OVERALL COMMENTS ON THIS CASE AND MY REPORT

Looking at my personal files of child and adult autopsies since 1975 (and I have kept most of them, including all HIV, maternal deaths, drug toxicity, sickle cell and post-operative cases) there are unresolved in-hospital deaths. The clinical and pathological features sometimes do not add up, even when there is an illustrated conversation between clinicians and pathologists at a mortality meeting (which did not occur apparently here). Similarly at inquests, clear mutually agreed answers do not necessarily emerge; just probabilities sometimes – and in such medico-legal cases I cannot avoid mentioning that many autopsies, neurological or otherwise, are performed less well than happened in this case.

Put simply, I think that the following happened in the case of Claire Roberts:

1. She had a confusing multifactorial clinical story on top of known epilepsy, and was thought to have continuing subclinical seizures. The fact of hyponatraemia was evident, but the suggestion that it might be related to IV infusions and dilution was not followed up (see #3 below).

2. The clinicians were evidently puzzled enough to want to learn more, although confident enough to write a natural cause of death for registration. There was enough information presented to the pathologists for them to commence the autopsy (and see under #9 below concerning blood and other fluid sampling).

3. A consented autopsy was undertaken, focussing on the brain only, as the obvious organ damaged.

4. The autopsy produced pathological positive and negative information, some almost certainly incorrect (encephalitis), that could be used in further clinico-pathological review of the case.

5. But that review never happened, I suspect partly because of the length of time taken for the autopsy analysis to be completed, and partly because it all looked to the pathologists to be complicated and rather vague.

6. The cause of death is most probably/almost certainly hyponatraemic cerebral oedema.

If these comments appear dismissive and facetious, they are not intended as such. I have encountered many similar cases of clinico-pathological uncertainty, and it does

require a modicum of proactivity on all sides to pursue them to a satisfactory conclusion (if there is one).

General autopsy concerns

The elephant in the room over all recent and current autopsy activity concerns its role in Medicine: how it is practised by pathologists, how it is regarded by clinicians, how it is valued as part of the medical systems and how it is regarded by the public who pay for them indirectly. As is evident from recent events in England, such as the Dr F Patel episodes of poor autopsy practice and the 2006 NCEPOD report 'The Coroner's autopsy: do we deserve better?' – this was aired in my report on the Adam Strain IHRD case – autopsies are not necessarily highly regarded. Unfortunately, the same holds to a greater or lesser extent for consented autopsies, once the backbone of ongoing medical audit and a source of teaching and training. If we had more of them, and there were more clinico-pathological mortality conferences, they would be taken more seriously by all concerned.

Consider the contrast: pathologists are regularly taken to task by investigatory boards and the GMC when errors are made in surgical biopsy and cytology diagnostic practice on living patients. But only very recently has the GMC expressed any interest in the performance quality of medico-legal autopsies and, to my knowledge, has never been involved in an imperfect consented autopsy [there may be an occasional perinatal consented autopsy of concern, but that is not my area]. The Royal College of Pathologists has also kept away from governance issues in autopsy practice, though it flourishes in the guidance areas of diagnostic reporting in the living. The 1998 guidelines on autopsy practice were a belated attempt at catch-up, but failed to hit the target for many complex reasons.

In summary, there has been for sometime a belief that an unsatisfactory autopsy outcome does not really matter in Medicine. I believe that it does, and these IHRD cases support that.

Sebastian Lucas

21st Nov 2012

Responses to Questions set out in paragraph 78 of the Brief

Decision not to report to the Coroner

1. Please describe the criteria governing referral of deaths such as Claire's to the Coroner. On what basis could the decision not to report Claire's death to the Coroner be justified?

   Deaths are reported to HMC if the cause of death is unknown or if an unnatural death is possible/suspected ('unnatural' is not defined statutorily – but is commonly understood to include violence and significant medical mishaps). Some hospitals also report all deaths that occur 0-24 hours from admission [not relevant here].

   Death certificates are completed to the 'best of the doctor's knowledge and belief'. Given that such a natural cause certificate was completed, the coroner would not be involved. See also under #3 below.

2. Was Dr. Steen, in coming to the decision not to report Claire's death to the Coroner, correct in not holding discussions with, or seeking the advice of:

   (a) The Coroner;

   Yes, she was correct – it is the clinician's duty to report to cases where he/she thinks the law applies. She did not so think in this case.

   (b) Dr. Webb;

   (c) Dr. McKaigue;

   Re both: presumably the information available was in the notes with comments by many attending doctors, so Dr Steen would/could have seen what they thought at the time – which is variable, see below #3.

   (d) Mr. and Mrs. Roberts?

   This is really nothing to do with them, unless they had expressed concern with the management of the case and the unfortunate outcome. Did they?

3. In the light of PEL (93)36 Annex B, paragraph 3 (*"If a patient dies unexpectedly, the Clinician in charge of the case must report the death immediately to the Coroner")* please provide your opinion as to whether Claire's death should have been deemed unexpected/expected.

   The clinical story is confusing – unlike the two previous IHRD cases I have reviewed, which had clear cut stories – because of the chronic epilepsy, and apparent status epilepticus. Epilepsy per se is a reasonable, not uncommon natural cause of death for many purposes. Then there is the issue of 'encephalitis' which was seriously considered as relevant by the clinicians – a natural disease process, if uncommon. Epilepsy and encephalitis have mortalities, thus may be considered 'expected'.

The issue of low blood sodium, 'fluid overdose with low sodium fluids', and the possible link to cerebral disease was picked up by the unnamed SHO at 23.30pm on 22nd Oct (Brief #30), but that does not appear to have been followed up by a named more senior doctor until 4 hours later (Dr McKaigue). When the child died, the considerations of causation then revolved around status epilepticus, SIADH, meningo-encephalitis. No one then appears to remember the possible iatrogenic aspect (including Dr Webb).

So I am not surprised that it was not reported to the coroner. In other times and circumstances it may well have been so reported. If you consider the literature – as well as our collective anecdotal experience - on reporting/not reporting deaths to coroners and holding/not holding inquests, you would appreciate better the vast range of actual behaviour across the UK where – in theory – the same laws essentially apply [reference: What is a natural cause of death? A survey of how coroners in England and Wales approach borderline cases. Roberts IS, Gorodkin LM, Benbow EW. J Clin Pathol. 2000 May;53(5):367-73.]

4. In all the circumstances should Dr. Steen, Dr. Webb or the pathologist have properly considered the death of Claire Roberts to be:

   (a) An unexpected death?

   As above, not necessarily

   (b) An unexplained death?

   As above, not necessarily

   (c) Complicated by a care management issue?

   As above, not necessarily

Decision to conduct a brain-only autopsy

5. In all the circumstances was there justification for the Autopsy to be limited to 'brain only'?

   See #9 & #7 below. I think the decision to limit the examination to the head was not unreasonable – and I have done many similar cases myself.

6. What information should have been conveyed to Claire's parents when obtaining consent for limited post mortem, and should the pathologist have played any part in this process?

   It depends what the clinicians wished to ask for, and why and what the parents wished re the extent of examination. As others have explained, sometimes the consent autopsy rate is improved by indicating a limit to the process. There were no statutory or historical 'rules' in this business until after 2001.

Pathologists are not usually involved in consultation over consented autopsies with the signing relatives. Sometimes, clinicians do discuss cases in advance with pathologists, over issues of timing, questions to be addressed, realistic limitations over what might be achieved by the autopsy, etc

7. Please provide any guidance extant in 1996-1997 in respect of gaining consent from next of kin for post mortem/ limited post mortem.

   The RCPath 1991 document 'The Autopsy and Audit', chapter 2, includes material on obtaining consent, referring to consultant clinicians training their juniors and assistance from bereavement officers in hospitals. But this document would not be seen by those staff. Whatever 'standard historical' practices that applied in each individual hospital would apply in 1996, originally based on the Human Tissue Act 1961, applied in this case.

   Limited autopsies. I am not aware of any official guidance on this issue. I assume that common sense pertains – the autopsy is a process intended to answer questions posed by a death, and in many instances a limited autopsy suffices (as here).

8. Should the reasons behind limiting the Autopsy have been entered into the medical notes or recorded in any other manner?

   Ideally yes, but in reality these things do not necessarily happen. Case notes, even in 2012, are much less complete than you expect. Eg laboratory results that come through near or after a death do not usually get inserted into the notes (observations from the mortuary). All this has become more complicated and/or simpler with the increasing roll-out of electronic-only (paperless) laboratory reports, which may or may not be available to all relevant hospital staff.

9. What are the potential investigative advantages/disadvantages of deciding to conduct a limited Autopsy?

   Complete or incomplete autopsy. The main issue was indeed the head, so a brain-only autopsy was appropriate. The terminal chest X ray indicated patchy changes, reflecting some terminal changes (eg pneumonia acquired in ITU), not a major presenting clinical pathology. The clinical story of gastroenteritis: from my experience when these episodes are viral in causation, there is nothing to see pathologically.

   The issue of midazolam ?toxicity has arisen from later scrutiny of the medical records. The drug is a short-acting benzodiazepine. There is no indication that the pathologists did scrutinise these records and note this drug administration: the clinical summary in the autopsy report merely reproduces the information in the autopsy request form. That does include administration of a related drug, diazepam. Toxicity includes cardio-respiratory depression. But the autopsy – head-only or complete – would not be able to address the question of toxicity from the morphology, since there would not be relevant gross or microscopic pathology. Only blood and other body fluid levels would be relevant. No such samples were taken.

Again, in reality, unless the pathologists were informed of concern about drug toxicity in this case, or had formed their own concerns from reading of the medical record, they would not have taken such samples. Evidently they had no such concerns. It was not then standard, nor now, for all autopsies in children to include body fluid samples as per protocol in order to address questions that might arise later.

It should be noted that in autopsy examination of patients with epilepsy, the point of body fluid analysis of anti-epileptic drugs is to determine whether the patient had taken them and whether the blood levels were pharmacologically active.

Autopsy Request Form

10. Having regard to the Autopsy Request Form, and accompanying neuropathology documents, we would be grateful if you could provide comment in respect of the following issues:

    (a) The fact that the Form was neither dated nor timed, and the time request received in mortuary not specified.

        These things happen, but it is not good.

    (b) Whether the Autopsy of Claire Roberts could have commenced before receipt of Autopsy Request Form.

        It could and should not start before it is certain that the request has been signed by the relatives – otherwise that would be illegal. But it could start before the paper reached the mortuary if the pathologist wanted to get a move on whilst being comfortable with the information provided and the purposes of the autopsy.

    (c) The fact that the Autopsy day book sheet does not include hospital, ward number or hospital number, spells Claire's name incorrectly as "*Clair*" and enters a diagnosis which does not appear to be a quote from the Autopsy Request Form.

        These things happen. The only serious aspect would be if there could be confusion between two different patients.

    (d) The fact that the Provisional Anatomical Summary (Ref: 090-005-007) is undated, gives an anatomical summary which does not appear to be a quote from the Autopsy Request Form, gives time of death at variance to Autopsy Request Form, and notes "*time of Necropsy 11:30am*" despite the fact that this is not recorded elsewhere.

        This Summary is merely a 'holding statement' to indicate that the case analysis is in progress – and be patient whilst brain fixation and subsequent histology

takes place. The error in detail does not matter much since there would be no confusion with another autopsy case. Nowadays we pathologists may give only verbal information whilst a case analysis is in progress, and issue just one, final autopsy report: this prevents confusion with reports of different chronologies and content.

(e) The fact that Dr. Steen seemingly names Dr. Webb as Lead Consultant when she was the requesting and Named Consultant.

These things happen

(f) The fact that Dr. Steen omits to note that the Autopsy is limited to 'brain only'.

I am confused. Document 302-070b-011 (part of the consent form, signed by the father) includes 'limited post-mortem examination' and 'brain only'.

(g) The fact that the date of admission is incorrect in respect of Claire's admission to either Allen Ward or PICU.

These things still happen.

(h) The fact that the *"History of Present Illness"* is inconsistent with the recorded history in the following respects:

(i) *"Well until 72 hours before admission"*;

(ii) *"24 hours prior to admission started to vomit"*;

(iii) Omits to mention administration of the anti-convulsant drug Midazolam (notwithstanding the errors of calculation and administration in respect of this medication).

I have no specific comments: you should ask her. In my experience, clinical summaries often contain significant errors and omissions – both in consented and medico-legal autopsy cases. Part of the proper business is for clinicians and pathologists to review the case in real time, starting at the mortuary table, in order to agree on the correct chronology of pre-mortem events and interpretation from the pathological investigation.

(i) The fact that, notwithstanding that the Form should *"list clinical problems in order of importance"* to *"enable the pathologist to produce a more relevant report"* and a history is given of low sodium, cerebral oedema, inappropriate ADH secretion and respiratory arrest; Dr. Steen does not cite hyponatraemia nor any *"other significant conditions contributing to the death but not related to the disease or condition causing it"*.

Not entirely true: she lists SIADH, which I presume she considered at the time to be the cause of the overtly stated low blood sodium.

(j) The fact that the Form cites status epilepticus as a secondary cause of death on the death certificate, notwithstanding that Dr. Steen had not attended upon Claire Roberts and the suspicion of status epilepticus was unconfirmed.

But it was in the medical records. See comment to #2c above.

(k) The fact that the Form was signed by Dr. Steen as the sole requesting Consultant (Dr. Webb did not sign it).

Appropriate: she was the admitting consultant in overall charge.

(l) The fact that the Autopsy Request Form does not specify the "*investigations*" performed but refers instead to a "*chart*" without indicating the content or relevance thereof.

See above under #h(iii)

(m) Is it possible that the Autopsy Report was written without reference to the medical records?

I cannot tell; it is possible: ask her.

Autopsy Report

11. Having regard to the Autopsy Report, and the Provisional Anatomical Summary, we would be grateful if you could provide comment in respect of the following issues:

(a) The purpose of such a Report and what it might reasonably be expected to contain;

To depict the gross and microscopic examation, to correlate these along with any other laboratory and ancillary tests into a comprehensive account of the child's significant illnesses and cause of death. The conclusions, from a consented autopsy, may be identical with the clinical cause of death (which is formally registered already) or radically different, or something in between. Consented autopsies are intended to explore further what actually happened, in consultation with the treating clinicians.

(b) The fact that the Report is unsigned, and that the Inquiry has not yet seen a signed version of this Report whether to indicate authorship or signify finalisation;

Joint authorship – consultant and junior – is frequent and part of training. We do that in St Thomas' where the junior may have contributed much of the work and all the physical writing of the report, but it goes out under the consultant's name (hopefully with mention of the junior).

Signing the report: it is not necessarily the norm, particularly when the report is generated on a word-processor. I myself do not usually sign my reports by hand, but it is made clear that what goes out is the final report (see also under #10d above).

(c) The pathologist is given as Dr. Herron. This is now said not to be so. Do you find it readily understandable that Dr. Herron could have given erroneous evidence at the Inquest as to his authorship of the Report?

Ask him. In his supplementary report, he states that he did the autopsy and the brain cut, but then saw no more of the case, nor had any input into the histology interpretation and cause of death conclusions.

The inquest was many years later, during which one forgets individual cases. Maybe Dr Mirakhur had mentioned the case in the intervening years, prompting Dr Herron to think he had had greater input into its workup.

(d) Is it appropriate that the Autopsy Report should not be filed with the medical records of Claire Roberts?

Ideally it would be, but it depends on the clinicians receiving it, noting it, and passing it to Medical Records Dept for filing. In practice, clinicians usually hold onto such reports.

(e) Is it appropriate that the Autopsy Report is not sent to the GP and/or Mr. and Mrs. Roberts?

It should be sent to the GP, at least, and the relatives if they expressed a wish to see it. But this is done by clinicians and not usually by the pathologist, unless the latter has specifically been in contact with relatives. It all depends on the case and the circumstances.

(f) Would it have been appropriate to present the Autopsy Report at a mortality meeting/ audit or review meeting?

This is the major issue in this case - the lack of clinic-pathological correlation after the autopsy and histopathology had been completed.

The autopsy report provides no evidence of planned clinico-pathological correlation with the clinicians who requested the autopsy; there is no evidence that the death was reviewed at a multi-disciplinary meeting, so that all parties could arrive at a consensus on why the death occurred. The documentary material indicates that such discussions would normally take place. You could enquire – were such audit trails still in existence in memory or on paper (which would now happen) - whether such post-mortem correlation meetings happened in some, most or all other paediatric neuro-cases at the time in 1996.

It is a fact that not all complex cases examined at autopsy are resolved in terms of pathogenesis. Life is messy. The Comment at the end of the autopsy report leaves several possible strands of pathogenesis open, inviting further discussion with

other clinicians – which did not happen. There are many possible reasons for this, including disinterest, pressure of other case work, and perhaps a belief that nothing more definitive might ever emerge

(g) Inaccuracies and inconsistencies with the medical record, namely:

(i) Time of death;

(ii) Age at death (no date of birth given);

(iii) She had no *"history of recent diarrhoea"*;

(iv) She did not have *"history of epileptic seizures since 10 months of age"*;

(v) Did not have *"similar symptoms"* to her cousin;

(vi) Did not start to vomit *"24 hours prior to admission"*;

(vii) Her fluids were not, in fact, restricted;

(viii) Her epilepsy was not *"iatrogenic"*.

Overall comments. It is because of precisely this type of inaccuracy that coroners do not wish pathologists to present Clinical History in their autopsy reports: they get it wrong (I do sometimes as well) for all sorts of reasons, including laziness but rarely malevolence or deliberate obfuscation.

Specifically: fluid intake was altered once the low sodium was identified; 'iatrogenic epilepsy' is a curious phrase – you can ask him where he got that from.

(h) The difference between the Provisional Anatomical Summary and the Anatomical Summary appearing in the Autopsy Report.

See above under #10d.

(i) Whether the Anatomical Summary is sufficient/accurate/appropriate in light of the medical record?

This is not meant to convey clinical information as such, but is for computer-generated <u>pathological</u> coding and indexing (hence the T and M numbers). Our autopsy reports at St Thomas's have the same section under a different name, which is otherwise ignored.

(j) Of the 3 versions of the Report briefed, one is dated 11th February 1997 and bears Dr. Mirakhur's handwritten draft entry for *"anatomical summary"*. Is it usual to draft this after the *"comment"* section has been finalised and typed?

Evidently the report had not been finalised and typed, since those hand-written notes are incorporated later – but note, as above, that they are for coding purposes only.

(k) The Report does not contain a cause of death section?

In consented autopsy reports, there is not a necessary requirement – as there is for medico-legal autopsy reports – to have a formal WHO-style cause of death with parts I & II. The registered cause of death has already been filed. The COMMENT section covers the pathogenesis considered to be true at the time (which may or may not be congruent with the clinical cause of death).

(l) Does the Report comply with the contemporaneous Guidelines for Post Mortem Reports (Royal College of Pathologists, August 1993)?

See below under #z.

(m) Is it correct to interpret the Report as neither confirming nor rejecting viral infection, epilepsy or metabolic cause as a cause of death, and that it adds nothing to the previously understood facts surrounding her death namely cerebral oedema?

It does add support to the clinically suggested encephalitis hypothesis. But it does not consider in more detail whether metabolic (ie hypnatraemia) causes played a role.

(n) The Report comments *"the features here are those of..."* How do you interpret this? Does it mean *"findings consistent with but not proof of"*? Are there conventions governing the phrasing employed in such reports?

These mealy-mouthed terms are historical and standard, unfortunately, across all cellular pathology reporting. I wish they were not. Something is either present, or not present, or the reporter does not know (or has not heard of the something), or the presence/absence is unknowable by the limits of current knowledge and technical science. It would be better to be more precise in this issue. It is partly wrapped up in the concept that all cellular pathology reports are 'opinions', and thus may be wrong. Personally, I think that most of cellular pathology diagnostics is not an opinion but a fact – ie the something is there or not there, and the skill of the pathologist lies in getting that right. But when pathologists write "something, consistent with a diagnosis X" there is a sense that if they are wrong it does not matter quite so much as if they say "something, which diagnoses the disease X".

(o) Do you agree with the conclusions expressed in the *"comment"* section given the findings described?

I tread carefully here. I have not seen the brain histology slides, but am aware of the differing opinions of the NI pathologists and the external referees – Drs Squier and Harding. In brief, from the histology descriptions and the photographs supplied, it does not look like 'meningoencephalitis' to me. I am a little surprised that no one – even in retrospect – has performed more extensive specific immunohistochemical (IHC) stains on the tissue slides to determine for sure the presence/absence of inflammatory T-cells or reactive astrocytes and microglia; in my book, infiltrating CD8+ve T-cells are necessary to diagnose 'encephalitis' in

most cases, and (pace above under #n) they are either there in the brain or they are not. If they are not, then it is not encephalitis.

Dr Squier (report 16th June 2012) discusses some IHC findings. CD68+ cells (identifying macrophages and microglial cells) are increased in some locations, consistent with the acute reaction to brain injury during Claire's final admission. T-cell IHC was done on blocks of pons and midbrain (ref page 236-003-010) using a pan-T-cell marker CD3, but only the pons slide is commented on: "..[shows] a uniform background colour and little specific activity: the preparation may have faded". I assume from this that the IHC was essentially negative, ie no encephalitis. But it would have been preferable for a comprehensive IHC panel of stains to be applied to all the brain sections so as to comprehensively exclude encephalitis with T-cells and hence a putative viral infection of the brain.

Concerning cerebral oedema, I note much discussion about brain weights and swelling. But the brain cut was clear – the brain was swollen, and in the absence of significant (severe) inflammation, tumour or infarction, this has to be 'oedema'. The histological identification of cerebral oedema is a fraught area, with inter-observer variation.

(p) Is there an inconsistency between the reference to *"focal collections of neuroblasts in the sub-ependymal zone suggestive of a migration problem"* and the comment that *"the features here are those of... neuronal migrational defect"*?

I am not a developmental neuropathologist, so cannot comment.

(q) What, in all the circumstances, do you believe the relevance and implication of the reference to *"low grade subacute meninoencephalitis"* to be?

The pathologists – Dr Mirakhur at the time of initial reporting, and Dr Herron in retrospect – believe this to be present. I suspect they are wrong. But it can be difficult, and it did fit with some of the clinical concepts of Claire's disease at the time. So no one was going to contradict that. Perhaps had there been a mortality conference after the autopsy, a bright clinician might have asked "But is that enough inflammation/encephalitis to account for what happened?" – then the initial story would have unravelled and a focus on other causes such as hyponatraemia might have emerged.

(r) What is your understanding of the words *"metabolic cause"* employed in the *"comment"* section?

It could include many things from diabetes to inherited fatty acid deficiency to hyponatraemia. Dr Herron in his later comments evidently means this last entity.

(s) Was it appropriate, in all the circumstances, and given the information available to omit all reference to hyponatraemia? What importance should

have been attached to the history given on "*serum sodium dropping to 121,? inappropriate ADH secretion, cerebral oedema and respiratory arrest*"?

The low blood sodium was indicated to the pathologist. I suspect that in this case, it was overlooked as the cause of brain oedema because a) they may have been unfamiliar with the concept (it is not widely known to pathologists even now) and b) they believed they saw a true encephalitis in the brain [this was mistaken but, even now, neuropathologists have trouble in diagnosing and excluding encephalitis].

The respiratory arrest is a non-specific final common pathway for many events, including brain swelling.

(t) Should the pathologist have himself referred this case to the Coroner?

No, since he was not aware of any unnatural factor(s).

(u) Should Dr. Steen and/or Dr. Webb have considered referral to the Coroner upon receipt of the Autopsy Report?

No. There was nothing therein to seriously indicate an unnatural cause of death; the 'metabolic cause' was not specified. And importantly, it was three months after the death, and coroners strongly dislike being told about deaths that late after a death.

(v) Do you agree with Dr. Steen's interpretation of the Report given to the GP on 6th March 1997 (Ref: 090-002-002)?

(w) Do you agree with the synopsis of the Report given by Dr. Webb by letter to Mr. and Mrs. Roberts (dictated 28th February 1997/ typed 21st March 1997) (Ref: 090-001-001)?

'Agree' can have many flavours when one person is interpreting another person's statements so that a GP and a non-medical third party (the parents) might be able to comprehend what happened. Drs Steen & Webb have over-interpreted the infection pathogenesis, compared with the original autopsy report Comment, which was more cautions; so in that sense I do not agree with it.

The depiction of developmental abnormalities in the brain – whether actually true or not – would have been of some comfort to the parents.

(x) Was the length of time from necropsy to Report unusually long or appropriate?

The 3 month delay is producing the autopsy report – not atypical for neuro-pathologists then and now –is excessively long but certainly not unusual, and it might be a reason for lack of correlation. By that time the clinicians had probably

forgotten about the case (although they should also have accountability for not chasing it up themselves). Traditionally neuropathologists fix brains whole for a month or more, although it is now acknowledged that such prolonged fixation is not justified and incurs delay. You might enquire how typical this was in 1996 in Belfast. But it could well have contributed to lack of clinico-pathological discussion of the case, since clinical interest would have declined over time.

(y) Please comment on the professionalism and utility of this Report.

It provided the necessary basis for further discussion with informed clinicians and thus a collective review of the critical events. Dr Herron indicates that such reports are not intended to produce and state 'specific diagnoses' (WS-224/4 p.133). I think this is being economical with the truth. Where, to the pathologist, the clinical features and pathological features all point to one diagnostic process, then he/she states them in the report. The problem with this case is that nothing appeared very clear-cut.

(z) Please comment on whether this Report is compliant with guidance and teaching in 1996/1997?

RCPath Guidelines for Post Mortem Reports 1993 [I have a copy in the files, although this document was officially withdrawn years ago]. The autopsy report did follow these in broad outline, ie all the sections are present but some titles are confusing, such as 'Anatomical Summary'; but the report did not follow them in several respects (this list is not inclusive):

- *Timeliness*
- *Lack of commentary that satisfactorily reconciled the major clinical problems*
- *No mention of a clinico-pathological or audit meeting in a complex case*

All this said, few read any of these autopsy guidelines. They are not mandatory. My impression, having written many such more recent guidelines, is that trainees look at them whilst in training, in part for examination preparation, but pathologists do not necessarily read or follow them in real life. Dr Herron says that he was aware of them at the time.

ADDITIONAL MATERIAL, wrt the CSF analysis and Prof Keith Cartwright's evidence.

I find this impossible to analyse coherently – as has been indicated throughout the transcript – since it does not relate well to the actual brain morphology, which either shows no encephalitis or minimal encephalitis; and it does not show meningitis. Therefore I suspect the CSF results are artefactual and should be disregarded, since the tissue pathology has to carry more weight in this scenario that CSF content numbers.

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20th Nov 2012