dysphagia.
• Associated cognitive-communication impairments in 30 – 70% of patients with MS at some stage consistent with white matter involvement, including decreased episodic memory, slowed information processing, and decreased executive functions (Wallin et al., 2006).
• Language and intellectual function remain intact (Randolph et al., 2004), though patients are easily fatigued.
• Speech-language pathologists (SLPs) are frequently involved in the management of the speech and swallowing impairments, as well as developing compensatory strategies for the cognitive-communication sequelae and endurance training.

A new perspective as technology improves:
• As neuroimaging technology is advancing, MRI is detecting cortical gray matter lesions, even in the earliest stages of MS (Kidd et al., 1999; Pirko, et al., 2007).
• Gray matter-related processes may even be the earliest clinical manifestation of MS (Pirko, et al., 2007).
• Aphasia is frequently associated with diseases of the gray matter.

Despite this conceptualization:
• Aphasia, a disorder associated with cortical involvement, is rarely reported, occurring in 0.7 - 3% of the MS population (Lacour et al., 2007; Devere et al., 2000; Erdem et al., 2001).
• Even when language modality impairments such as alexia and decreased auditory comprehension are described – Jonsdottir et al, 1998 (pg. 1474) reports “It may be appropriate to consider difficulties with the semantic access the result of slowed processing of a single component of a language system.”

A large scale study of acute aphasia in MS (Lacour et al., 2004)
• 2,700 patients with MS in France – 22 (0.81%) were diagnosed with acute aphasia
• Of those 22 patients:
  • 91% presented with relapsing, remitting form of MS at onset
  • 36% aphasia was first clinical manifestation of MS
  • 100% nonfluent or unclassified (vs. fluent)
  • 86% treated with methylprednisolone (Medrol), suppresses inflammation
  • 64% “full recovery”; in remaining 36% residual sequelae were “not severe”
  • Mean recovery time was 15.7 weeks

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<th>Explanations for the presence of aphasia in the MS population</th>
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<td><strong>Diaschisis</strong> (Devere et al., 2000)</td>
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<td><strong>Giant Plaques</strong> (Achiron et al., 1992)</td>
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Case Report

Background Information
- 35 year-old female diagnosed with MS on 1/10/2007.
- Experienced acute onset of speech difficulties and minimal unilateral right-sided weakness over a period of two days beginning 2/27/2007.
- MRI of 2/26/2007 revealed a 4 cm. lesion in the left centrum semiovale and small lesions in the left frontal subcortical white matter consistent with active demyelinating disease.
- Admitted to acute care hospital with diagnosis of MS exacerbation.
- Steroid treatment resulted in significantly improved motor function.
- Discharged to home following one week with recommendation to pursue outpatient SLP services.
- Employed as a defense contractor, has a Master’s degree in library sciences. Supportive network of friends in the area.

- Motor speech production: WNL.
- Auditory comprehension: Required minimally increased time for processing of complex auditory directives and conversational material. Intact gestalt comprehension in both conversation and structured inferential paragraphs.
- Verbal expression: Expressed ideas in nonfluent language with output characterized by hesitations, semantic and literal paraphasic errors, deletion of function and higher percentage of nouns vs. verbs. Confrontation naming characterized by frequent semantic errors, highly stimulable with phonemic cues. Generative naming markedly reduced. Supplemented expression with gesture. Repetition was intact.
- Reading comprehension: Intact gestalt comprehension and oral reading at the paragraph level with rapid, efficient processing. Minimal breakdown in both accuracy and efficiency as grammatic complexity and abstract components increase.
- Written expression: Written sentence to picture description was syntactically and semantically accurate; however, efficiency was significantly reduced secondary to dominant UE weakness.
- Cognitive communication abilities: Informally observed to be grossly intact; was not fully evaluated.

Diagnosis: Moderate transcortical-motor aphasia

Treatment Recommendations: Individual SLP treatment 2-3 times per week for 8 weeks.

Treatment Outcomes

Treatment Emphasis
- Compensatory strategy training for anomia (e.g. circumlocution).
- Multiple Oral Reading (MOR) approach to improve reading rate and efficiency.
- Extensive patient education regarding cognitive endurance strategies and impact of endurance on language abilities.

Discharge Status – 6/13/2007
- Participated in 18 individual SLP treatment sessions over a course of 12 weeks (additional sessions missed due to non-related illness).
- Diagnosis: Mild-resolving transcortical motor aphasia
- Discharge plan: Return to work part-time in July 2007
Discussion

Should patients with MS be screened for aphasia?
• A language screening may be beneficial. Lacour et al. (2004) found aphasia to be the first clinical manifestation of MS in 36% of MS patients with acute aphasia.

How do prognostic indicators for aphasia recovery differ between the MS and CVA populations?
• Medications: Unlike CVAs, MS exacerbations are often treated with steroids to suppress inflammation.
• Age: Individuals with MS are often younger than the CVA population.
• Access to treatment: Acute aphasia is much more prevalent in the acute CVA population, which may result in quicker access to therapy services.
• Recovery patterns: CVAs often exhibit a linear recovery pattern, versus the relapsing, remitting form of MS.

What is the role of the SLP?
• The vast majority of available research to date does not address SLP services. Only Lacour et al. (2004) reports that 50% of MS patients with aphasia in their study were diagnosed by a speech-language pathologist.
• SLP treatment may be beneficial in training for compensatory strategy use, patient and family education, and cognitive endurance strategies.

References