



An uncommon cause of a common disorder: Questions

Sare Gülfem Özlü¹ · Sonay İncesoy Özdemir^{1,2} · Dilek Kılıç³ · Ayşegül Neşe Cıtaç Kurt⁴

Received: 18 May 2020 / Accepted: 3 June 2020 / Published online: 17 August 2020
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Case summary

A 7-year-old girl who had been followed up with cerebral palsy and epilepsy was consulted to our pediatric nephrology outpatient clinic because of incidentally detected hyponatremia on routine follow-up. She had birth-adjusted cerebral palsy and received various antiepileptics since the newborn period.

She had been on treatment with valproic acid and clonazepam for 1 year and 3 months prior to her referral and the dosage of valproic acid had been increased to 40 mg/kg/daily because of short-lasting intractable seizures.

At admission, her vital signs were normal; she had no signs of dehydration or hypovolemia. Neurological examination revealed increased deep tendon reflexes and Babinski reflex. Other systemic examination findings were normal.

Laboratory investigations were as follows: glucose 94 mg/dl (74–106), creatinine 0.27 mg/dl (0.3–0.7), urea 17 mg/dl (11–38), sodium 129 mEq/L (135–145), potassium 4.83 mEq/L (4.1–5.3), calcium 9.21 mg/dl (8.5–10), phosphorus 4.5 mg/dl (4.5–5.5), chloride 99 mEq/L (98–107), magnesium 1.88 mg/dl (1.5–2.3), aspartate aminotransferase 35.7 IU/L (15–60), alanin aminotransferase 10.5 IU/L (0–35), and uric acid 2 mg/dl (2.6–6). Thyroid function tests were normal. Blood

gas analysis revealed a pH of 7.44, HCO³⁻ of 22.9, and pCO² of 27.3. Serum level of valproic acid was 142 micgr/ml (therapeutic range 50–100 micgr/ml). Urine sodium was 41 mEq/L, potassium was 15 mEq/L, and density was 1025; urine microscopic examination was normal. Plasma osmolality was 269 mOsm/kg and urine osmolality was 280 mOsm/kg. Ultrasonographic examination of kidneys and the urinary tract was normal. Cranial computerized tomography was normal except for chronic alterations due to perinatal asphyxia.

Questions

- 1 What is your diagnosis for this patient?
- 2 What is the underlying etiology of this disorder?
- 3 What is the best management strategy for this patient?

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

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The answers to these questions can be found at <https://doi.org/10.1007/s00467-020-04649-6>.

✉ Sare Gülfem Özlü
saredr@gmail.com

¹ Department of Pediatric Nephrology, Ankara Yıldırım Beyazıt University, Faculty of Medicine, Üniversiteler Mahallesi, Çankaya, Ankara, Turkey

² Department of Pediatric Oncology, Ankara Yıldırım Beyazıt University, Faculty of Medicine, Ankara, Turkey

³ Department of Radiology, Ankara Yıldırım Beyazıt University, Yenimahalle Training and Research Hospital, Ankara, Turkey

⁴ Department of Pediatric Neurology, Ankara Yıldırım Beyazıt University, Faculty of Medicine, Ankara, Turkey