

[LETTERS TO THE EDITOR]

Mixed Alzheimer's and Lewy-related Pathology Can Cause Corticobasal Syndrome with Visual Hallucinations

Key words: corticobasal syndrome, Alzheimer's disease, Lewy body disease, mixed pathology

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To the Editor We read the interesting case report by Nishida et al. (1) of a case of corticobasal syndrome (CBS) with a handful of neuroimaging findings and the discussion of its underlying pathology. We would like to propose the possible involvement of concomitant Lewy-related pathology for understanding its atypical clinical presentation.

The underlying neuropathology in the vast majority of cases of CBS is known to be tauopathy (i.e., Alzheimer's disease, corticobasal degeneration and progressive supranuclear palsy); however, a comprehensive clinicopathological study from the Queen's Square Brain Bank reported that several Lewy body disease brains revealed antemortem CBS (2). We recently reported that some cases of diffuse Lewy body disease, in which Lewy-related pathology in the primary motor cortex was disproportionately distributed, presented with CBS with visual hallucinations (3).

Given the dopamine transporter and cerebral blood perfusion findings, the degree of neurodegeneration in the nigrostriatal and the visuo-amygdaloid pathways should be less likely severe, and so these pathways should be relatively spared in the case. However, the precuneus and the posterior cingulate seem to be involved, presumably due to the Alzheimer's pathology. Amyloid imaging is insufficient to differentiate between Alzheimer's brain with and without Lewy-related pathology. Furthermore, although both ratios were nominally within the "normal" range, it is noteworthy that the delayed heart-mediastinum (H/M) uptake ratio in meta-iodobenzylguanidine myocardial scintigraphy was inferior to the early H/M ratio, suggesting the involvement of Lewy-related pathology in the cardiac sympathetic nerve. Given that Alzheimer's disease brains are frequently accompanied by Lewy-related pathology (4) and that coincident

Lewy-related pathology distribution widely varies in the central nervous system (5), the case reported by Nishida et al. might be consistent with CBS due to the mixture of Alzheimer's and Lewy-related pathologies with a unique distribution pattern. However, an autopsy will be required to verify this point.

The authors state that they have no Conflict of Interest (COI).

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