A 72 Year Old Woman with Primary Progressive Aphasia

Introduction: This paper presents a case report of a 72 year old woman with primary progressive aphasia and discusses the clinical presentation, variants, and pathological correlations of primary progressive aphasia.

Case Report: A 72 year old right handed female presents to neurology clinic following a hospitalization for the onset of fluctuating word finding difficulties. Her past medical history is remarkable for chronic lymphocytic leukemia in remission, hypertension, and hypercalcemia secondary to hyperparathyroidism (her serum calcium levels have been for the last 4 years). She endorses occasional difficulties in finding words and finishing her sentences. She can no longer read because she cannot recognize words, but has no difficulty writing. She is retired and is able to perform basic household tasks. Neither she nor her husband noticed any difficulties with memory.

During the interview, the patient spoke fluently with correct grammar and responded appropriately to questions. Occasional word finding difficulties were noted and the patient frequently used filler phrases to finish sentences. She followed commands. She was unable to read. She could write a complete sentence, but was unable to read it back. She recognized letters with frequent errors. She recognized single numbers but was unable to write two digit numbers.
Prior laboratory testing revealed an IgG lambda monoclonal gammopathy and increased gamma chains in the urine; otherwise a BMP, LFTs, ammonia, UA, TSH, vitamin B12, and folate levels were within normal limits. CSF studies were unremarkable. EEG was remarkable for diffuse slowing. A brain MRI revealed mild cortical atrophy with moderate atrophy of the left anterior temporal lobe. Neuropsychiatric testing was performed that revealed mild short-term memory difficulties and multiple language abnormalities. The patient was diagnosed with primary progressive aphasia of the semantic dementia type.

**Discussion:** Primary progressive aphasia (PPA) is a progressive neurodegenerative condition characterized by isolated language difficulty for at least two years prior to the onset of deficits in other cognitive functions (memory, social, visual-spatial, or executive function). It has an insidious onset and often appears during the sixth and seventh decade of life. The most common initial presentation is increasing difficulty with word finding, which leads to compensatory strategies such as word simplification, circumlocution, and use of filler words (i.e. “that thing”). It is associated with dysfunction in the left perisylvian region. MRI may show focal cerebral atrophy. There are no CSF markers for PPA. Diagnosis is made on clinical findings and neuropsychological evaluation. There are three main variants of PPA: progressive non-fluent aphasia, semantic dementia, and logopenic progressive aphasia.

Progressive non-fluent aphasia is characterized by dysprosody, agrammatismmm and apraxia of speech. It leads to mutism and may be accompanied by rigidity or clumsiness
in the right upper extremity. Patients may develop behavioral symptoms similar to frontotemporal dementias late in the course of their disease. On PET scans, hypometabolism in the left frontal lobe is seen. Pathologically, it is associated with tau inclusion bodies. In contrast, patients with semantic dementia speak fluently and have normal grammar, but lose the ability to attach meanings to words and objects. This leads to dyslexia and semantic paraphasias. It is associated with anterior temporal hypometabolism on PET scan and pathologically with ubiquitin inclusions. Logopenic progressive aphasia presents with word finding difficulties, impaired repetition, and phonetic paraphasias. Comprehension is impaired but language may be accurate when simple sentence constructions are used. Abnormalities on PET scans are seen in the parietotemporal region. Pathologically, these patients have neurofibrillary tangles and amyloid plaques similar to those seen in Alzheimer’s disease.

There are no good medications for PPA. Bromocriptine may produce minimal improvement in language function. Anticholinesterase medications are ineffective and may worsen symptoms. Serotonin reuptake inhibitors and atypical antipsychotics have not shown any beneficial effects. Speech therapy is the cornerstone of therapy.

**Conclusions:** This patient can expect to undergo progressive loss of language abilities. Speech therapy may help slow her loss of language skills. She is unlikely to benefit from any medication.
Summary of Main Teaching Points: Primary progressive aphasia is a progressive neurodegenerative disease of isolated language impairment for at least two years prior to the onset of other cognitive deficits. It usually presents in the sixth or seventh decade of life with word finding difficulties. There are three main variants of primary progressive aphasia: progressive non-fluent aphasia, semantic dementia, and logopenic progressive aphasia. Speech therapy is the main mode of treatment for primary progressive aphasia.

Questions for further research:

1) Are any medications effective at slowing the progress of PPA?
2) Can biomarkers specific for PPA be identified?
3) What are the risk factors for developing PPA?

References:


