Title: Delusional jealousy and psychological factors in Very Late-Onset Schizophrenia-Like Psychosis with positive result of Lewy body Disease biomarker: A case report

Running title: Delusional jealousy in VLOSLP

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To the Editor:

Very-Late-Onset Schizophrenia-Like Psychosis (VLOSLP) is defined as primary psychosis occurring after the age of 60 and is distinguished from psychotic disorders that develop at an average age due to characteristics such as female preponderance and lack of negative symptoms[1]. Although antipsychotics are considered effective, herein, we report a case where psychological factors improved delusional jealousy in Lewy body disease (LBD) biomarker-positive VLOSLP.

An 81-year-old Japanese woman developed persecutory delusions, saying, "Someone is entering the house, organizing the cupboard, and eating food from the refrigerator." Several months later, she began expressing delusional jealousy, claiming, "My husband has an affair with a woman, who intrudes into our house and moves things," which escalated her aggressiveness towards her husband. She was referred to our hospital at 82 years old and admitted for scrutiny. She had no affective disorders. Her daily living activities were preserved and the Mini-Mental State Examination score was 28, ruling out dementia. Considering minimal abnormalities in structural brain imaging (Figure1), we diagnosed her with VLOSLP based on the international criteria[1,2]. She was supposed to be diagnosed with delusional disorder based on operational diagnostic criteria. Abnormal dopamine transporter imaging (Figure1) and rapid eye movement sleep without atonia in polysomnography suggested latent LBD, corresponding to psychiatric-onset dementia with Lewy bodies (DLB) in the research criteria for prodromal DLB[3]. Olfactory disturbance, constipation, and visuospatial impairments in more detailed neuropsychological tests were also consistent with LBD. Cerebrospinal fluid amyloid-β42/40 ratio and phosphorylated tau were not supportive of Alzheimer's disease. She exhibited intolerance to risperidone (0.5 mg/day) and brexpiprazole (1 mg/day) due to

side effects, including thirst and leukopenia, leading to a reduced brexpiprazole dose (0.5 mg/day). Her delusions somewhat improved but continued. As she was less active and relatively than her husband, we educated her family to enhance her activity and bridge their social gap.

Her husband, previously more active, coincidentally experienced cognitive decline during her hospital stay and several following months. This limited his social activities like driving or attending local meetings. She then was motivated to attend the meeting instead of him, while he got to spend most of his time at home. Additionally, they increased their engagement in gardening together, following our instruction. These events changed their relationship. When she was asked about her husband three months after discharge, she said “I no longer suspect him of infidelity. He's elderly now, with unsafe driving and spends all day at home—I wonder if he has dementia.” Over several months, her delusions remarkably disappeared despite unchanged medication.

Hashimoto et al. reported that health disparities between patients and spouses were a risk factor, and in about half of the cases, spouses often spent time away from home alone in DLB patients with delusional jealousy[4]. Although the effectiveness of antipsychotics cannot be excluded, reducing health and social disparities had a therapeutic effect against her delusions also in our case. In LBD biomarker-positive VLOSLP patients, we may need to pay attention to health and social disparities between spouses.

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Disclosure

Authors declare no conflicts of interest for this article.

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Figure legends

The right side toward the image shows the left side of the brain. The rule applies to the subsequent figures. A-E: T1-weighted magnetic resonance (MR) images show moderate atrophy in the bilateral frontal and parietal lobes, and mild to moderate atrophy in the bilateral temporal lobes. Medial temporal lobes were relatively spared. F-I: N-isopropyl-p-[123I] iodoamphetamine single-photon emission computed tomography (IMP-SPECT) images were presented in a way that corresponded as much as possible to MR image slices. They show hypoperfusion in the bilateral frontal lobes, temporal lobes, and parietooccipital lobes. They also show hypoperfusion in the thalamus and the basal ganglia. J: Dopamine transporter SPECT shows decreased accumulation in the bilateral posterior putamens, predominantly on the left side.