Depression After Encephalitis: A Case Report

To the Editor: Very few data exist explaining the relationship between major depressive disorder, insomnia, and encephalitis. This case report presents a patient who was mentally stable until suffering an episode of encephalitis. Afterward, he developed depression and insomnia and began following up with psychiatry.

Case report. Mr A is a 29-year-old man with a history significant for generalized anxiety disorder, major depressive disorder, and insomnia dating back to 2012 and migraines, which started before 2012, who is not taking any psychotropic medications. He presented to the psychiatry clinic to establish care, as he had recently moved to the area and was previously receiving care from a mental health provider at another facility. He described the move as a "positive" event and lives with his mother and stepfather. He reports that he has good relations with his parents and a good social support network. He describes his mood as depressed, and his affect is constricted. He denies feeling suicidal and ever having suicidal thoughts. Depression has not interfered with his relationship with his parents but has interfered with his capacity to work. He reports that depression and low energy were reasons for his dismissal from a previous job, as well as for moving in with his parents. He is currently unemployed and states that he has low energy, anhedonia, insomnia, hopelessness, and poor concentration.

Mr A reported an episode of encephalitis in June of 2012, when he was hospitalized for 3 weeks. The hospital records were obtained and confirmed his report. While he was hospitalized for viral encephalitis, an electroencephalogram showed diffuse encephalopathy, and a magnetic resonance image of the brain showed a lesion within the splenium of the corpus callosum. Mr A stated that his depressive symptoms began 1 week after hospitalization. He noticed feeling "down," and sleep was reduced from 8 to 6 hours per night. He reports adequate opportunity to sleep, but he has a hard time falling and staying asleep. He has not had sleep studies done, and the insomnia has been attributed to depression.

There is evidence to suggest that childhood encephalitis or meningitis leads to psychiatric disorders later on in life, specifically schizophrenia spectrum disorders.[1] There is also evidence that encephalitis caused by the herpes simplex virus may cause affective dysfunction.[2] Although it is still early to draw conclusions, it is worth further investigation. In our patient, it is of note that there was a restriction lesion in the splenium, which is close to the pineal gland. This type of restriction lesion has been found in other cases of encephalitis and is usually transient and nonspecific. It occurs with mostly viral infections, as is suspected in the case described here.[3] What is interesting is the proximity of the pineal gland to the splenium and the role of the pineal gland in sleep, as well as its association with depression.[4] It is speculative at this point, but is it possible that Mr A had some damage to his pineal gland during his encephalitis episode?

In a study looking at psychological sequelae in patients infected with the West Nile virus, a cohort of 171 participants was followed for 8 years. It was found that 35% of these participants developed clinical depression. Depending on gender and degree of physical disability, some developed more severe depression.[5]

Mr A developed major depressive disorder. He has had consistent symptoms of depression, with no episodes of remission. If his symptoms continue until June 2014, he will meet *DSM-5* criteria for persistent depressive disorder, since he first developed symptoms in June 2012. This case highlights the importance for patients with encephalitis to be closely monitored by their primary care physician for any signs or symptoms of clinical depression. It is clear that there are not enough studies on the relationship between brain infections and depression, but from what exists, the relationship seems worthy of further investigation and research.

REFERENCES

1. Fryers T, Brugha T. Childhood determinants of adult psychiatric disorder. *Clin Pract Epidemol Ment Health*. 2013;9(1):1–50.
2. Fazekas C, Enzinger C, Wallner M, et al. Depressive symptoms following herpes simplex encephalitis—an underestimated phenomenon? *Gen Hosp Psychiatry*. 2006;28(5):403–407.
3. Bulakbasi N, Kocaoglu M, Tayfun C, et al. Transient splenial lesion of the corpus callosum in clinically mild influenza-associated encephalitis/encephalopathy. *AJNR Am J Neuroradiol*. 2006;27(9):1983–1986.
4. Sapède D, Cau E. The pineal gland from development to function. *Curr Top Dev Biol*. 2013;106:171–215.
5. Nolan MS, Hause AM, Murray KO. Findings of long-term depression up to 8 years post infection from West Nile virus. *J Clin Psychol*. 2012;68(7):801–808.

Shady S. Shebak, MD
ssshebak@carilionclinic.org

Author affiliations: Department of Psychiatry, Virginia Tech Carilion School of Medicine, Roanoke, Virginia.

Potential conflicts of interest: None reported.
Funding/support: None reported.
Published online: June 5, 2014.
Prim Care Companion CNS Disord 2014;16(3):doi:10.4088/PCC.13l01624