Secondary Psychosis 3 Months Prior to the Overt Symptoms of Multiple Myeloma: A Case Report

To the Editor: We report a case in which secondary psychotic symptoms presented 3 months prior to the overt signs and subsequent diagnosis of multiple myeloma. Our case report is unique because previous reports of psychiatric symptoms secondary to multiple myeloma are rare and such symptoms typically present after the development of hypercalcemia and uremia.

Case report. Ms A, a 66-year-old white woman, was admitted to the inpatient psychiatric service with multimodal hallucinations, depressed mood, and self-care failure. She complained of paranoia and auditory hallucinations and reported visual hallucinations of "people who were not there." She had no past history of psychosis, and her symptoms were initially believed to be related to a urinary tract infection (UTI), although they did not clear upon resolution of the UTI and treatment with intravenous antibiotics.

She previously was treated for major depressive disorder (*DSM-IV*), although not since 2009, and has a history of right frontal lobe encephalomalacia secondary to a remote history of a gunshot wound. Her medical history was otherwise noncontributory, although her serum calcium level was low (8.2 mg/dL) at the time of her first admission to the hospital.

Her psychosis resolved without treatment with an antipsychotic, and she was started on treatment with sertraline 50 mg/d for depression, which was replaced after 3 weeks with venlafaxine extended release 37.5 mg/d, which in turn was increased to 75 mg/d after several weeks. One month later, the patient was again brought to the emergency department for confusion and auditory and visual hallucinations. At that time, she had overdosed on salicylates and was found to be in a state of metabolic acidosis and acute renal failure.

Her serum calcium level was within normal limits, and, with medical treatment, her metabolic acidosis and renal failure resolved; however, her psychotic symptoms persisted and became more intense according to her reports. At that time, risperidone 0.5 mg/d was initiated and in several weeks was increased to 1 mg/d to target symptoms of psychosis. Three weeks later, her auditory hallucinations still continued to worsen.

Several weeks later, the patient complained of severe headache and "double vision" and was found to have cranial nerve VI palsy, hypercalcemia (serum calcium level of 12 mg/dL), elevated serum ionized calcium (1.81 mmol/L), and low serum parathyroid hormone (5.0 pg/mL). A computerized tomography (CT) scan of her brain showed multiple new lytic lesions in the calvarium that were consistent with multiple myeloma. A total body CT scan revealed multiple new lytic lesions in the skeleton that were also consistent with multiple myeloma.

A bone marrow biopsy showed κ light chain restricted plasmacytoma, and she was started on dexamethasone and formally diagnosed with multiple myeloma. The steroid treatment targeting her multiple myeloma also resulted in a significantly improved mental status with rapid resolution of her symptoms of psychosis.

Only a few case reports describing psychiatric symptomatology secondary to multiple myeloma exist in the literature.[1,2] In this case, the secondary psychosis and delirium preceded the onset of multiple myeloma by up to 3 months without hypercalcemia, uremia, or hyperviscosity.

We hypothesize that the pathophysiologic components that underlie multiple myeloma, such as increased levels of cytokines, may be "neurotoxic" even in early or prodromal stages of the disease and long before the clinical detection of lytic lesions. This would be consistent with the *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition, Text Revision (*DSM-IV-TR*) views on psychosis secondary to a general medical condition because there is a clear pathophysiologic link between the general medical condition and the development of psychosis.[3]

References

1. Keshavan MS, Kaneko Y. Secondary psychoses: an update. *World Psychiatry*. 2013;12(1):4–15.
2. Kushon DJ, Verma S, Elfatah M, et al. Multiple myeloma presenting as secondary mania. *Prim Psychiatry*. 2009;16(11):22–24.
3. Silberfarb PM, Bates GM Jr. Psychiatric complications of multiple myeloma. *Am J Psychiatry*. 1983;140(6):788–789.

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Potential conflicts of interest: **Dr Macaluso** has conducted clinical trials research as principal investigator for the following pharmaceutical companies during the last 12 months: AbbVie, Eisai, Envivo, Janssen, Naurex, and Pfizer. All clinical trial and study contracts were with and payments made to the Kansas University Medical Center Research Institute, a research institute affiliated with the University of Kansas School of Medicine—Wichita. **Dr Flynn** reports no potential conflict of interest relevant to the subject of this letter.
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