- derly. Prevalence of Parkinson's disease and related disorders assessed by a door-to-door survey of inhabitants older than 65 years. Arch Neurol 1995;52:1017-1022.
- 12. Morgante L, Rocca WA, Di Rosa AE, et al. Prevalence of Parkinson's disease and other types of parkinsonism: a doorto-door survey in three Sicilian municipalities. The Sicilian Neuro-Epidemiologic Study (SNES) Group. Neurology 1992; 42:1901-1907.
- 13. Bharucha NE, Bharucha EP, Bharucha AE, Bhise AV, Schoenberg BS. Prevalence of Parkinson's disease in the Parsi community of Bombay, India. Arch Neurol 1988;45:1321-
- 14. Wang SJ, Fuh JL, Teng EL, et al. A door-to-door survey of Parkinson's disease in a Chinese population in Kinmen. Arch Neurol 1996;53:66-71.
- 15. Li SC, Schoenberg BS, Wang CC, et al. A prevalence survey of Parkinson's disease and other movement disorders in the People's Republic of China. Arch Neurol 1985;42:655-657.
- 16. Menniti-Ippolito F, Spila-Alegiani S, Vanacore N, et al. Estimate of parkinsonism prevalence through drug prescription histories in the Province of Rome, Italy. Acta Neurol Scand 1995;92:49-54.
- 17. Mayeux R, Denaro J, Hemenegildo N, at al. A populationbased investigation of Parkinson's disease with and without dementia. Relationship to age and gender. Arch Neurol 1992;
- 18. D'Allessandro R, Gamberini G, Granieri E, Benassi G, Naccarato S, Manzaroli D. Prevalence of Parkinson's disease in the Republic of San Marino. Neurology 1987;37:1679-1682.
- Wermuth L, Joensen P, Bunger N, Jeune B. High prevalence of Parkinson's disease in the Faroe Islands. Neurology 1997; 49:426-432.

- 20. Bennett DA, Beckett LA, Murray AM, et al. Prevalence of parkinsonian signs and associated mortality in a community population of older people. N Engl J Med 1996;334: 71 - 76.
- 21. Tandberg E, Larsen JP, Nessler EG, Riise T, Aarli JA. The epidemiology of Parkinson's disease in the county of Rogaland, Norway. Mov Disord 1995;10:541-549.
- 22. Baldereschi M, Di Carlo A, Rocca WA, et al. Parkinson's disease and parkinsonism in a longitudinal study: two-fold higher incidence in men. ILSA Working Group Italian Longitudinal Study on Aging. Neurology 2000;55:1358-1363.
- 23. Ben-Shlomo Y, Marmot MG. Survival and cause of death in a cohort of patients with parkinsonism: possible clues to aetiology. J Neurol Neurosurg Psychiatry 1995;58:293-299.
- 24. Miller DB, Ali SF, O'Callaghan JP, Laws SC. The impact of gender and estrogen on striatal dopaminergic neurotoxicity. Ann NY Acad Sci 1998;844:153-165.
- 25. Martilla RJ, Rinne UK. Epidemiology of Parkinson's disease in Finland. Acta Neurol Scand 1976;53:81-102.
- 26. Rosati G, Granieri E, Pinna L, et al. The risk of Parkinson's disease in Mediterranean people. Neurology 1980;30:250-
- 27. Okada K. Kobayashi S. Tsunematsu T. Prevalence of Parkinson's disease in Izumo City, Japan. Gerontology 1990;36:340-
- Bower JH, Maraganore DM, McDonnell SK, Rocca WA. Incidence and distribution of parkinsonism in Olmsted County, Minnesota, 1976–1990. Neurology 1999;52:1214–1220.
- de Rijk MC, Breteler MM, Graveland GA, et al. Prevalence of Parkinson's disease in the elderly: the Rotterdam Study. Neurology 1995;45:2143-2146.

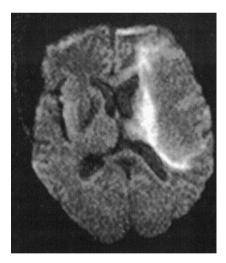


Figure. Diffusion weighted imaging (echoplanar, repetition time = 5100 milliseconds, echo time = 137 milliseconds, b = 1000 T) showing a rim of high signal surrounding a lesion that does not demonstrate signal change or mass effect.

Progressive multifocal leukoencephalopathy

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A 58-year-old woman admitted to the hospital had a 3-month history of progressive neurologic deterioration

Neuro *Images*

characterized by severe global aphasia and bilateral limb weakness, greater on the right. The patient had a 10-year history of systemic lupus erythematosus (SLE). Polyarthritis had been present for 6 weeks before the onset of neurologic symptoms; she was treated with prednisone and methotrexate. A diagnosis of progressive multifocal leukoencephalopathy (PML) was established by a positive PCR for JC virus from CSF. The patient deteriorated and further active care was withdrawn.

Serial MRI showed an enlarging area of hypointensity on T1 and hyperintensity on T2-weighted images in the left parietal lobe. The lesion involved predominantly white matter and was without mass effect. A rim of high signal was present at the margins of the left parietal lesion on the diffusion-weighted image (figure) with a reduced apparent diffusion coefficient (ADC) on the ADC map. There was no enhancement after administration of IV gadolinium.

PML in SLE treated with immunosuppression is uncommon.1 The MRI findings in PML often include circumscribed lesions predominantly in white matter without mass effect or contrast enhancement.^{1,2} The MR sequences indicate a progressing area of cytotoxic edema surrounding prior areas of white matter damage.2

- 1. Ahmed F, Aziz T, Kaufman LD. Progressive multifocal leukoencephalopathy in a patient with systemic lupus erythematosus. J Rheumatol 1999; 26:1609-1612.
- Ohta K, Obara K, Sakauchi M, Obara K, Takane H, Yogo Y. Lesion identification by diffusion-weighted magnetic resonance imaging in progressive multifocal leukoencephalopathy. J Neurol 2001;248:809-



Progressive multifocal leukoencephalopathy

R. D. Henderson, M. G. Smith, P. Mowat, et al. *Neurology* 2002;58;1825 DOI 10.1212/WNL.58.12.1825

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