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Date: Ref: File Name: Location:

25/4/2006. Clarke Roberts Rgh/1/134/05.

Mr McGrea for Family
BR.

MR Lackey.

Date of Death 23-10-1996.

Inquest being held - Adam Shaw Lucy Crawford + Rachael Ferguson -
fluid management played a part in why each child died -
Subject of much discussion + Comment - O'Hara Inquiry -
to Take a wide view - Can anything be done to prevent a
Simular death.

Roberts have asked to formally refer the deaths to Inquiry +
as RCH asked Court to look at case. provided O'Hara Inq
Copies of all reports obtained. Does it think that O'Hara
would work getting consent/auth of Minister.

Was hypo - primary/ part or / an ancillary nature?

Aim of any Inquest - ascertain accurate formulation of
Cause of Death? Death Cert being re-written - How would death
of clause be formulated? What will be used + what
relegated to part 2 (Significant Conditions but not
Causative of death) Formulation of causal chain?
If there are wider issues - leave them for O'Hara Inquiry.

Is there sufficient evid that child hypo?
where is Causal chain?

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1 [illegible] off 2 a meeting for 2 hrs. Rose will attend this request.

Henron

- Infection cannot be absol excluded.
Path cannot say if epilepsy was the cause of death.
He couldn't exclude a metabolic cause of death (low sodium, ADH secretment)

C - Why did Claire die?

Pathologist - Cerebral oedema (as path. not his place to give the cause of the cerebral edema.)

The was also little inflam: in the brain, not signif but none the less, it was there.
He also carried out p.m on Rachel

Brain? 1606 grms

Path - Brain should be 12-1300 grms. 1600 grm more than expected child for a child of this age.

SI - Oedema caused by hyponaethemia?
Yes, this can be the cause.

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Cnsl – You were aware her sodium level had dropped to 121

Path – Yes, but not aware that it had dropped from 132.

Cnsl – Were all factors present for hypo?

Yes, along with respiratory arrest.

Mr Lavery – Were you aware of some infection?

Path – Possibly a viral infection, but other factors may have caused inflam. of the brain.

Mr Lavery – Meningion Encaephalitis?

Path – Probably offered the autopsy with an infection probably being a cause of the death

He would see hyponaetvemia quite often so he would know sodium as low as 121 would indicate some was present

Mr Lavery – Any conclus as to what part epilepsy would have played in the cerebral edema?

Path – He couldn't say, but nursing staff initially thought this was [illegible] factor.

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Mr Lavery – an infection could not be excluded as a factor?

Path – no it could not be excluded as a factor in causing her death.

Dr I McConkey, Con. in Paed A&E
Maconachie St Mary's, London

Prepared Rep on behalf of the Coroner.
Re fluid mang. issues are referred to Mr Bingham.
Maconachie
Dr Mc Conkey read out his Report.

Cor – Do you accept hypon was present?
Dr Maconachie – Yes he accepted this. 132 is right on the edge of the low sodium reading.
Inv – How would you have formulated the
Dr M – death cert?
1 a) Cerebral oedema
3 Contributing factors – b) encephalitis / encephalopathy / hyponatraemia.

Part 2 Status-epilepticus (illus by Claire's history of learning difficulties)

A child with L diff may make neurol exam quite difficult in itself.

Cnr — What sort of complaints would a child have if hypo developing?

Dr M
- Headaches
- Vomiting
- Lethargic

Cnr — Any key symptoms?

Dr M — Headache & lethargy which would affect neurol function. These are important symptoms in diagnosing hyponatraemia
Hyponatraemia can be a treatable underlying cause for the cerebral oedema

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Cnr - Re Mr Robert's statement ?

Dr M - Cant answer many of his ques. Most are for management to answer. Possibly more in ques of Dr Bingham. He would have related the death of Claire to the Coroner had he have looked after her at the time.

Mr McCrea - Claire's underlying cond did affect the drs assessment of her but there were simple tests (bloods) which could have been taken in the morning bearing in mind the borderline (low) sodium level

Dr M - Yes b. test ~~should~~ may have been taken @ that time. Her health was deteriorating during course of the day. Blood test would have shown lower

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* Claire's death warrants notification in the O'Hara Inquiry. *

sodium levels, possibly suggesting hyponat. There are diff. in ascribing to cerebral odema to encaephilitis /encaephilopathy / hyponat. There truely is a difficulty here. All ~~sympm~~ symptoms were consistent with a child suffering from hyponat, but were also consistent with a number of other conditions as well.

Sodium levels can also be checked by studying urine sample. He agrees this was not done in this instance. He would have the sodium test repeated immed. there was a reading this low (121). He would then carry out a clinical assessment of the child. Dogeas stg

* Need to know the underlying cause of the hyponat when trying to treat it. *

There is a diff in determ. urinary output in children, b/c the use of a catheter.

Claire wore nappies & it was diff.

or impossible to measure the fluid loss (as with vomiting).
Neurological status was the point of concern in this instance.
Raised white cell count not proof of an infection but based on other symptoms it was suggestive of one
It's a question of linking cause & effect.
It is diff. to ascribe which one of the contributing factors ultimately led to the demise, but hypo. is definately a contrib. factor under Part 1(b). It certainly is one of 3 key elements in contrib. to her death.
There are sub-elements to the hyponat. Don't know the underlying cause of the contributing factors in Part 1 (b). Diff. to give an absolute degree of precision in these cases.

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Dr Bingham FRCA
Con. Paed. Anaeth., Great Ormond St, London

Prep. Rep @ request of Coroner. Her req Dr Mackenzie prep a rep. on Neurolog. angle of this case. Dr Bingham summarises his Report (background)

Glasgow coma score of 6 is almost moribund – a very deep coma.

Cnr – How would you formulate the cause of death.

Mr Bingham – 1 a) Cerebral oedema
b) Encephalopathy (hyponat.
agrees with Dr Mackenzie.

Cnr – Would you rep to Local Cnr?

Mr. B – Yes, I think so.

Cnr – Should Claire's death be included in the Public Inquiry?

Mr B – Not possible to completely excl. that the sodium reading was an artefact. The test should have been repeated. Mr C. Hayes should make the determination [illegible] case for [illegible]

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Cnr – Do you know what may have caused the 3 underlying factors?

MW B – Refers to the Toronto Paper on admin. fluids on a subject with such low sodium readings. Fluid output doesn't explain the fall in the sodium levels (based on recs re wet nappies, ath. this is indirect evidence)

Cnr – Other causes other than fluid management can cause hypon?

MW B – Claire may have had v. high levels of ADH secretion caused by . neurolog. illness . nausea / vomiting So there may have been some ~~the~~ intrinsic factor in Claire which led to the low sod. levels.

Cnr – What symptoms would alert you to hypo? . neurological irritability . slowing of heartbeat / high b.p . loosing consciousness

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These symptoms are spec. to cerebral odema – not to the cause of the cerebral odema.

Cnr – If sod. reading was an artefact & you had restricted the fluid, would this have caused any problem?

Mr. B No.

Cnr – Could you point to a particular thing that may have made a difference to the outcome?

Mr. B – Aggressive intervention at the time of the low sod. reading may have changed the outcome difficult to say. Aggressive intervention, that which was given @ 03:00.