Business Services Organisation

Directorate of Legal Services
PRACTITIONERS IN LAW TO THE HEALTH & SOCIAL CARE SECTOR

2 Franklin Street, Belfast, BT2 8DQ
DX 2842 NR Belfast 3

Your Ref:
BPC-0096-12
BPC-0067-11
BPC-0113-12
BPC-0135-12

Our Ref:
HYP B4/02

Date:
15.02.12

Mr B Cullen
Solicitor to the Inquiry
Arthur House
41 Arthur Street
Belfast
BT1 4GB

Dear Sir,

RE: INQUIRY INTO HYPONATRAEMIA RELATED DEATHS

I refer to the above and your letters of 9th January 2012 (BPC-0096-12), 26th January 2012 (BPC-0113-12) and 13th February 2012 (BPC-0135-12).

I now enclose a copy of the notes and records in the possession of the Regional Neuropathology Service in relation to the autopsy carried out on Claire Roberts.

Yours faithfully,

Joanna Bolton
Solicitor Consultant
Email: [redacted]
Tel: (028) [redacted]

NPPM 114/96. Dr. Herron

		Date In	Date Out
Brain Only			
Brain Blocks X10 ✓	HHE	28/11/96	
			23rd 6·97.
Further blocks Re. Mirk. 31·1·97			
1 mammary bodies	HE		
4 Brain	"		
urgent for NSU			
EBIs out to Dr. Mirk			6·2·97.
Cord x 2		1/5/97	23/5/97

Post. N°	PATHOLOGIST	Deceased	Ward / Hospital N°	Specimen Received	Date IN
[redacted]					
114/96	Dr. Herron	CLAIR ROBERTS		Brain only. 1 piece for Snap ~~Frozen~~ – 2 Blocks 1 piece for EM	24/10/96
[redacted]					

M.L.S.O.	Diagnosis	Cut up - Notes	Stores/out etc
[redacted]	[redacted]	[redacted]	[redacted]
		see overleaf for copy of "note".	AP
LIPZNG	Viral Encephalitis Epilepsia	Cut-up 28/11/96 - Dr. Heiron - Blocked	KPH 28/11/96 Out 24/4/97
[redacted]			

NPPM N°	PATHOLOGIST	Deceased	Ward / Hospital N°	Specimen Received	Date IN
[redacted]					
114/96	Dr. Herron	CLAIR ROBERTS		Brain only 1 piece for -2 blocks Snap Frozen 1 piece for EM	24/10/96
[redacted]					

M.L.S.O.	Diagnosis	Cut up - Notes	Store/out etc.
[redacted]			
L1/21/96	Viral Encephalitis Epilepsia	NPPM 114/96 Stained slides → D.Sgt B. Goss for referral to Dr. B. Harding Copies of Parental Consent and Coroners Information rec'd. Copies of Inventory — B. Goss — Sp. Care file — Archivist S328	KPH 28/11/9 Out 24/4/9
[redacted]			

ROYAL VICTORIA HOSPITAL
AUTOPSY REQUEST FORM

NAME: Claire Roberts. AUTOPSY No: A 114/96.

D.o.B.: 10-1-87 SEX: F HOSPITAL No. 328770.

CONSULTANT: Dr Webb / Dr Stean. WARD: ICU HOSPITAL RBHSC

DATE OF ADMISSION: 22-10-96. DATE OF DEATH: 23-10-96.

DATE OF AUTOPSY: TIME OF AUTOPSY:

TIME COMPLETE REQUEST RECEIVED IN MORTUARY:

CLINICAL PRESENTATION: (major symptoms)

9½ year old girl c a history of mental handicap admitted with increasing drowsiness and vomiting.

HISTORY OF PRESENT ILLNESS: Well until 72 hours before admission. Cousin had vomiting and diarrhoea. She had a few loose stools and then 24 hours prior to admission started to vomit. Speech became slurred and she became increasingly drowsy. Felt to have sub clinical seizures Treated c rectal diazepam / IV phenytoin / IV valproate. Acyclovir + cefotaxime cover given. Serum Na^+ dropped to 121 @ 23-30hrs on 22-10-96. ? Inappropriate ADH secretion. Fluids restricted - Respiratory arrest 0300 23-10-96. Intubated + transferred ICU - CT scan - cerebral oedema. Brain stem death criteria fulfilled @ 0600 + 18.15 hrs. Ventilation discontinued 18-45hrs.

PAST MEDICAL HISTORY (incl drug therapy):

Mental handicap

Seizures from 6 months - 4 years.

INVESTIGATIONS: (include laboratory, ECG, X-ray etc).

See chart.

CLINICAL DIAGNOSIS Cerebral oedema 2° to status epilepticus

? underlying encephalitis

Use back of this sheet if required

LIST CLINICAL PROBLEMS IN ORDER OF IMPORTANCE:
(This list will enable the pathologist to produce a more relevant report.)

(1) Cerebral Oedema
(2) Status Epilepticus
(3) Inappropriate ADH secretion
(4) ? Viral enaphalitis

DEATH CERTIFICATE: If a death certificate has already been prepared please copy it below for our records.

(1)

Disease or condition directly leading to death:

(1)

(a) Cerebral oedema.

due to

Antecedent causes, morbid conditions, if any, giving rise to the above cause, stating the underlying condition last.

(b) Status epilepticus

(c)

(2)

Other significant conditions, contributing to the death, but not related to the disease or condition causing it:

Will you or a colleague be attending the review session at 1.45 pm on the day of the autopsy? YES (NO)

Signature of requesting doctor Heather J Stern.

Please write your name legibly and give an extension number where you can be contacted Belfast 327613

THE FINDINGS OF THE AUTOPSY WILL BE TELEPHONED TO THIS NUMBER

EASTERN HEALTH AND SOCIAL SERVICES BOARD

NPM 11/96

Hospital	Surname and First Names	Hospital No.
RBHSC	Roberts Claire	328770
Ward or Dept.	**Physician or Surgeon**	**Sex** / **Age**
ICU	Dr Heather Steen	F / 9

I hereby give consent to a limited Post Mortem examination being carried on the body of Claire Roberts

late of (address) [redacted] Brain only

I am the nearest living relative of the deceased.

Signature [redacted]

Address [redacted]

Relationship to the deceased Father Date 23-10-96.

POST MORTEM CONSENT FORM.

AP 430 M.R.42.

DOCTOR: S CARY COMPLETE + SENT 12/2/97.

DEPARTMENT OF NEUROPATHOLOGY
AUTOPSY REPORT

Autopsy No.: NPPM 114/96

Name :	ROBERTS, Claire		
Age :	9 1/2	Hospital No.:	328770
Sex :	F	Hospital :	R.B.H.S.C.
Pathologist :	Dr. Herron	Ward :	I.C.U.
Clinician :	Dr. Webb/ Dr. Steen	Date of Admission :	22/10/96
Date of Necropsy :	24/10/96	Date of Death :	23/10/96
Time of Necropsy :	11.30 am	Time of Death :	6.25 hrs
Restrictions :	Brain only		

ANATOMICAL SUMMARY

H/O recent diarrhoea and vomiting ; central oedema (brain stem necrosis. Subacute inflammatory changes in perivascular space.

CODES

G93.6 ; G43.9 migraine disorder

CLINICAL SUMMARY

H/O epileptic seizures since 10 months of age. Neuronal

She was well until 72 hours before admission. She had visited her cousin who had vomiting and diarrhoea. She had similar symptoms and 24 hours prior to admission started to vomit. Her speech became slurred and she became increasingly drowsy. She was felt to have subclinical seizures. She was treated with rectal Diazepam, intravenous Phenytoin and intravenous Valproate. She also had Acyclovir and Cefotaxime. Her serum sodium dropped to 121 and there was a query of inappropriate ADH secretion. Her fluids were restricted but she had respiratory arrest at 3 am on 23/10/96. She was intubated and transferred to intensive care where a CT scan showed cerebral oedema. Brain stem criteria was fulfilled at 6 am.

In her past history she had iatrogenic epilepsy since 10 months and mental handicap.

BRAIN DESCRIPTION

The fixed brain weighs 1606 g. There is no cortical venous thrombosis and there is no meningeal exudate. There is symmetrical brain swelling with effacement of gyri. There is uncal prominence but no necrosis.

On sectioning of the brain the presence of diffuse brain swelling is confirmed. There is no evidence of cortical necrosis, either laminar or focal. There is white matter swelling with effacement of the IIIrd ventricle but no evidence of shift at the midline. The paraventricular structures including the mammillary bodies show no evidence of necrosis. There is no basal ganglia or diencephalon lesion. On sectioning of the brain stem there is no evidence of brain stem haemorrhage to suggest Leigh's disease. The cerellum is unremarkable.

HISTOLOGY

Multiple sections from frontal, parietal, temporal cortex, deep white matter, routine sections from basal ganglia, periventricular grey matter, hypothalamus, mammillary bodies, brain stem and cerebellum have been examined.

Cortex and White Matter The sections show that there is focal meningeal thickening and a cellular reaction in the meninges and perivascular space and the underlying cortex. ~~is present in pla~~ces. There is no cortical necrosis but in the deep white matter focal collections of neurones are present arranged in a rather haphazard manner.

Basal Ganglia The sections show no pigmentation or calcification and there is generally good neuronal preservation.

Periventricular Grey Matter, Hypothalamus and Mammillary bodies There are focal collections of neuroblasts in the subependymal zone suggestive of a migration problem. There is generally good neuronal preservation and no vascular proliferation is present in the periventricular grey matter and mammillary bodies. However small foci of necrosis are present in the periventricular grey matter which are probably a consequence of cerebral oedema.

Hippocampi The sections show no displaced neurones or Ammon's horn sclerosis. There is some rarefaction and occasional ischaemic neurones are present in the pyramidal cell layer. No tumour has been identified.

Cerebellum The sections show no significant cell loss in Purkinje cell or granule cell layer. There is no cerebellar cortical dysplasia and the dentate nuclei are preserved.

Brainstem The sections show focal haemphrrhagic areas. There is no myelinolysis.

COMMENT:

In summary, the features here are those of cerebral oedema with neuronal migrational defect and a low grade subacute meninoencephalitis. No other discrete lesion has been identified to explain epileptic seizures. The reaction in the meninges and cortex is suggestive of a viral aetiology, though some viral studies were negative during life and on post mortem CSF. With the clinical history of diarrhoea and vomiting, this is a possibility though a metabolic cause cannot be entirely excluded. As this was a brain only autopsy, it is not possible to comment on other systemic pathology in the general organs. No other structural lesion in the brain like corpus callosal or other malformations were identified.

11/2/97

NPPM 114/96. Dr. Herron

		Date In	Date
Brain Only			
Brain Blocks XII ✓	HHE	23/11/96	
			23rd
Further blocks Dr. Mirk. 31.1.97			
1 mamillary bodies	HE		
4 Brain	"		
urgent for NSU			
EBIS out to Dr. Mirk			6:2
Cord x 2		1/5/97	
			23/5

DEPARTMENT OF NEUROPATHOLOGY
AUTOPSY REPORT

Autopsy No.: NPPM 114/96

Name :	ROBERTS, Claire		
Age :	9 1/2	Hospital No.:	328770
Sex :	F	Hospital :	R.B.H.S.C.
Pathologist :	Dr. Herron	Ward :	I.C.U.
Clinician :	Dr. Webb/ Dr. Steen	Date of Admission :	22/10/96
Date of Autopsy :	24/10/96	Date of Death :	23/10/96
Time of Autopsy :	11.30 am	Time of Death :	6.25 hrs
Restrictions :	Brain only		

ANATOMICAL SUMMARY

CODES

History of recent diarrhoea and vomiting, cerebral oedema (brain weight 1606 g), brain stem necrosis. Subacute inflammation meninges on perivascular space.
History of epileptic seizures since 10 months of age, neuronal migration disorder.

T-A0100 M-01000 D4-00000
M-40000 D4-41720

CLINICAL SUMMARY

She was well until 72 hours before admission. She had visited her cousin who had vomiting and diarrhoea. She had similar symptoms and 24 hours prior to admission started to vomit. Her speech became slurred and she became increasingly drowsy. She was felt to have subclinical seizures. She was treated with rectal Diazepam, intravenous Phenytoin and intravenous Valproate. She also had Acyclovir and Cefotaxime. Her serum sodium dropped to 121 and there was a query of inappropriate ADH secretion. Her fluids were restricted but she had respiratory arrest at 3 am on 23/10/96. She was intubated and transferred to intensive care where a CT scan showed cerebral oedema. Brain stem criteria was fulfilled at 6 am.

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HISTOLOGY

Multiple sections from frontal, parietal, temporal cortex, deep white matter, routine sections from basal ganglia, periventricular grey matter, hypothalamus, mammillary bodies, brain stem and cerebellum have been examined.

Cortex and White Matter The sections show that there is focal meningeal thickening and a cellular reaction in the meninges and perivascular space in the underlying cortex. There is no cortical necrosis but in the deep white matter focal collections of neurones are present arranged in a rather haphazard manner.

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Hippocampi The sections show no displaced neurones or Ammon's horn sclerosis. There is some rarefaction and occasional ischaemic neurones are present in the pyramidal cell layer. No tumour has been identified.

Cerebellum The sections show no significant cell loss in Purkinje cell or granule cell layer. There is no cerebellar cortical dysplasia and the dentate nuclei are preserved.

Brain Stem The sections show focal haemorrhagic necrosis. There is no myelinolysis.

COMMENT:

In summary, the features here are those of cerebral oedema with neuronal migrational defect and a low grade subacute meninoencephalitis. No other discrete lesion has been identified to explain epileptic seizures. The reaction in the meninges and cortex is suggestive of a viral aetiology, though some viral studies were negative during life and on post mortem CSF. With the clinical history of diarrhoea and vomiting, this is a possibility though a metabolic cause cannot be entirely excluded. As this was a brain only autopsy, it is not possible to comment on other systemic pathology in the general organs. No other structural lesion in the brain like corpus callosal or other malformations were identified.

25/10/96
11/2/97

DEPARTMENT OF NEUROPATHOLOGY
AUTOPSY REPORT

Autopsy No.: NPPM 114/96

Name :	ROBERTS, Claire		
Age :	9 1/2	Hospital No.:	328770
Sex :	F	Hospital :	R.B.H.S.C.
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Time of Necropsy :	11.30 am	Time of Death :	6.25 hrs
Restrictions :	Brain only		

ANATOMICAL SUMMARY

CODES

History of recent diarrhoea and vomiting, cerebral oedema (brain weight 1606 g), brain stem necrosis. Subacute inflammation meninges in perivascular space.

History of epileptic seizures since 10 months of age. Neuronal migration disorder.

CLINICAL SUMMARY

She was well until 72 hours before admission. She had visited her cousin who had vomiting and diarrhoea. She had similar symptoms and 24 hours prior to admission started to vomit. Her speech became slurred and she became increasingly drowsy. She was felt to have subclinical seizures. She was treated with rectal Diazepam, intravenous Phenytoin and intravenous Valproate. She also had Acyclovir and Cefotaxime. Her serum sodium dropped to 121 and there was a query of inappropriate ADH secretion. Her fluids were restricted but she had respiratory arrest at 3 am on 23/10/96. She was intubated and transferred to intensive care where a CT scan showed cerebral oedema. Brain stem criteria was fulfilled at 6 am.

In her past history she had iatrogenic epilepsy since 10 months and mental handicap.

NPPM 114/96

BRAIN DESCRIPTION

The fixed brain weighs 1606 g. There is no cortical venous thrombosis and there is no meningeal exudate. There is symmetrical brain swelling with effacement of gyri. There is uncal prominence but no necrosis.

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COMMENT:

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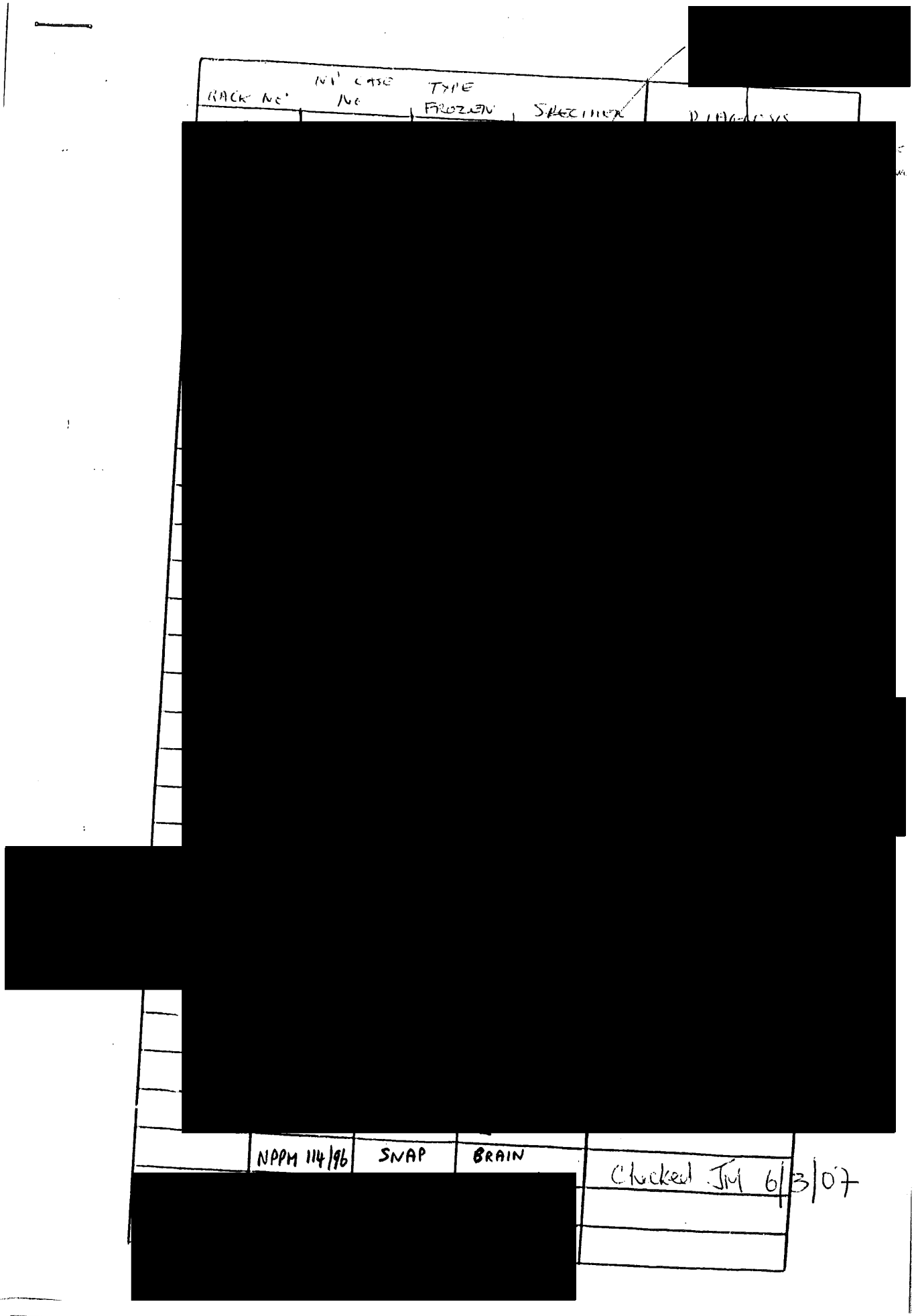
11/2/97


RACK No
NPPM 114/96
SNAP
BRAIN
Checked JM 6/3/07

NPPM 114/96. Dr. Herron

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CODES

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25/10/96
11/2/97