Mr Myers Cross Examination of Dr Marnerides

Q. I'm going to turn next to [Baby A].
These are technical questions, but I will repeat what I said before: there is no insensitivity or lack of sympathy to the position of those involved in this with the questions that I ask. The same applies with all witnesses in this case as well.
It sounds a little bit objective, but it's not meant to be insensitive when I ask the questions.
Yesterday, Dr Marnerides, you went into some detail at one point about what may be fat globules or bubbles of air in some of the samples you saw.
A. Yes.

Q. But to be clear about it, the pathology does not prove air embolus in this case, does it?
A. That's correct.

Q. Looking at the report you wrote on 21 January 2019, Dr Marnerides, I'm looking at -- it says page 12 of 13. Do your pages have numbers at the top right-hand corner?
A. Yes.

MR MYERS: It's your opinion, paragraph B, in your report dated 21 January 2019.
A. Yes.

Q. And in fact, having reviewed the items you told us yesterday about items in the lungs or in the brain, you conclude that by saying:
"It is therefore my opinion that from the post-mortem examination point of view, the death of baby [Baby A] remains unascertained."
That's what you say, isn't it?
A. Yes, strictly from the post-mortem.

Q. Yes. Again, what I'm keen to do is to go where we can get to on the pathology. Sorry.
(Pause)
Where we can get to on the pathology and then to see the part played by other experts and their opinions. From the post-mortem point of view, it is unascertained. And your opinion, Dr Marnerides, is that purely from the histology and the morphology, we're used to those expressions now, there is no evidence that death was due to unnatural causes at all, just looking at the morphology and the histopathology?
A. Can you read what I exactly wrote?

Q. Yes, of course. If we look at your paragraph B:
"Having reviewed the post-mortem examination findings and the related ancillary post-mortem investigations and histology, I could not identify any convincing positive morphological evidence indicating that the death of baby [Baby A] was due to unnatural causes."
Do you see that?

A. Yes. That's what I said. I'm not sure that what you asked me to comment on was exactly this.

Q. First of all, there is no positive morphological evidence that it was unnatural, is there?
A. Yes.

Q. You agree, don't you?
A. Well, I wrote it.

Q. Yes, you did. And likewise, there was no histopathology that indicated unnatural cause. I'm asking you that as a general question, Dr Marnerides.
A. Did you say natural or unnatural?

Q. Indicating it was an unnatural cause, establishing that.
A. I said, yes, there was no convincing positive morphological evidence.

Q. I was also adding histopathological evidence as well. I'm asking you about that.
A. The term morphological means -- includes both, naked eye and histo.

Q. We have that, that's clear. That's what I wanted to confirm.
So far as pathology takes us, the pathology on its own, that is -- that doesn't take us to air embolus, does it, on its own?
A. On its own, yes.

Q. Which is why you settled on the expression, "The death is unascertained on the pathology"?
A. On its own, yes.

Q. What you go on to do, and you say it in your paragraph C, you then turn to look at what you call: "The constellation of the circumstantial and clinical evidence in this instance as outlined." I'm looking in particular at Dr Evans' statement, and that's your paragraph C. That's right, isn't it? You looked at the other material?
A. Correct.

Q. And therefore, because you come to the point that this could be air embolus, don't you? Ultimately in light of that, you take the view this could be explained by air embolus?
A. Yes, this would be explained by air embolus.

Q. And you get to that point by moving beyond the pathology but in effect factoring in what the clinicians say about the circumstances leading up to and at the time of death; is that right?
A. Yes. May I make a comment on that? So that's what pathology is about, when we're asked to offer an opinion on the cause of death. I will give you an example that I think will explain to the jury how a pathologist will

take into account the investigations and the opinions of clinicians.
We have a dead baby, not one of those that we are discussing here, and there is no known medical history, there is no known assessment by any clinician before the baby is found dead.
I do the post-mortem examination,
I do my ancillary investigations, and I do genetic testing, I take all the results and microbiology, virology, everything comes back negative, and the cause of death at the end is, from the pathology point of view, unascertained.
And we have the family, because of that, that happens very often, the family refer to that, to a review by a clinical geneticist, looking into details for genetic reasons, and they do further testing, not on the samples from the baby but on the samples from the parents and the siblings.
The findings say that it is likely, because they have findings from the family, that the baby that died, died due to cardiac arrhythmia, which cannot be seen on morphology, and this is a known syndrome, let's say DiGeorge syndrome that has no morphological findings at post-mortem examination.
When I receive that information, I will issue a supplementary report as a pathologist, saying: in face of the new evidence, although there is no proof on the baby, the likely cause of this dead baby is DiGeorge syndrome. This is what happens in all cases, basically.

Q. Yes, because where the pathology is neutral, you can then take account of the assessments or additional evidence, for example from the clinicians or the radiology; that's correct, isn't it?
A. Yes.

Q. And of course, at that point, unless the pathology directly contradicts what, for instance, Dr Evans says, you are relying upon the assessment that he provides you with, aren't you?
A. Not Dr Evans only, the other clinicians.

Q. All the clinicians, but Dr Evans features in your reports principally, doesn't he?
A. The initial reports because that was the first clinical assessment they had.

Q. So, for example, as I asked earlier, the suggestion that a baby is doing well up to the time of collapse, if you receive that suggestion, that is something that you'd accept unless you find something on the pathology to challenge that?
A. Yes.

Q. Right. Just whilst we're dealing with [Baby A], although it's not the -- on the issue of air embolus, we heard the agreed facts yesterday, Dr Marnerides, which included this. It was agreed fact 20. I'm going to read it out, it's from the end of that agreed fact where

it says:
"Dr Shukla observed that there is a strong temporal relationship between the long line insertion and patient's apnoeic spell and collapse. Long line positions could not be confirmed at autopsy as it was removed during life."
So working backwards from what we have there, so far as the long line that was inserted at some time just before or around 19.00 hours is concerned, that was not in situ at the time of death? It had been removed, hadn't it?
A. It could have been removed after death.

Q. Well, in fact we know from the clinical records and from the evidence when it was removed. So far as -- all you know is that it wasn't there when [Baby A] went to autopsy?
A. All I know is that Dr Shukla didn't see it.

Q. Dr Shukla commented on the strong temporal relationship between the long line insertion and the patient's apnoeic spell. Is it the case that a long line may induce an arrhythmia if it comes into contact with the heart or the surface of the heart?
A. You're asking me to comment on a comment that somebody else made and on something that has clinical experts to answer.
2. Well, you have, certainly at the point of incorporating it within your evidence, in effect commented, have you not, on the quality of the clinical assessments you've received?
A. So if the clinical evidence is that the insertion of a line could induce arrhythmia and it could induce arrhythmia resulting to death, if there is such evidence, the pathology cannot refute it.

Q. Right. So first of all, in terms of the general mechanism of a long line inducing arrhythmia in general, is that something you're able to comment on or is it not? I'm not being critical, I just want to know, Dr Marnerides.
A. I don't want to comment on general things.

Q. All right. And in this case --
A. (Overspeaking) I serve any purpose commenting on general things.

Q. Well, you've been asked to assist us with the fact that, as a general principle, a diaphragm could be splinted by excessive air, haven't you?
A. Yes, because I make a comment on that in my report. That's why.

Q. There are points where I may have to ask you things outside your reports for your expertise to assist us.
A. If I can, I will.

Q. Right. But when it comes to the question of a long line

and arrhythmia, as a general principle, is that anything you can assist us with or not?
A. The general knowledge I have is that it can induce arrhythmia.

Q. But I make it plain for your benefit, you don't speak that as an expert, you are just conceding that in general knowledge?
A. Yes.

Q. There is one other matter I would like to ask about [Baby A] before we move from [Baby A]. Again, it comes from material we looked at in the agreed facts yesterday. We've seen the finding that [Baby A]'s lungs were severely congested and haemorrhagic. That's a finding from Dr Shukla from the post-mortem.
Can you assist us, and again please say if you can't, as to whether or not what's called pulmonary hypertension can lead to that happening or not?
A. This finding of congestion and haemorrhage in the lungs is so common that it could be a never-ending list of conditions that it could be associated with. In terms of pulmonary hypertension, for a pathologist to confirm the presence of pulmonary hypertension there are features on histology we can see, but it has to have been there for some time.

Q. All right.
A. So that's as far as we can go on that.

Q. So in [Baby A]'s case, because he was only 24 hours old at the time he died, it's not long enough for any chronic feature to establish itself?
A. Yes, that's correct.

MR JUSTICE GOSS: Can I be clear? Are you saying in [Baby A]'s case you can exclude that then or not?
A. No, the clinicians would be in better position to exclude whether there was clinical evidence of pulmonary hypertension. From the pathology point of view, I don't have features to say that, yes, he had pulmonary hypertension. But because he's so young, I wouldn't -- even if he had pulmonary hypertension, I wouldn't expect to able to see it because there's not enough time to develop.

MR JUSTICE GOSS: Because he hadn't lived long enough?
A. Yes.

MR JUSTICE GOSS: I just wanted to be clear where you were. Sorry, Mr Myers. I just wanted to be clear in my mind.

MR MYERS: I'm going to turn to [Baby C]. It's 11.20.