

Title: *The Curious Case of Hyponatremia*

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Abstract:

Hyponatremia is a common electrolyte abnormality; however, identifying the underlying etiology can be diagnostically challenging, particularly when laboratory findings are atypical. We present a case in which evaluation of hyperosmolar hyponatremia led to the diagnosis of previously unrecognized Waldenström macroglobulinemia and prompted vision- and life-saving therapy.

An 84-year-old Caucasian male with a history of benign prostatic hyperplasia, hypertension, hyperlipidemia, hyperthyroidism, gastroesophageal reflux disease, and atrial fibrillation status post watchman device placement presented with one day of right eye pain and blurred vision. Ophthalmologic evaluation demonstrated retinal hemorrhage with hemorrhagic chemosis, requiring conjunctival incision and decompression.

Nephrology was consulted for hyponatremia. Laboratory studies revealed serum sodium 126 mmol/L, measured serum osmolality 306 mOsm/kg, urine sodium 30 mmol/L, and urine osmolality 257 mOsm/kg. Calculated serum osmolality was 265 mOsm/kg, resulting in an osmolar gap of 41 mOsm/kg, consistent with hyperosmolar hyponatremia. Serum glucose, lipid panel, thyroid-stimulating hormone, and morning cortisol were normal.

Given the unexplained osmolar gap, serum protein electrophoresis, immunofixation electrophoresis, and serum free light chains were obtained. Studies revealed an IgM kappa monoclonal gammopathy with serum IgM elevated to 4,810 mg/dL and serum viscosity of 13.7 cP. The patient underwent urgent plasmapheresis for symptomatic hyperviscosity syndrome. Bone marrow biopsy subsequently confirmed Waldenström macroglobulinemia and lymphoplasmacytic low grade B-cell lymphoma.

This case highlights the importance of a systematic evaluation of atypical hyponatremia. Recognition of hyperosmolar hyponatremia and an elevated osmolar gap led to diagnosis of an underlying paraproteinemia causing hyperviscosity syndrome with retinal hemorrhage. Careful interpretation of laboratory abnormalities can facilitate early diagnosis and timely intervention in potentially life-threatening disease processes.