

Violent sleep disorder linked to a form of dementia

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Mayo Clinic researchers and a group of international collaborators have discovered a correlation between an extreme form of sleep disorder and eventual onset of parkinsonism or dementia. The findings appear in the current issue of the journal *Brain*.

Clinical observations and pathology studies, as well as research in animal models, led to the findings that patients with the violent rapid eye movement sleep (REM) behavior disorder (RBD) have a high probability of later developing Lewy body dementia, Parkinson's disease or multiple system atrophy (a Parkinson's-like disorder), because all of these conditions appear to stem from a similar neurodegenerative origin.

"Our data suggest that many patients with idiopathic (not associated with any other neurologic symptoms) RBD may be exhibiting early signs of an evolving neurodegenerative disease, which in most cases appear to be caused by some mishap of the synuclein protein," says Bradley Boeve, M.D., Mayo Clinic neurologist and lead author of the study. Synuclein proteins are associated with synapses in the brain, and clumps of abnormal alpha-synuclein protein are present in some forms of dementia. "The problem does not seem to be present in the synuclein gene itself, but it's something that happens to the protein following gene expression. Just what happens to it to cause the conditions isn't clear."

The result, however, is quite clear. The patients -- usually older males -- strike out violently, often yelling, when they enter REM sleep. Mayo researchers following these individuals over many years saw many of

them develop symptoms of dementia. Postmortems showed they all had developed Lewy bodies but not the pathology of Alzheimer's disease. Earlier studies by two of the co-authors on this paper (from the University of Minnesota) had described this sleep disorder and associated it with eventual onset of Parkinson's disease or Parkinson's disease-like disorder in some patients. This Mayo study builds on that work and makes the connection to onset of a non-Alzheimer's dementia.

Dr. Boeve says many cases may go unreported because the individual sleeps alone, the activity is tolerated or the condition is misdiagnosed. Violent movements during sleep do not always mean someone has this condition. Sometimes the behavior is due to untreated sleep apnea and the condition resolves with regular sleep apnea treatment -- use of a CPAP breathing machine. In those cases, the cause is sleep apnea. It's the idiopathic RBD findings on sleep studies that may precede dementia or parkinsonism by years or decades -- underscoring the need for patients with suspected RBD to undergo a sleep study.

"This association may provide one of the earliest indicators thus far of eventual dementia or parkinsonism," says Dr. Boeve. "While some patients don't exhibit symptoms of dementia, all patients we have seen with RBD do develop the pathology." This is both good news and bad news. While Lewy body dementia and Parkinson's disease have no cure, they can be treated. Unlike Alzheimer's disease, medications can restore cognitive function for many with Lewy body dementia. The quandary facing physicians is whether to inform patients that they have an increased risk of developing dementia or parkinsonism, when symptoms may not appear for years or may never appear at all.

"It's an ethical dilemma," says Dr. Boeve. "We know that many patients with RBD will develop dementia or parkinsonism, but we can't positively predict what will happen in each individual case. Some physicians choose to tell very little of this to their patients. I try to explain this, but

also emphasize the positive -- that some people never show any symptoms and live a normal life. There are documented cases of patients who have had RBD for decades and die from heart disease, stroke or cancer, and never show any signs of dementia or parkinsonism."

Source: Mayo Clinic

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