

NOTE

TO Anne Dillon

FROM Professor Peter Gross

DATE 8th February 2012

RE Dr.Taylor's statement (reference WS 008-6)
Dr Dyer's statement (reference WS 235-1)

1. Dr Taylor's statement (008/6).

I think Dr.Taylor's statement is helpful:

1) Adam's was his first renal transplant operation (as responsible anesthetist), suggesting that he was under great stress to do it right. "Right" in this context most likely means to do everything possible to get the transplant to function, i.e. give enough intravascular fluid, ensure good circulation, achieve an excellent perfusion of the transplant when the clamps are removed. This aspect in my opinion provides an improved explanation for the excessive fluid volumes that were given to Adam.

2) Dr.Taylor's reflections lead him to recognize (now) that Adam had a fixed amount of urine output to <100 ml/hr, whereas at the time of the operation (and in previous statements) he thought it was larger than that or even much larger . This is an important point. It means that a major aspect of disagreement between Dr.Taylor and several of the experts (myself included) -which had bearing on the hyponatremia and its consequences- may be considered resolved .

3) Dr.Taylor (now) calls the 0.18%NaCl/4%Glucose solution "hypotonic", whereas initially and before he had spoken of an "isotonic" fluid. This is also important because it makes the generation of hyponatremia and dilution understandable. Here, too, several experts (myself included) and Dr.Taylor seem to be in agreement now.

4) Dr.Taylor points out how busy he was at the beginning of anesthesia/operation. I believe this is a valid point. (I indicated this aspect in my report too). Given that the implantation of a renal transplant must use time sparingly (a long duration of the procedure is not good for the transplant) and given that in a child more calculations and precautions are needed than in an adult due to the smaller size it leads to the question whether this amount of work

might be too much for one single anesthetist, at least in the initial phase of operation, if it is his first transplant operation. Perhaps this could be answered by an anesthetist, this is not my field.

5) Dr. Taylor (now) states he should have sent an electrolyte sample to the lab before starting the operation. He is right. I also think that it would have been desirable, although it may not be called absolutely mandatory.

6) Dr. Taylor did not change mind concerning the central venous catheter.

7) Dr. Taylor (now) states that hypotonic fluids as were used in Adam may lead to dilutional hyponatremia and cerebral edema, aspects that were suggested previously by several experts (and me) so that there appears to be agreement achieved on this essential aspect, too .

Together, the new statements are very useful. They show that Dr. Taylor and several of the experts (myself included) are now in agreement on some of the important aspects and hence that there is better and more uniform understanding of the chain of events. Dr. Taylor even states at the end that he no longer uses the 0.18%NaCl/4%Glucose as a fluid bolus . (He also takes responsibility for the calculations and fluid administration which he calls incorrect and he offers an apology to the family).

2. Dr Leslie Dyer's Witness Statement

I read and considered Dr. Leslie Dyer's witness statement. Cerebral perfusion pressure is not my area of expertise (an anesthetist or a brain physiologist would be better placed to know specifically). From my perspective I would like to suggest the following:

1) We are not certain of the precision of the initial CVP of 17 mm Hg (=220 mm water) , although it was too high . The calibration of the device to the level of the heart could have been suboptimal .

2) To my eyes the electronic record of the mean arterial pressure may show 80 mmHg initially and 85 mmHg or higher after 8:30 am (058-008-023). Therefore the cerebral perfusion pressure CPP could have been at 60 mmHg. Dr. Dyer sees it at 50 mmHg. This value is important to his reasoning .

3) It is undeniable that Adam's hemoglobin at 9:32 a.m. had fallen to 6.1 g/L (hematocrit 18%) from a previous value of 10.5 g/L. This could have endangered oxygen supply to

tissues, including the brain if Adam's cerebral blood flow had slowed significantly . (I had also considered Adam's anemia in my report .)

Together: Dr. Dyer's proposal may offer a hypothesis that I would call potentially supplemental towards explaining Adam's brain death . However because of uncertainties (outlined above) it is difficult to draw conclusions from his hypothesis.