Elderly Patient Presenting with Dizziness and Limb Weakness: A Case Report

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ABSTRACT

Hyponatremia is one of the most common electrolyte disorders, particularly in the elderly, and is associated with significant morbidity and mortality if not promptly diagnosed and treated. We present a case of severe hyponatremia with atypical neurological presentation in an elderly female, managed successfully through timely intervention and multidisciplinary care.

Key Words: *Hyponatremia, Hypo-osmolality, Electrolyte imbalance, Elderly, Dizziness, Intensive Care, Osmotic demyelination.*

Background

Hyponatremia is the most common electrolyte imbalance encountered in clinical practice and is particularly prevalent among hospitalized elderly patients. [1]It can result from multiple causes including volume depletion, syndrome of inappropriate antidiuretic hormone secretion (SIADH; most common)[1], heart failure, renal insufficiency, and medication effects. Symptoms of hyponatremia vary widely, from mild fatigue and confusion to life-threatening seizures and coma. Early identification and appropriate correction of sodium levels are essential to prevent severe neurological consequences. This report illustrates an atypical presentation of severe hyponatremia and discusses the management challenges and learning points associated with such cases.[2]

Patient Information

A 69-year-old female from Faisalabad presented with a three-month history of progressive lower limb weakness, dizziness, and vertigo on standing. Associated complaints included generalized myalgia, recurrent nausea, vomiting, and poor oral intake. She reported constipation but denied fever, urinary tract symptoms, or infections. History was notable for hepatitis C infection nine years prior.

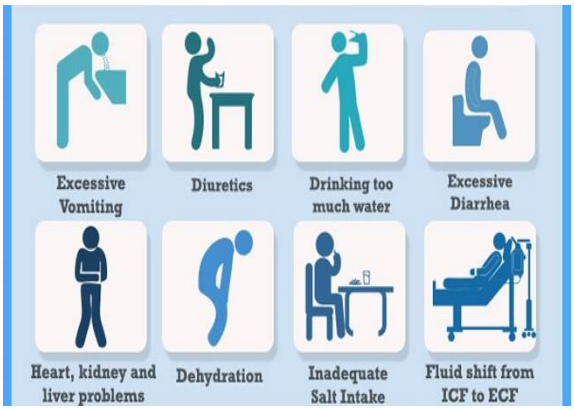

Figure 1: *causes of hyponatremia in adults.*

Clinical Finding and Diagnostic Assessment

On examination, the patient was alert and oriented (GCS 15/15). Vital signs were stable: HR 72 bpm, BP 140/90 mmHg. No dehydration or focal neurological deficits were observed.

Therapeutic Intervention and Outcome

The patient was admitted to the ICU for strict monitoring. Management included:

Intravenous hypertonic saline (3% NaCl) cautiously administered to correct sodium levels

Supportive intravenous fluids (Ringer's lactate, normal saline at controlled rates)
Electrolyte repletion (magnesium and potassium)
Empiric antibiotic therapy with intravenous ceftriaxone
Symptomatic management with lactulose syrup for constipation.
Strict fluid restriction to manage hypo-osmolality
Blood sugar monitoring every 4 hours.

Care was taken to ensure that the rise in serum sodium did not exceed 8–10mEq/L per 24 hours to prevent the risk of osmotic demyelination syndrome. Over the course of several days, the patient exhibited gradual improvement in muscle strength, reduced dizziness, improved appetite, and stabilization of serum sodium levels. She tolerated the correction well without neurological complications and was considered for transfer to the general medical ward for continued care.

Key laboratory findings are summarized below

Investigation	Result
Serum sodium	118 mEq/L (severe hyponatremia)
Blood urea nitrogen	30.6 mg/dL
Creatinine	0.8 mg/dL
Potassium	3.2 mEq/L
Hemoglobin	10.4 g/dL (microcytic hypochromic anemia)
WBC count	3690/mm³ (leucopenia)
Ultrasound abdomen	Normal
Liver & renal function	Normal

Discussion

Hyponatremia is a diagnostic and therapeutic dilemma that is especially vexing in elderly patients with nonspecific symptoms. In the current case, the most common presenting features were generalized weakness, dizziness, and inadequate oral intake. Such nonspecific symptoms may lead to delay in diagnosis unless there is high suspicion in the minds of the clinicians.

The differential etiologies of hyponatremia include hypovolemic, euvolemic, and hypervolemic states. The decreased intake and potential mild volume depletion were thought to be contributing causes in this patient. There was no sign of congestive heart failure, cirrhosis, or renal insufficiency, and drugs were also excluded to rule out drug-induced etiology.

Treatment of severe hyponatremia involves balancing the rapid correction to avoid cerebral edema with the prevention of rapid correction that can lead to osmotic demyelination syndrome, a catastrophic complication with irreversible neurological injury.

Recommendations involve restricting the rate of sodium correction to no greater than 8–10 mEq/L in 24 hours. Electrolyte, fluid balance, and neurological monitoring was essential in having a good outcome.

This case highlights the significance of a properly planned strategy: early identification, determination of underlying cause, cautious correction, and extensive supportive therapy. It also highlights the significance of intensive care unit admission for close monitoring in the management of severe electrolyte disturbances in high-risk populations.

Our patient's presentation was unique in that she remained alert and oriented with other symptoms consistent with mild hyponatremia (i.e. 125-134)[2], while her measured serum sodium was severely depleted at 118mg/dL. It is abnormal for patients with such diminished concentrations of sodium to be without focal neurological deficits, altered mentation, or respiratory depression. Such a presentation was consistent with the notable chronicity of her hyponatremia, which had very slowly declined, allowing her cells to gradually adjust to the osmotic changes. This prevented her from developing the common symptoms associated with severe hyponatremia.

Patient Perspective

The patient indicated that before hospitalization, her increasing weakness and dizziness had greatly impaired her capacity to carry out daily activities. She was relieved when a diagnosis was made and

appreciated the good care received during her stay in the ICU. She appreciated the good explanations provided by the medical team about her condition and the need to follow dietary and fluid intake advice after discharge. She indicated that she was much stronger and more energetic by the time she was transferred to the general ward.

Conclusion

Hyponatremia is one of the most common electrolyte derangements and one of the most life-threatening conditions, especially when it becomes severe with a serum sodium level less than 120 mEq/L. [3] Our case highlights hyponatremia in aged patients who have weakness and dizziness in a nonspecific presentation and presents severe hyponatremia with a serum sodium level of 118 mEq/L without seizures or encephalopathic changes. Early detection, proper evaluation of the cause, and safe correction measures are crucial to avoid severe neurological sequel. Practitioners should be careful not only in making the diagnosis of this potentially fatal condition but also in managing it with treatment modalities that avoid treatment-related morbidity. Thus, severe hyponatremia is an electrolyte derangement that can vastly differ in presentation and morbidity if not appropriately considered. [3]

References

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