Guillain-Barré Syndrome and SIADH in a Patient With Chronic Lymphocytic Leukemia

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Guillain-Barré syndrome, an acute or subacute inflammatory demyelinating polyradiculoneuropathy, usually causes ascending paralysis, areflexia, and sensory disturbances. A similar syndrome, more chronic and sometimes relapsing, has been called chronic inflammatory demyelinating polyneuropathy. Thought to have an immunologic cause, Guillain-Barré syndrome can be found in association with infections, vaccinations, and malignancies. The syndrome has been linked to carcinomas and to Hodgkin and non-Hodgkin lymphomas, and both Guillain-Barré syndrome and chronic inflammatory demyelinating polyneuropathy have been seen with the chemotherapy and other interventions associated with bone marrow transplantation. Guillain-Barré syndrome has, however, only rarely been reported in patients with chronic lymphocytic leukemia. We report the occurrence of a painful, acute polyneuropathy, with features of Guillain-Barré syndrome and complicated by the syndrome of inappropriate antidiuretic hormone secretion, which affected an elderly woman who underwent chemotherapy for chronic lymphocytic leukemia.

Case Report

An 84-year-old woman with a 6-year history of untreated chronic lymphocytic leukemia complained of several years of mild tingling of her fingers and toes. Her lower extremity reflexes were absent, and she had decreased but preserved upper extremity reflexes, and decreased proprioceptive and vibratory sensation in her legs. There was no weakness, and serum levels of folate and vitamin B₁₂ were normal. Findings on magnetic resonance imaging of the entire spine and to Hodgkin and non-Hodgkin lymphomas, and both Guillain-Barré syndrome and chronic inflammatory demyelinating polyneuropathy have been seen with the chemotherapy and other interventions associated with bone marrow transplantation. Guillain-Barré syndrome has, however, only rarely been reported in patients with chronic lymphocytic leukemia. We report the occurrence of a painful, acute polyneuropathy, with features of Guillain-Barré syndrome and complicated by the syndrome of inappropriate antidiuretic hormone secretion, which affected an elderly woman who underwent chemotherapy for chronic lymphocytic leukemia.

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mOsm/L, with urine osmolality 711 mOsm/L, and urine sodium 22 mEq/L. The patient's state of hydration and results of her thyroid tests and serum creatinine levels were normal. She was not taking diuretics or drugs known to stimulate antidiuretic hormone release. Fluid restriction was begun, and her serum sodium levels increased to normal.

After plasma exchange the patient gradually recovered full power in her arms, and the strength in her legs improved considerably. At no time were there respiratory or cranial nerve problems, although periodic bladder catheterization remained necessary. She was transferred to a rehabilitation facility on the 23rd hospital day.

Discussion
The patient had chronic lymphocytic leukemia and a mild chronic sensory neuropathy. She then suffered a subacute illness that caused pain, ascending paralysis, loss of arm reflexes, and hyponatremia. Cerebrospinal fluid and electromyographic findings at the time of this subacute syndrome were consistent with those of Guillain-Barré syndrome; and although it was not possible to know whether these findings were new or old, because baseline studies had not been done before the onset of paralysis, we have chosen to consider her illness Guillain-Barré syndrome because of its clinical presentation. Paralysis rarely progresses at such a pace in chronic inflammatory demyelinating polyneuropathy.2

Why a patient with chronic lymphocytic leukemia developed Guillain-Barré syndrome is not clear. The association might have been coincidental. There was, however, no antecedent vaccination, infection, or history suggestive of Campylobacter jejuni enteritis, and both Guillain-Barré syndrome and chronic lymphocytic leukemia are disorders in which disruptions of the immune system occur. Powles and Malpas4 thought the disorders might be linked through the greater susceptibility to viral infection found with the antibody deficiencies of chronic lymphocytic leukemia. Jackson,5 on the other hand, suggested that immunosuppression from chemotherapy could have played a role in the case he reported. The patient we report received chlorambucil just 10 days before her paralysis began, but a direct connection between that treatment and her neurologic illness cannot be proved.

The hyponatremia, which complicated this case, appeared to be caused by the syndrome of inappropriate secretion of antidiuretic hormone, or SIADH. An association of SIADH with Guillain-Barré syndrome is well-established and commonly noted in review articles, although detailed reports are few.6 Why a peripheral nerve disorder should trigger antidiuretic hormone secretion is not clear, but in some of the patients reported, antidiuretic hormone release might have been due to the autonomic instability so common in Guillain-Barré syndrome. Autonomic afferent impulses from stretch receptors in the left atrium and carotid body are known to modulate antidiuretic hormone secretion, and failure of such vagal feedback could lead to free water retention.6 Hochman et al,7 however, reported SIADH in a patient with Guillain-Barré syndrome who had no autonomic dysfunction, and the autonomic system abnormalities in the patient we report were limited to minor blood pressure fluctuations and urine retention. Whatever the causal link, SIADH can be a major complication in Guillain-Barré syndrome and can in some patients cause hyponatremic seizures and even coma. Fortunately, our patient suffered no such problems and had a prolonged but uneventful recovery.

One element of her experience, however, does deserve further comment. Pain is more common in Guillain-Barré syndrome than many clinicians think. Ropper and Shahani8 reported deep aching pain in the back, buttock, or upper legs in 55 percent of the patients in their series. Pain was often worse at night and sometimes preceded weakness by up to 5 days. Our patient had similar difficulty, and it was only when paralysis ensued that the cause of her pain became clear.

References