Treatment of Severe Salt-Wasting Nephropathy

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Dear Sir,

We report a novel method of treatment for severe salt-wasting nephropathy.

A 22-year-old male presented with a 9-month history of thirst, polyuria, and postural dizziness, with vomiting over the previous week. Physical assessment showed a clinically dehydrated patient with tachycardia and hypotension on standing. Initial investigations disclosed serum sodium 123 mmol/L with serum urea 68.8 mmol/L and creatinine 626 μ mol/L. Urine contained 90 mmol/L of sodium. Ultrasound demonstrated morphologically normal kidneys but renal biopsy revealed minor glomerular mesangial proliferation with severe tubular atrophy and interstitial fibrosis.

Intravenous fluids improved the patient's general condition and serum sodium rose to 141 mmol/L while urea fell to 23.1 mmol/L and creatinine to 408 μ mol/L. However, despite a sodium-supplemented diet, he was admitted on 15 occasions over the next 12 months with sodium and fluid depletion requiring intravenous rehydration. Even training for insertion of a nasogastric feeding tube to allow overnight enteral infusion of saline did not reduce the frequency of hospital admission. Urinary sodium concentration during this period was as high as 112 mmol/L and never lower than 70 mmol/L.

Eventually, a cuffed jejunostomy tube was inserted and the patient trained to infuse 2 litres of isotonic saline daily. Subsequently, he has been admitted on three occasions for minor surgical complications but there has been no further episode of clinical sodium depletion nor the need for intravenous saline over the last 15 months, and he has not required hospital admission for 10 months. Serum creatinine has stabilised below 500 μ mol/L.

The difficulty in keeping pace with the sodium loss in this case is explained by the unusual severity of the tubular reabsorptive defect. When even nasogastric therapy failed, it seemed likely that the patient would soon require permanent dialysis or transplantation. However, the insertion of a jejunostomy tube halted the sequence of frequent hospital admissions with saline depletion.

Jejunostomy should be considered in other cases of severe salt wasting in which useful renal function can otherwise be maintained only by intravenous saline infusion.