CASE REPORT

A 2 year old, 13.9 kg, female with a past medical history significant for end-stage renal disease secondary to neonatal ischemia from twin-twin transfusion syndrome and acute tubular necrosis presented for maternal-kidney transplant. Preop labs were abnormal and the primary team decided to hold peritoneal dialysis. Labs were rechecked morning of surgery with significantly worsened hyponatremia.

By the time the critical Na was reported on the morning of surgery, the donor kidney was already harvested. The patient was exhibiting no detectable neurologic signs of severe hyponatremia.

The management of this patient was discussed with the transplant and urology surgeons, nephrologists and anesthesiologist and the decision was made to obtain peripheral access, sedate for a central line, treat the hyponatremia and then proceed with the general anesthetic and kidney transplantation.

CASE DISCUSSION

After the risks were thoroughly discussed with the family, a 24 G peripheral IV was placed and the patient was taken to the OR. Under IV sedation, a left subclavian central venous line was placed to administer 100 ml of 3% NaCl (50 mEq Na; deficit calculation by nephrologist) over an hour with the goal to correct the sodium back to the upper 120’s. Repeat sodium level was 129 mmol/L. The patient’s neurologic status remained stable without signs of deterioration. General anesthesia was induced and a successful renal transplant followed.

Post operative course was complicated by the need for mechanical ventilation and sedation due to fluid overload and respiratory failure. Once weaned from the ventilator and sedation, her neurologic status remained at baseline with no signs of sequelae from the hyponatremia or its correction.

Symptomatic hyponatremia can be difficult to detect in younger children and is likely to be masked by anesthesia. Medical management of hyponatremia in a controlled fashion is preferable prior to surgery given the risks of either rapid overcorrection or developing symptomatic, severe hyponatremia. Pediatric literature is inconclusive on the management and risks of perioperative hyponatremia for urgent/emergent surgery. We present an anesthetic approach on the perioperative management of a patient with acute, asymptomatic hyponatremia urgently needing renal transplantation.

REFERENCES