Reversible brain shrinkage secondary to infant salt toxicity

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A previously healthy 9-month-old girl was obtunded due to marked hyponatremia. She was resuscitated with IV hydration with progressive correction of sodium level. CT brain scan on admission showed marked brain shrinkage, which resolved as the sodium level was corrected (figure).

Salt toxicity is rare but potentially fatal in children and should be suspected in severe hyponatremia without significant dehydration or metabolic cause.¹ Children may recover without long-term sequelae but seizure is commonly reported when hyponatremia is corrected rapidly.² In this patient, the culprit was excessive exogenous sodium intake from inappropriate weaning food.

Figure Reversible brain shrinkage due to salt toxicity

(A, B) Noncontrast CT scan with severe hyponatremia (194 mmol/L) shows cerebral parenchymal shrinkage with prominent subarachnoid space, enlarged Sylvian cistern, and acute subdural hemorrhage (arrows). (C, D) CT scan after correction of hyponatremia (155 mmol/L) shows reversed brain shrinkage with reduction in extraaxial CSF and subdural hemorrhage.

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Appendix (continued)

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