



Neutral Citation Number: [2019] EWHC 2280 (QB)

Case No: HQ17C03605

**IN THE HIGH COURT OF JUSTICE**  
**QUEEN’S BENCH DIVISION**

Date: Tuesday, 30<sup>th</sup> July 2019

**Before His Honour Judge Simpkins**  
**(sitting as a deputy Judge of the Queen’s Bench Division)**

**Between:**

**LINDSAY SHAW**

**Claimant**

**- and -**

**SOUTH TEES HOSPITALS NHS FOUNDATION  
TRUST**

**Defendant**

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Mr. Julian Matthews (instructed by Williamsons) for the **Claimant**  
Ms Jane Mishcon (instructed by DAC Beachcroft) for the **Defendant**

Hearing dates: 16<sup>th</sup>, 17<sup>th</sup> and 18<sup>th</sup> July 2019

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**Approved Judgment**

I direct that pursuant to CPR PD 39A para 6.1 no official shorthand note shall be taken of this Judgment and that copies of this version as handed down may be treated as authentic.

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**Before His Honour Judge Simpkins (sitting as a deputy Judge of the Queen's Bench Division):**

**Introduction**

1. The Claimant is the mother of a daughter, Emily, who was born on 14<sup>th</sup> October 2014. Very sadly Emily was subsequently diagnosed with Aicardi Syndrome, a rare genetic disorder that occurs almost exclusively in females. It is characterised by agenesis of the corpus collosum (“ACC”) where there is a complete or partial absence of the corpus collosum, which is the structure that connects the two hemispheres of the brain.
2. The Claimant had a fetal anomaly scan on 2<sup>nd</sup> June 2014 at 21 + 6 weeks gestation. This was carried out by a consultant in obstetrics and fetal medicine at the Defendant trust, Dr. Vedrana Caric. Dr. Caric reported that the scan showed normal development of the brain structures in all respects.
3. As a result of the Aicardi Syndrome Emily suffers from microcephaly, severe learning difficulties, visual abnormalities and seizures. The claim is brought by her mother for damages to cover the [additional] costs of bringing up Emily which are going to be considerably greater than those of bringing up a healthy child.
4. The quantum of this case is likely to be very substantial, but at this stage the court is concerned with the preliminary issue directed by Master Thornett on 29<sup>th</sup> June 2018 as to whether the Defendant is liable to the Claimant by reason of the matters alleged in the Particulars of Claim and, if so, whether or not any injuries described were so caused and if any injuries were so caused, the extent of the same.
5. Shortly before the trial the issue of causation was conceded by the Defendant, as it is now agreed that if Dr. Caric had either confirmed the absence of the cavum septum pellucidum (“CSP”) during the scan, or had not been able to confirm its presence, she would have referred the case to the Royal Victoria Infirmary in Newcastle, and that this would have led to an MRI scan being carried out and the diagnosis of ACC would probably have been made.
6. The issue at this stage is therefore whether Dr. Caric's confirmation that the scan showed normal brain structure development was negligent because she did not see enough evidence of normal development of the CSP. Mr. Matthews, counsel for the Claimant, submitted that the scan she carried out could not be interpreted as showing sufficiently clear images of the CSP for a sonographer to be reasonably confident of confirming its existence, and that Dr. Caric should have discussed this with the Claimant and recommended a further scan.

**The background**

7. The Claimant was born on 1<sup>st</sup> March 1987. She elected to terminate her first pregnancy in 2008 because of a fetal abnormality which was identified before she gave birth during a 12 week scan This was a suggested deformity of the fetal urethra (“LUTO”). Her second pregnancy gave rise to the birth of a healthy daughter on 17<sup>th</sup> August 2010. When she became pregnant again in 2014 routine ultrasound scans were

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performed at 7 weeks and 13 weeks to provide an estimate of the date for delivery of 7<sup>th</sup> October 2014.

8. Because of the background of the earlier abnormality, the Claimant was referred for a scan at 16 weeks. This was in fact carried out by Dr. Karen Lincoln, a consultant in fetal medicine, at 17 + 6 weeks. This was deliberately delayed from 16 weeks because the Claimant had a high BMI (36) and was classified as obese. This was to improve the clarity of the scan, which it is common ground is adversely affected by a raised BMI. The fetus will have grown and this is likely to improve clarity, although it was also agreed that the BMI was unlikely to reduce. The letter to the Claimant's GP from Dr. Lincoln's registrar at the time of the dating scan makes clear that there will be 2 more scans at 16 and 20 weeks due to the previous obstetric history.
9. In the scan at 17 + 6 weeks Dr. Lincoln recorded that she had visualised the head, brain, face, spine, neck and skin and other structures and that they appeared normal. She did not examine the four-chamber view or the great vessels. It is common ground that at this stage it is unlikely that the CSP will be sufficiently developed to be visualised and Dr. Lincoln did not suggest that she had seen it, either in the record of the scan or in her witness statement. She was not required to attend for cross-examination.
10. In 2010 the NHS introduced a Fetal Anomaly Screening Programme ("FASP") in order to produce a national screening programme and improve standards. Fetal anomaly screening was not new but lacked coordination and uniformity. The aims and objective of the FASP was stated to be to ensure access to a uniform screening programme which conforms to an agreed level of quality.
11. The relevant standard in this case is Standard 6. While some of the guidelines are clearly aspirational, driving improvement, both experts agreed that this was the standard to be operated when carrying out scans at least in relation to the examination of the cerebral spinal element and a requirement for the sonographer in carrying out these scans.
12. Standard 6 recites the rationale of the 18 to 20 week scan, which is to provide consistency in the ultrasound procedure in terms of specifying techniques to be used to obtain fetal measurements and defining what anatomical structures should be assessed by professionals during the examination.
13. S6.1 provides that the fetal anatomy should be checked against the ultrasound scan base menu. 6 anatomical sections are required to be identified at examination and hard copy images obtained of each, which should be stored. Two of these sections relate to the cerebral structures and head. In fact, Dr. Caric took 6 images of the head, and 35 images in all.
14. S6.3 provides as follows:

*"All women should be offered a single further scan at 23 weeks of pregnancy to complete the screening examination if the image quality of the first examination is compromised by one of the following:*

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- *Increased maternal body mass index (BMI)*
- *Uterine fibroids*
- *Abnormal scarring*
- *Sub-optimal fetal position”*

15. S6.4 provides:

*“Where an adequate assessment of the fetal anatomy remains compromised after the second scan, all women should be told that the screening is incomplete and this should be recorded in all formats”.*

16. S6.5 provides:

*“Where the first examination is sub-optimal and the sonographer is suspicious of a possible fetal abnormality, a second opinion should be sought as soon as possible. This should be recorded in all mentioned formats.”*

17. Appendix 1 sets out the Base Menu for the 18 to 20 week scan. The introduction states:

*“It is important that both women and health professionals appreciate that the scan is a screening test and because of that it has limitations. Inevitably some conditions will be missed or misidentified. Women should receive comprehensible information before the scan and if a woman chooses to decline the screening test then this must be respected”.*

18. The Base Menu sets out in relation to the head and neck element of the scan that the brain should be examined in relation to the CSP, Ventricular atrium and Cerebellum. The notes state that the head circumference is to be measured, the atrium of the lateral ventricle and the suboccipito-bregmatic demonstrating measurement of the transcerebellum diameter. Appendix 2 reproduces a scan showing the head circumference and various other structures seen in a scan, which identify the CSP, Mid-line echo and posterior horn of the ventricle and where the atrial measurement is taken. This is clearly an ideal example of the scan.

19. Dr. Lincoln’s scan did in fact go much further than simply looking to see if there was evidence of LUTO. She recorded the Biparietal diameter, the Occipitofrontal diameter, the Head circumference, the Posterior Ventricle, the Transcerebellar diameter, the Cisterna Magna, the Nuchal Fold, the abdominal circumference and the femur length. She did not record that she had seen the CSP but noted that all the brain measurements and signs were normal. These were all the matters that were required to be recorded in the standard letter to the mother as the letters from both Dr. Lincoln and Dr. Caric contain similar lists. She then went on to say: *“The following were visualised and appear normal: head, brain, spine, neck and skin, chest, abdominal wall, gastro-intestinal tract, kidneys and bladder, extremities, skeleton”*

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20. The starting point is **Bolitho v Hackney Health Authority** [1996] 4 All E R 771 where the modern statement of the principles is set out in the judgment of Lord Browne-Wilkinson:

*“My Lords, I agree with these submissions to the extent that, in my view, the court is not bound to hold that a defendant doctor escapes liability for negligent treatment or diagnosis just because he leads evidence from a number of medical experts who are genuinely of the opinion that the defendant’s treatment or diagnosis accorded with sound medical practice. In the Bolam case itself, McNair J stated [1957] 1 W.L.R. 583 at 587, that the defendant had to have acted in accordance with the practice accepted as proper by a “responsible body of medical men.” Later, at p. 588 he referred to “a standard of practice recognised as proper by a competent reasonable body of opinion.” Again, in the passage which I have cited from Maynard’s case, Lord Scarman refers to a “respectable” body of professional opinion. The use of these adjectives – responsible, reasonable and respectable – all show that the court has to be satisfied that the exponents of the body of opinion relied upon can demonstrate that such opinion has a logical basis. In particular cases involving, as they so often do, the weighing of risks against benefits, the judge before accepting a body of opinion as being responsible, reasonable or respectable, will need to be satisfied that, in forming their views, the experts have directed their minds to the question of comparative risks and benefits and have reached a defensible conclusion on the matter.”*

21. Further guidance on how these principles should be applied were given by Green J in **“C” v North Cumbria University Hospitals NHS Trust** [2014] EWHC 61QB where he explained the **Bolitho** principles:

*“In the present case I have received evidence from 4 experts, 2 on each side. It seems to me that in the light of the case law the following principles and considerations apply to the assessment of such expert evidence in a case such as the present:*

*i) Where a body of appropriate expert opinion considers that an act or omission alleged to be negligent is reasonable a Court will attach substantial weight to that opinion.*

*ii) This is so even if there is another body of appropriate opinion which condemns the same act or omission as negligent.*

*iii) The Court in making this assessment must not however delegate the task of deciding the issue to the expert. It is ultimately an issue that the Court, taking account of that expert evidence, must decide for itself.*

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iv) *In making an assessment of whether to accept an expert's opinion the Court should take account of a variety of factors including (but not limited to): whether the evidence is tendered in good faith; whether the expert is "responsible", "competent" and/or "respectable"; and whether the opinion is reasonable and logical.*

v) *Good faith: A sine qua non for treating an expert's opinion as valid and relevant is that it is tendered in good faith. However, the mere fact that one or more expert opinions are tendered in good faith is not per se sufficient for a conclusion that a defendant's conduct, endorsed by expert opinion tendered in good faith, necessarily accords with sound medical practice.*

vi) *Responsible/competent/respectable: In Bolitho Lord Brown Wilkinson cited each of these three adjectives as relevant to the exercise of assessment of an expert opinion. The judge appeared to treat these as relevant to whether the opinion was "logical". It seems to me that whilst they may be relevant to whether an opinion is "logical" they may not be determinative of that issue. A highly responsible and competent expert of the highest degree of respectability may, nonetheless, proffer a conclusion that a Court does not accept, ultimately, as "logical". Nonetheless these are material considerations. In the course of my discussions with Counsel, both of whom are hugely experienced in matters of clinical negligence, I queried the sorts of matters that might fall within these headings. The following are illustrations which arose from that discussion. "Competence" is a matter which flows from qualifications and experience. In the context of allegations of clinical negligence in an NHS setting particular weight may be accorded to an expert with a lengthy experience in the NHS. .... but I do accept that lengthy experience within the NHS is a matter of significance. .... "Respectability" is also a matter to be taken into account. Its absence might be a rare occurrence, but many judges and litigators have come across so called experts who can "talk the talk" but who veer towards the eccentric or unacceptable end of the spectrum. ... A "responsible" expert is one who does not adopt an extreme position, who will make the necessary concessions and who adheres to the spirit as well as the words of his professional declaration (see CPR35 and the PD and Protocol).*

vii) *Logic/reasonableness: By far and away the most important consideration is the logic of the expert opinion tendered. A Judge should not simply accept an expert opinion; it should be tested both against the other evidence tendered during the course of a trial, and, against its internal consistency. For example, a judge will consider whether the expert opinion*

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*accords with the inferences properly to be drawn from the Clinical Notes or the CTG. A judge will ask whether the expert has addressed all the relevant considerations which applied at the time of the alleged negligent act or omission. .... First, a matter of some importance is whether the expert opinion reflects the evidence that has emerged in the course of the trial. .... Secondly, a further issue arising in the present case emerges from the trenchant criticisms that Mr Spencer QC, for the Claimant, made of the Defendant's two experts due to the incomplete and sometimes inaccurate nature of the summaries of the relevant facts (and in particular the Clinical Notes) that were contained within their reports. It seems to me that it is good practice for experts to ensure that when they are reciting critical matters, such as Clinical Notes, they do so with precision. These notes represent short documents (in the present case two sides only) but form the basis for an important part of the analytical task of the Court. If an expert is giving a précis then that should be expressly stated in the body of the opinion and, ideally, the Notes should be annexed and accurately cross-referred to by the expert. If, however, the account from within the body of the expert opinion is intended to constitute the bedrock for the subsequent opinion then accuracy is a virtue. Having said this, the task of the Court is to see beyond stylistic blemishes and to concentrate upon the pith and substance of the expert opinion and to then evaluate its content against the evidence as a whole and thereby to assess its logic. If on analysis of the report as a whole the opinion conveyed is from a person of real experience, exhibiting competence and respectability, and it is consistent with the surrounding evidence, and of course internally logical, this is an opinion which a judge should attach considerable weight to."*

22. The test in this case is whether Dr. Caric exercised reasonable care and skill in carrying out the scan and in making her assessment that she could have reasonable confidence in concluding that she could see the CSP.

**Dr. Caric's evidence**

23. I found Dr. Caric an impressive witness. Although she was in the witness box for a relatively long time and under pressure because it was her judgment that was being criticised, she remained calm and clear in her evidence. Mr. Matthews submitted that her evidence should be viewed with caution. He said that in June 2014 she had only recently been appointed a consultant and her evidence now is based on 5 years further experience. Obviously, some care needs to be taken in assessing the evidence of a clinician who is being criticised for a decision made some years ago, because the decision will have been closely scrutinised since and the clinician will be keen to defend it. She is a highly trained and experienced clinician in fetal medicine and in ultrasound techniques. She had 2 years training in advanced fetal medicine. She was a specialist at St. Georges Hospital for 6 months before her appointment to the North

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East, carrying out scanning on 3 days a week looking for anomalies. She is trained more than the average consultant in this area.

24. Next, Mr Matthews submitted that she accepted a sub-standard scan because she was anxious not to upset the mother and because of a lack of resources.
25. Dr. Caric was challenged in cross-examination about 2 particular passages in her witness statement. In paragraph 44 she said: *“In addition to the fetal measurements outlined above, the FASP Guidelines “recommend” (rather than “mandate”) that the [CSP] is visualised and confirmed as present.”*. Mr. Howe said that this was wrong and that it was mandated. Her reply was that the document stated that these were guidelines presenting an ideal i.e. that it was not mandated to record that CSP had been visualised. Whether or not she misunderstood the mandatory nature of the guidelines, she clearly applied them and looked for the CSP – particularly during the period of the scan around image 6. I am satisfied that she would not have passed the brain as normal if she had not decided that she could confidently say that she had seen it.
26. At paragraphs 28 and 29 of her witness statement she said: *“It is not unusual to have to look at and interpret “sub-optimal” images. In fact it is quite common. It is a matter of clinical interpretation. If I had concerns that I had not been able to reasonably and appropriately visualise or measure something – I would have considered a repeat scan” ... “If we were to bring back expectant mothers with increased BMI and “sub-optimal” scans – this would probably affect about 1 in 3 patients”*.
27. Mr. Matthews submitted that this showed that she was prepared to pass this scan as normal whilst her mind set was that it was not mandatory to identify the CSP and without being sufficiently satisfied that she could see it as it would be impracticable to have another scan. In other words, because of the higher number of high BMI mothers in her region, a lower standard was being operated.
28. I reject this submission. The implication of finding that it was right is that Dr. Caric is not telling the truth when she says that she decided that the clarity of the image -was good enough and that she had seen all that she needed to see – including the CSP. If Dr. Caric had presented as a slapdash clinician this conclusion might be appropriate, but having seen her give evidence and heard what she has said, I am satisfied that she is a particularly diligent and careful practitioner who took particular care in this case. She took more images than was required and was not shaken in cross-examination from her assertion that she had seen the CSP. She did not make the decision by looking at one image, but on her assessment of all the images she saw in real time while doing the scan. She also readily accepted that earlier saved images did not show the CSP sufficiently – although they supported the build-up of confidence leading towards her final decision.
29. Nor do I agree with Mr. Matthews’ submission that she has said that she saw sufficient evidence of the CSP because to do otherwise would mean a massive increase in the number of 23 week scans. Mr. Howe said that it was very common for the sonographer to have less than optimal clarity due to obesity and that a competent sonographer can still identify the structures without another scan. In Southampton he usually saw 1 or 2 scans that were less than optimal because of BMI. He said that the



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standard was the same – you still had to identify all the relevant structures with reasonable confidence – but you tended to apply more effort with the difficult cases. Dr. Caric had also said this earlier when she was cross-examined. This, in my judgment, is what Dr. Caric has done in this case. I find that Dr. Caric is an honest witness and that she genuinely believed that she had seen sufficient evidence of the CSP without the need to carry out another scan.

30. In her witness statement Dr. Caric states that there were some limitations with the scan, despite it being performed slightly later than 20 weeks. She said that she had to make a clinical judgment whether the image clarity was “*so bad*” that it warranted any further repeat scans or investigations. She said that it was not unusual to have to look at sub-optimal scan images and that if she had had any concerns that she had not been able to reasonably and appropriately visualise or measure something she would have considered a repeat scan. She concluded by saying that she did not have any such concerns and was able to visualise everything that she needed to.
31. Of the 6 images she took of the head, she said that 3 of them showed the CSP and she marked these on the images exhibited to her witness statement. Of course, as she points out, it is common ground that she could not have seen the actual CSP because we now know that it was not there. What she says she saw – supported by her expert Mr. Howe, is the CSP “*mimic*” or echoes that mimic the CSP and which can be mistakenly identified by the sonographer.

The Experts

32. Each side led evidence from one expert in fetal medicine. The Claimant relied on Mr. Adam Gornall, a consultant in obstetrics and gynaecology with specific expertise in Feto Maternal Medicine. He has been a consultant since 2003. He has published many papers relating to his specialism and including fetal anomaly. The Defendants relied on Mr. David Howe, also a consultant in Feto Maternal Medicine, who has been a consultant since 1996. Each of them is a highly experienced, specialist in this area with a wide knowledge of the theory and practice of fetal scanning. It is to people such as these that other consultants will refer cases where they need a further opinion.
33. In final submissions, both counsel made criticisms of the other side’s expert and the way in which they gave evidence. For example, Ms. Mishcon criticised Mr. Gornall for altering his earlier opinion, as reflected in the comments pleaded in the Particulars of Claim and the Reply about the 6 images taken by Dr. Caric, that on none of them could any structure that might mimic the CSP be seen. In the Joint Statement he agreed that there were features that could be interpreted as mimicking the CSP in 2 of them. The purpose of the Joint Statement is to narrow differences and I would be very reluctant to criticise an expert for making a concession to achieve this. Mr. Matthews said words to the effect that Mr. Howe was a polished performer in the witness box. Neither of these criticisms is fair. One should not judge an expert simply because he has altered his position in the joint statement, or another expert because he is more fluent than the other in the witness box. The way to judge expert evidence is to apply the guidelines set out by Green J in “C” and in particular to assess its logical consistency and reasonableness internally and against the other evidence. If there are blemishes, then unless they raise serious questions about the expert’s competency or objectivity, they are only of much relevance if they are fundamental to the logic and reasoning of that expert’s view.

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34. Mr. Howe was also criticised for stating that the structure which Dr. Caric identified as the CSP was probably a cystic structure. He had not raised this before nor had Mr. Gornall been cross-examined about this. I am not persuaded that this criticism is a valid one. The joint meeting was heavily structured by the solicitors and the experts were asked to answer specific questions which did not include a question as to what the structure might in fact be. The focus of the experts was whether the scan showed features which might mimic the CSP and not to identify what the mimicking features might otherwise be.
35. I am satisfied that each expert tendered his evidence in good faith and they are both responsible, competent and respectable experts in their field. While Mr. Gornall found fault in the positioning of the callipers, which he has now conceded was not justified, this is not directly relevant to the substantive issue and, in my judgment, does not show that he has approached this case partially. He formed a view that the clarity of the images was not sufficient to be able to form a confident opinion that one could see the CSP and has defended that position. This is because this is his genuine belief. I do, however, think that there is an element of hindsight here. We know that in fact there was no CSP, that an MRI scan would have had a 95% chance of picking up its absence at 23 weeks and that a referral would therefore have better informed the obstetricians and mother on decisions about the pregnancy. I don't think Mr. Gornall has been able to put this out of his mind as well as Mr. Howe. The issue in this case needs to be answered from the perspective of the scanning consultant on 2<sup>nd</sup> June 2014 who was looking for anomalies without any clues that the CSP might not exist.
36. Mr. Howe was an impressive expert witness, and although I didn't ask either of them whether they had given evidence before, it is likely that both had. It may have been a factor that Mr. Howe is a more confident witness, but Mr. Gornall held his own in the witness box. The reason that Mr. Howe was impressive to me was because his answers to Mr. Matthews' questions were persuasive, logically sound and clear. He had no difficulty conceding points against the Defendant where they should be conceded. Mr. Gornall, on the other hand, had not been willing to concede that there was any evidence of a CSP in any of the images until the Joint Statement. He was also somewhat unconvincing in his correction of an apparent concession in the Joint Statement. At paragraphs 2.4.4 and 2.5.4 he was commenting on images 4 and 5 respectively saying in relation to each image: "*Based on the reflections at or around the position of the normal CSP the fetal maternal consultant may have concluded that the CSP was present although the midline is not clearly seen as would be expected anterior and posterior to the CSP*". When this was put to him in cross-examination, he said that he was trying to say that he assumed that Dr. Caric considered that it was the CSP and not that it might be a correct conclusion for a consultant to draw. This is impossible to accept against the very clear question that this section of the Joint Statement was answering: "*without the benefit of hindsight, could the fetal maternal consultant have reasonably concluded that a normal brain anatomy had been visualised*". This was a very clear question to which Mr. Gornall gave a very clear answer. His correction undermines his opinion.
37. I was referred to a number of papers on the difficulties and importance of detecting the absence of the CSP – 2 in particular: *Agensis of the fetal corpus collosum: signs change with advancing gestational age* by D. Palidini (2013) and *Cavum Septi Pellucidi Why is it important?* By Thomas C Winter (2010).

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38. In Palidini, the headnote conclusion reads:

*“Conclusions: In a significant proportion of cases, most of the indirect signs of ACC are either absent or barely visible at the time of midtrimester screening ultrasound examination. Therefore ACC may escape diagnosis at midtrimester screening ultrasound. In particular, a third of examinations in fetuses with pACC may not show any abnormality in the transventricular screening view < 24 weeks. The medicolegal implications of such findings are important and should be considered.*

*Discussion*

*Direct ultrasound diagnosis of ACC is made on the midsagittal view of the fetal head. However, suspicion of such malformation is usually raised at the midtrimester anomaly scan on the basis of an abnormal transventricular view, due to colpocephaly, absent cavum septi pellucidi and/or ventricular dilation. These sonographic signs have always been considered clear clues for diagnosis of ACC in the fetus and, until now, it was believed but not fully demonstrated that these signs become more evident with advancing gestational age. The present study shows that most of these indirect signs are either absent or barely visible at the time of the midtrimester screening ultrasound in a significant proportion of cases. In particular, before 24 weeks, ventriculomegaly (atria width > 9.9mm) was present in 26.5% of cases and colpocephaly in 20.6% of cases. In agreement with other series, the cavum septi pellucidi was almost normal in 15/23 (65.2% fetuses). In addition, a midline cystic structure which may cause a false impression of a cavum septi pellucidi was either present (pACC cases) or its absence could be missed (cACC cases)”.*

39. The Winter paper starts by emphasising the importance of nonvisualisation of the CSP because its absence is associated with a wide variety of outcomes, ranging from devastating to incidental. It goes on to say that, under normal conditions, the CSP should be easily seen “*beyond approximately 18 and 20 weeks*”. It then goes on to discuss attention to proper technique being crucial in avoiding mistakenly calling the CSP present when it was in fact absent and the various signs that help clarify a true viewing of the CSP from a false viewing, caused by mimicking echoes in the ultrasound.
40. A CSP should appear in an ultrasound scan as a fluid filled box between the paired septa, which separate the frontal horns of the lateral ventricles. This should appear as 2 short white lines on either side of the midline and the midline should not be visible between them – appearing as a break in the midline. Various scan images were shown in the paper and it also mentioned the loss of detail in scans due to reverberation. A very clear image of a scan, showing a normal CSP appears at Appendix 2 in FASP.

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41. It was common ground between the experts that an ultrasound scan is not capable of leading to a diagnosis, which requires further investigation and an MRI scan. They also agreed with the contents of the papers, the importance of identifying the absence of the CSP and that the standard to be expected of a consultant specialist carrying out this type of scan is higher than of a more junior doctor or technician, who would be expected to refer to a specialist if in doubt.
42. They also agreed the following:
- Image quality is affected by high maternal body mass, fetal position, gestational age, the quality of the equipment used and the skill and training of the staff performing the scans. The position of the placenta also affects the image.
  - That it is harder to identify abnormalities where the normal feature is simply not visible, since this may be due to poor views rather than genuine absence.
  - Identification of the CSP should be seen at the 21 week scan as one of the landmarks on the plane used to measure the head circumference and ventricular atrium diameter.
  - If all the features required to be identified at the first scan (in this case Dr. Caric's scan at 21+6 weeks is to be treated as the first scan) then a second scan should be offered at 23 weeks.
  - Of the 3 signs of ACC referred to in the Winter paper, there was no colpocephaly and no ventricular atrium abnormality.
  - Both experts agreed that the sonographer was in a better position to judge the structures of the brain than someone looking at the images frozen in time, because in real time the sonographer is not just seeing a snapshot, even if the images are intended to represent the best picture obtainable.
43. There was a disagreement in answer to the question: "*if all of the features required to be identified at the first scan are seen, or reasonably believed to have been seen, what action should be taken?*". Mr. Howe said that in these circumstances no further scan needs to be offered. Mr. Gornall's answer was subtly different. He said that if all the features had been identified no further scan was necessary but that if they were reasonably believed to have been seen the practitioner needs to make a judgment whether they are confident that the feature was present and normal. If they have a doubt "*or they believe that they have seen a feature but the imaging has been impeded by a problem such as high BMI then they should arrange a further scan as the image may be clearer with increased gestation.*" This answer demonstrates his reticence in conceding anything that might weaken his case that a further scan should have been advised. Mr. Howe's opinion was that if the sonographer was not confident that she had seen the required features then a further scan should be advised "*if the image was so fuzzy that you can't be confident then there should be a new scan*". Mr. Gornall emphasised a number of times during his evidence how subjective this was.
44. I prefer Mr. Howe's approach on this. In my judgment, the scan must be carried out to a competent standard and with care. If the sonographer does this, and decides that the scan has sufficient clarity to see all the relevant structures, it would not be negligent to

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sign off the screening as complete. Only if her judgment that all the features were present is one which no reasonably competent practitioner would reach is negligence proved. Mr. Matthews put it rather well: Does the scan enable the sonographer to tick the box stating that she has seen all the relevant structures or should she have put a question mark.

45. The experts were not agreed on their respective interpretations of the 6 images of the fetal head taken by Dr. Caric. Although Mr. Gornall had originally said that none of the images showed the CSP, he agreed in the Joint Statement that images 4 and 5 showed an image on the midline where the CSP should be from which a fetal maternal consultant may have concluded that the CSP was present. Mr. Howe said that a consultant could reasonably have concluded that she had seen normal anatomy (ie a normal CSP) from reflections mimicking a normal CSP. Mr Gornall said that although the images were not clear, there appeared to be a box like structure in the midline where the CSP should be. Mr. Howe's view was that neither of these images was clear enough to enable a definite conclusion to be drawn that the CSP had been seen.
46. The image that tipped the balance for Mr. Howe was image 6. This was a much clearer image of the purported CSP, although both of the experts agreed that much of the image was poor. Mr Howe explained that the better image of the CSP was probably because the probe had run across some sutures, reducing the interference from the skull towards that area. There was considerable interference from the placenta, which explained why there was no dark area between the borders of the purported CSP – representing fluid. His explanation was logical and convincing because one could follow the line of the interference outside the skull.
47. Mr. Gornall agreed that it showed a boxlike structure and a midline, but that the midline did not run parallel-to nor in a line through the structure, showing that it could not be the CSP. There was a structure but it wasn't in right place to be the CSP. As I said above, this was a change from his original view that there was nothing that could be confused with a CSP. He had drawn a red line on the image which he said was the line of the midline. He accepted in court that the line had been angled too far down at the right hand end and therefore was not shown to be parallel. It is clear that he has placed the line in the wrong angle. Mr. Howe demonstrated the echoes showing the midline (which was not at all clear) and the echoes mimicking the CSP on a screen in court. This enabled me to see a much larger image and to understand his logic.
48. Mr. Gornall said that, even once corrected, the midline did not go through the box structure but was below it. He was asked to explain what the fluid filled structure was, if it wasn't the CSP. He put forward a number of possibilities. He agreed that it was not the fornix. His first explanation was that the echoes were from "*artefacts*" where the ultrasound "*bounces around to create images*". He agreed that the sonographer in real time would be much better placed to see if they were artefacts, which in any case would be very unlikely to show in the same place over the period of the scan. He also said that the upper line was probably the upper line of the lateral ventricle and the lower line artefacts. In cross-examination of Mr. Howe, Mr. Matthews, on Mr. Gornall's advice, suggested that the structure was the anterior horn of the lateral ventricle.

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49. Mr. Howe's evidence was much more persuasive on these points. He said that artefacts would not appear as such bright reflections and that their position would change as the scanner angle changed. He gave a totally convincing demonstration on the projected scan to show that the lower line was nowhere near the lateral ventricle. On this issue, Mr. Gornall somewhat tied himself in knots trying to find fault with Mr. Howe's view that this was a structure that could reasonably be interpreted as the CSP. His best point was that the midline wasn't in a line directly through the middle of the structure. If the CSP is a structure separating the 2 halves of the brain, then one would expect the midline to go through its centre line. Mr. Howe's explanation for the fact that in image 6 it doesn't do this clearly was that the head is not level, but tilted, and that there is reverberation of the ultrasound. These scans do not provide perfect images, but serve a useful purpose in identifying potential anomalies. Therefore, the images do not show the whole of any structure. The midline is not completely shown and therefore it is not surprising that the lines are not exactly as shown in the images selected in Appendix 2 of FASP.
50. Although there was focus on image 6, Mr. Howe's opinion was based on the fact that in 2 other images (images 4 and 5) there was a structure where one would expect the CSP to be and that it was on the midline. If the structure in image 6 wasn't on the midline then it was very close. He could not think of anything else that it could be if it wasn't the CSP – save for a cystic structure such as is mentioned in the Palidini paper. He refuted Mr. Gornall's suggestion that the midline would have to be shown in the middle of the CSP whatever way the head was tilted, again with some logic, stating that while the midline didn't move the structure round it did in relation to it as the scan moved round it. He was also convincing about the tilting of the head.
51. Mr. Gornall accepted that if Mr. Howe was correct about his position of the midline in image 6, then the echoes would be consistent with a CSP in the correct position and that he would have been satisfied.

**Conclusion**

52. As Mr. Howe said, even experts in specialist centres miss agenesis of the corpus callosum and even when they are scanning with the benefit of clues that make them look extra hard. This is not an easy task and it is a matter of judgment and subjectivity. I am satisfied that Dr. Caric carried out a very careful scan and genuinely formed the view that she could confidently say that she had seen evidence from which she could decide that the CSP was not missing.
53. Although Mr. Gornall disagrees with this decision, and says that he would not have reached it himself, Mr. Howe's view was reasonable, logical, had internal consistency and cannot be dismissed as not being based on a reasonable body of opinion. In fact, it hung together more persuasively than Mr. Gornall's. That is not to say that Mr. Gornall would have been wrong to insist on a further scan if he had seen the images at the time. A range of opinion in this area is to be expected, and I am satisfied that a responsible body of opinion would have come to the same conclusion as Dr Caric did, that she had seen the CSP.
54. It was suggested that Dr. Caric's hands were tied by the lack of resources, and that she was programmed to resist a further scan for this reason in an area of high BMI mothers. I reject that suggestion because Dr. Caric approached this scan with great

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care and made a bona fide decision. As Mr. Howe said, this type of case means that the consultant has to work harder to see the structures and carry out the scan properly, but if Dr. Caric had not been satisfied that she had seen evidence of all the structures she would have advised another scan or referred the Claimant to the specialist centre.

55. I therefore conclude that the Claimant has not succeeded in proving that the Defendant is liable in negligence. This is a sad case and while the position of Emily is a very difficult one, it is necessary to establish that there has been negligence in order to recover damages, and that has not been done.
56. I therefore dismiss the claim.