No. 20

CORONERS ACT (Northern Ireland), 1959

Deposition of Witness taken on **TUESDAY** the **18TH** day of **JUNE 1996**, at inquest touching the death of **ADAM STRAIN**, before me **MR J L LECKEY** Coroner for the District of **GREATER BELFAST** as follows to wit:-

The Deposition of **DR JOHN ALEXANDER**

of **BELFAST CITY HOSPITAL** *(Address)*

who being sworn upon his oath, saith

I am a Consultant Anaesthetist at the Belfast City Hospital. At the request of HM Coroner for Greater Belfast Mr J L Leckey LLM, I prepared a report on the circumstances of the death of Adam Strain which I now produce marked C4.

Mr. Bingham: There was a fluid deficit between 5am. and 9a.m. There would be a normal precaution for any child coming to surgery. During surgery it would have been impossible for the anaesthetist to measure urinary output. The blood loss was 2/3's of his volume which was very serious. The fact that the haemoglobin was normal at the end of the procedure would indicate that blood loss had been replaced. A reading of 14 mm a pressure was abnormally high. That would have made me think there was something wrong with the transducer. If it had worked low and gone up that is the response that would have been wanted. I am not convinced that trying of the internal jugular vein effected drainage from the vein. If it had been effected there was no way the anaesthetist would have known. I would not entirely concur with Dr Turner's view that a compromised renal function is only a factor in the onset of hypernatraemia.

TAKEN before me this 18th day of JUNE 1996

J L Leckey

Coroner for the District of Greater Belfast

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Miss Higgins: The USA practice regarding infusion is not followed here. Adam's case is not an identical scenario to that in April paper. There the children had evidence of hypoxia and there is no evidence of that in Adam's case. With the benefit of hindsight solumin levels in children with a compromised function should be monitored. That would not have been the former practice. I agree that a reading of 123 suggests that something should be done but it would not have been particularly alarmed. I would have been concerned with the Haemotocrit reading. That would have been an indication for giving blood transfusions. I would have taken a further blood gas and haematocrit reading. If I thought a transfusion was going a faulty reading I would get another one. I think it was unlikely that a 1000 ml infusion of saline would raise the urine pressure to 17mm. I do not know what volume would achieve that I do not believe that the problem could be recognised until after the operation. I would be

Mr Brangham: There was a fluid deficit between 5.00 am and 7.00 am. That would be a normal precaution for any child coming to surgery. During surgery it would have been impossible for the anaesthetist to measure urinary output. The blood loss was 2/3's of his volume which was very serious. The fact that the haemoglobin was normal at the end of the procedure would indicate that blood loss had been replaced. A reading of 17mm re pressure was abnormally high. That would have made me think there was something wring with the transducer. If it had started low and gone up that is the response that would have been wanted. I am not convinced that tying off the internal jugular vein effected drainage from the vein. If it had been effected there was no way the anaesthetist would have known. I would not entirely concur with Dr Sumner's view that a compromised renal function is not a factor in the onset of hyponatraemia.

Miss Higgins: The USA practice regarding infusion is not followed here. Adam's case is not an identical scenario to that in Arieff's paper. There the children had evidence of hypoxia and there is no evidence of that in Adam's case. With the benefit of hindsight sodium levels in children with a compromised renal function should be monitored. That would not have been the former practice. I agree that a reading of 123 suggests that something should be done but I would not have been particularly alarmed. I would have been concerned with the Haematocrit reading. That would have been an indication for giving blood transfusions. I would have taken a further blood gas and haematocrit readings. If I thought a transducer was giving a faulty reading I would get another one. I think it was unlikely that a 1000 ml infusion of saline would raise the venous pressure to 17mm. I do not know what volume would achieve that. I do not believe that the problem could be recognized until after the operations. I would be very concerned if the sodium level dropped to 120 or below. I do not know if Adam's death could be averted. Every drop below 123 increases the risk. I would agree that in Arieff's paper and in Adam's case there was a high infusion of fluids.