



# Primary Progressive Aphasia: A Case Report

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## Introduction

Primary progressive aphasia (PPA) is a neurodegenerative disease, which has the main feature of speech and language dysfunction. PPA collectively represent the local degeneration of the brain system that are important for speech and language function. So this disease is called 'language-led dementia'. It is difficult to diagnose because it is rare and symptoms progress slowly over the time. PPA is a clinical diagnosis that is usually diagnosed with neuroimaging such as magnetic resonance image (MRI) or positron emission tomography. In this report, we present the case of PPA.

## Case report

A 80-year-old woman visited the our clinic on October 11, 2022 with difficulty of language expression that had begun above four years ago. Four years ago, she had surgery on both knees because of osteoarthritis, and after that she had difficulty in her language expression. Three years ago, she did not remember words, did not say the name of the object, and stuttered. She was alert and there was no decrease in motor or sensory function other than language dysfunction. In the brain MRI on November 4, 2020 (Fig. 1A), there was mild atrophic change in left fronto-temporal lobes, but the lesions were insignificant to diagnose PPA. Since then, the patient has never been to hospital due to patient's financial difficulties. On October 4, 2022 (Fig. 1B), she revisited our clinic and she could not express a word. In the brain MRI on October 11, 2022, there were asymmetrically prominent left sylvian fissure suggesting dominant atrophic changes in the left fronto-temporal lobes. This showed a progressed atrophy compared to the MRI images in 2020. A brain perfusion single-photon emission computed tomography on October 28, 2022 (Fig. 2) also showed a mild perfusion decrease in the left temporal lobe. On the speech test, the Urimal-Test of Articulation and Phonology, the consonant accuracy was 61.47%. The Korean version of the Western Aphasia Battery test showed very severe aphasia with an aphasic quotient of 12.5 and a language quotient of 11. Except for a speech assessment, other cognitive tests such as the Mini-Mental Status Examination and clinical dementia rating were not performed on this patient due to this patient's financial difficulties.

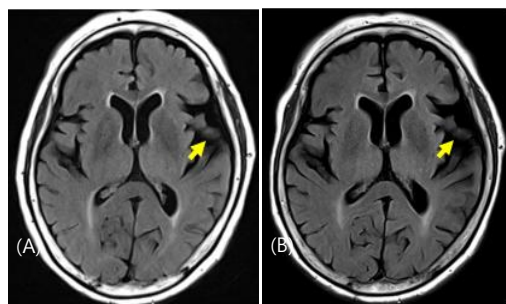


Figure 1. Magnetic resonance T2 images on November, 4, 2020 (A) and October 11, 2022 (B), which show progression of atrophic changes in the left fronto-temporal lobes.

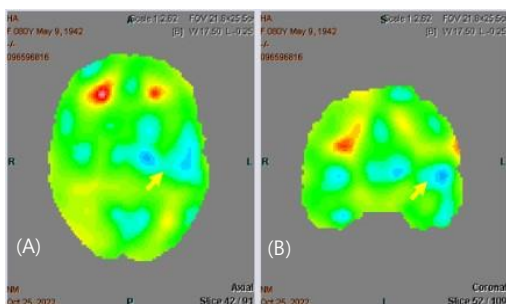


Figure 2. Transverse view (A) and coronal view (B) of single-photon emission computed tomography image on October 28, 2022, which show a mild decrease in perfusion in the left temporal lobe.

## Discussion

We think that this patient's case warranted suspicion of PPA, a condition that must be differentiated in patients who only complain of a gradual and progressive loss of language function. The diagnosis of PPA requires a comprehensive evaluation of the patient's language abilities, cognitive function, medical history, and imaging studies such as brain MRI. MRI often shows atrophy of the left temporal, frontal lobe, including Broca's area, although MRI finding may vary with the specific variant of PPA.

## Conclusion

In conclusion, PPA should be included in the differential diagnosis when symptoms are associated with a gradual and progressive loss of language function, usually in the absence of other cognitive deficits.

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