CASE REPORT

113. Early Detection of alpha-synuclein deposition within Two Years Diagnosis of REM Sleep Behavior Disorder and Consequential Prevention of Parkinson's

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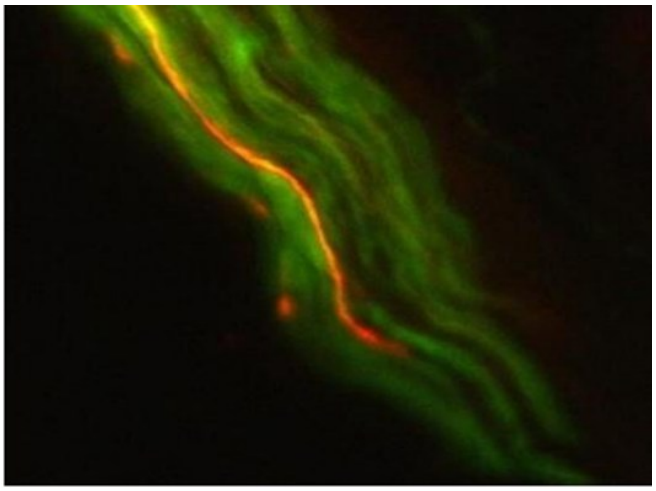
Background: Early diagnosis of REM sleep behavior disorder (RBD) offers a valuable prognostic indicator for individuals at risk of neurodegeneration through their progression into Parkinson's disease. The prognosis of RBD in relation to worsening symptoms can be determined using epidermal nerve punch biopsies and immunohistochemistry to assess the degree of alpha-synuclein aggregation.

The Case: A 72-year-old white woman with a two-year history of REM sleep behavior disorder (RBD) is present with the neurologist for a follow-up appointment for evaluation of Parkinson's disease. She was diagnosed with RBD through an evaluation in the ER for her injured hip from falling out of bed after acting out her dreams. She has a familial connection to Parkinson's disease through her sister. She has been educated on RBD and its correlation to the risk of Parkinson's disease. Being educated on upcoming research to prevent progression of synucleinopathy, she agreed to be a part of this study; therefore, we decided to obtain epidermal nerve biopsies to look for possible alpha-synuclein proteins. The posterior cervical epidermal nerve biopsy was found to be positive for alpha-synuclein proteins. The patient is told of the prognosis, that research suggests she could present with PD symptoms with dysautonomia a decade from now. Clonazepam is effectively managing her RBD symptoms; however, she is aware of research being conducted for preventing synucleinopathy progression.

Conclusion: Investigating the underlying causes of Parkinson's disease is essential for both advancing preventive strategies and providing patients with clearer expectations regarding disease progression. Epidermal nerve biopsies have been found to have a high sensitivity rate of detecting the relationship between Parkinson's disease and RBD. Progression of synucleinopathy is suggested to cause neurodegeneration in those with RBD who later progress to PD.

Figure 1. Alpha-Synuclein Immunofluorescence Staining.



Legend: Immunofluorescent staining of alpha-synuclein deposition on a fiber of the posterior cervical epidermal biopsy. The orange and red streaks indicate alpha-synuclein deposition.

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