

Mr Brangham,

These are the reasons why one-fifth normal saline (0.18%) in 4% glucose was given to Adam.

1. It is an isotonic solution
2. It is the standard i.v. maintenance fluid in paediatric practice-eg. used widely for replacement fluid in dehydration.
3. Its sodium and water content resembles the dilute urine produced by Adam's kidneys (>80-100 ml/hr).
4. It resembles exactly the sodium concentration of Adam's night feeds and dioralyte (30 mmol/l NaCl). Although I had permitted oral fluids he had missed 2 hours of this in his fast. Therefore 500 mls were given in the first 30 minutes to replace this deficit and provide maintenance in preparation for the impending transplanted kidney.
5. The alternative fluids 5% or 10% dextrose contain no sodium chloride-- which was a crucial factor in deciding to use it. At no time in my management of Adam's fluids was a salt-free solution given.
6. Adam clearly needed the glucose volume and concentration which I administered as his blood sugar was at the low end of normal after the operation. If Hartmanns or 0.9% saline (no glucose content) had been used instead of 0.18 NaCl then a dangerously low blood sugar (hypoglycaemia) would have resulted.
7. Adam's kidneys had lost the ability to concentrate urine (polyuria) so they were unresponsive to ADH (anti-diuretic hormone). Therefore the dilutional hyponatraemia discussed in the paper by Arieff could not have occurred in his case-yet another reason why I had used this fluid initially

After the transplanted kidney failed to function I was very concerned that despite my best calculations and estimate of the losses I had not given sufficient fluid!

HPPF was given to maintain the circulating blood volume  
Packed red blood cells given to replace loss from bleeding

PS. On looking back through his anaesthetic record I note that following the blood test at 09.32 I drastically slowed the rate of 0.18 NaCl and commenced Hartmanns. I cannot exactly remember but I was perhaps attempting to correct the low sodium at that time!!!----I need to discuss this with you