Case No: HQ16C04310

IN THE HIGH COURT OF JUSTICE
QUEEN'S BENCH DIVISION

Neutral Citation Number: [2018] EWHC 3461 (QB)

Royal Courts of Justice
Strand, London, WC2A 2LL

Date: 14/12/2018

Before :

MR JUSTICE MARTIN SPENCER

- -

Between :

JAH **(A protected party, proceedings by her litigation friend DXT)**	**Claimant**
- and -	
Dr Matthew Burne	**First Defendant**
Dr Hilary Devonshire	**Second Defendant**
Dr Louise Jackson	**Third Defendant**
Yeovil District Hospital NHS Foundation Trust	**Fourth Defendant**

Gordon Bebb QC and Mr Benjamin Bradley
(instructed by **Wolferstans**) for the **Claimant**
Mr Nicholas Peacock (instructed by **Kennedys Law LLP**) for the **First Defendant**
Mr Matthew Jackson (instructed by **Gordons Partnership LLP**) for the **Second Defendant**
Nicholas Peacock (instructed by **Kennedys Law LLP**) for the **Third Defendant**
John de Bono QC (instructed by **Bevan Brittan LLP**) for the **Fourth Defendant**

Hearing dates: 19, 20,21,22, and 23 November 2018

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APPROVED JUDGMENT

MR JUSTICE MARTIN SPENCER

Introduction

1. By this action, the Claimant seeks damages for injuries sustained as a result of alleged clinical negligence by the Defendants in May 2012. In July 2012, the blood supply to the Claimant's left arm became compromised by a thrombo-embolus which led to a below-elbow amputation on 19 July 2012, and then an above-elbow amputation on 24 July 2012. Unfortunately, there was also tissue damage to the left leg as a result of ischaemia, also caused by thrombo-emboli and a below-knee amputation was performed on 4 August 2012, progressing to an above-knee amputation on 23 August 2012.

2. Damages have been agreed in the sum of £600,000 in the event that the amputation of both limbs should have been avoided, or £150,000 in the event that I find that the amputation of the arm alone should have been avoided, and the trial proceeded before me on the remaining issues of breach of duty (there having been limited admissions of breach of duty) and the issue of causation.

The parties

3. The Claimant is now aged almost 57. She was born prematurely and suffered from developmental delay and learning difficulties. She has a son who unfortunately has similar problems. According to a psychological report from Mr J F Stevenson dated 14 August 2015, the Claimant has a very low IQ putting her in the "defective" range and she is effectively unable to read or write.

4. The First Defendant is a General Practitioner who, on 8 May 2012, was working as a locum at Ryalls Park Surgery in Yeovil where the Claimant was registered as a patient. He had occasion to see the Claimant on that day when she presented with pain in her calves. On day 2 of the trial, he made an admission of breach of duty in that he should have checked the Claimant's pedal pulses but did not.

5. The Second Defendant is now retired but was, in May, a partner at the Ryalls Park Medical Centre and she practised as a GP for 35 years. She knew the Claimant well and there are many occasions when she saw and treated the Claimant. In relation to the matters with which this action is concerned, she saw the Claimant on 15 May 2012. She too has admitted breach of duty in failing to check the Claimant's pedal pulses.

6. The Third Defendant, also a GP at the practice, saw the Claimant on 11 June 2012. She has admitted breach of duty in failing to refer the Claimant for an urgent opinion from a vascular surgeon following that appointment. As this was a full admission of breach of duty, there was no need for her to give evidence and her case has been run on the issue of causation alone.

7. The Fourth Defendant is the NHS Trust responsible for the staff and treatment at Yeovil District Hospital. Allegations against the Hospital arise from attendances by the Claimant on 6 May 2012, 9 May 2012 and 12 May 2012. Admissions of breach of duty have been made by the Fourth Defendant that the discharge summaries arising from the attendances on 9 and 12 May should have drawn to the GP's attention "the history of

intermittent claudication" and that, on 12 May, the nurse practitioner who examined the Claimant should have checked her pedal pulses.

The Issues

8. Given the admissions of breach of duty, I identified with Counsel the issues which fell for determination by the court. It was agreed that these are as follows:

"Factual Issues

i) In relation to either leg, whether pedal pulses would probably have been present on 6 May, 8 May, 9 May, 12 May or 15 May. If so, whether they would probably have been normal or weak and would have been detected if examined for.

ii) Whether the Claimant had intermittent claudication as at 6 May, 8 May, 9 May, 12 May or 15 May.

iii) Whether the Claimant was suffering lower limb pain at rest as at 6 May, 8 May, 9 May, 12 May or 15 May.

Breach of Duty Issues

6 May 2012

iv) Whether the Claimant should have been triaged as category 2.

v) Whether the Claimant should have been referred for an urgent opinion from a vascular surgeon.

vi) Whether the Claimant was adequately counselled/advised when she took her own discharge.

vii) Whether an adequate discharge summary was sent by the hospital to the GP.

8 May 2012 (Breach of Duty admitted in failing to check pedal pulses)

viii) Whether an adequate history was obtained by Dr Burne.

ix) Whether Dr Burne should have considered a vascular problem.

x) Whether Dr Burne should have referred the Claimant for a vascular opinion.

9 May 2012 (Breach of Duty admitted in failing, in the discharge letter, to draw GP's attention to the history of intermittent claudication)

xi) Whether an adequate history was obtained by Dr Halcro (neé Rennie).

xii) Whether Dr Halcro should have suspected a vascular problem.

xiii) Whether Dr Halcro should have referred the Claimant for a vascular opinion.

12 May 2012 (Breach of Duty admitted in failing to examine pedal pulses and failing, in the discharge letter, to draw GP's attention to history of intermittent claudication)

xiv) Whether an adequate history was obtained by Nurse Parslow.

xv) Whether Nurse Parslow should have suspected a vascular problem.

xvi) Whether Nurse Parslow should have referred the Claimant for a vascular opinion.

15 May 2012 (Breach of Duty admitted in failing to check pedal pulses)

xvii) Whether an adequate history was obtained by Dr Devonshire.

xviii) Whether Dr Devonshire should have suspected a vascular problem.

xix) Whether Dr Devonshire should have referred the Claimant for a vascular opinion.

Causation Issues

xx) If there should have been earlier vascular referral, by when the Claimant would have been seen by a vascular surgeon after referral on 6 May or 8 May, or 9 May, or 12 May or 15 May

xxi) Whether, upon vascular referral, a thrombo-embolic source would have been recognised or suspected and anticoagulation treatment instigated, or whether atherosclerotic peripheral arterial disease would have been diagnosed and antiplatelet therapy instigated.

xxii) If anticoagulation would have been given initially, whether this would have continued or the treatment would have been switched to antiplatelet therapy.

xxiii) Whether, in the event that the Claimant would have received full anticoagulation pursuant to any of the above alternatives, whether that would have been in time to avoid amputation of:

a) Her leg; and/or

b) Her arm."

Evidential Hierarchy

9. The most reliable source for the history of the Claimant's treatment is what is contained in the medical records, written contemporaneously (although it must be remembered that errors can always be made, even in records made contemporaneously). Usually, the next best source will be the Claimant's own recollection: often healthcare professionals will have no specific memory of a particular consultation and can only reconstruct what occurred by reference to the notes made and their usual practice. Unfortunately, in this case, the Claimant's own recollection is, to all intents and purposes, non-existent. Although she provided a witness statement and attested to its truth, it soon became apparent when she gave evidence that this was somewhat fictional and that she had no recollection of her attendances at the hospital or seeing the individual General Practitioners. Even prior to these events, she had been recognised by Dr Devonshire to be a poor historian whose accounts were unreliable. As a result of hearing the few questions to be put to the Claimant, I quickly came to the conclusion that it is impossible to place any reliance on her evidence, whether for what she has said or for what she has omitted from her statement. The other person who accompanied the Claimant to some of her appointments, and who might have been expected to have a recollection, is her mother. Unfortunately, she has mixed Alzheimer's disease and vascular dementia and was unable to give evidence, so her statement was put in under the Civil Evidence Act. Again, that statement is of limited value and given that there

are some obvious inaccuracies and there has been no opportunity for the Defendants to challenge it, I find myself unable to put much weight on it.

Background History

10. Before dealing with the events out of which the allegations of breach of duty arise, it is necessary to refer to the first potentially relevant entry in the medical records, which is for 30 January 2012. This records a telephone consultation with the Third Defendant, Dr Louise Jackson, followed by an attendance on Dr Jackson at the surgery the same day. The complaint was foot pain for one week with the foot feeling slightly puffy underneath and being very painful on walking. Dr Jackson found red patches with small deep blisters looking like "pompholyx" (a type of eczema that causes tiny blisters). Professor Beard, the Defendants' expert in vascular surgery, told me that this might have been the first sign of the micro-embolic process starting (as to which see paragraph 51 below).

6 May 2012

History

11. On 6 May 2012 at about 19:30 hours, the Claimant had a sudden onset of reduced sensation in her right leg whereby she was unable to bear weight and she also had some mild discomfort in her right groin. An ambulance was called and arrived at 19:57. On examination by the paramedics, capillary refill time on the right foot was increased, being approximately four seconds as opposed to less than two seconds elsewhere. They also noted "reduced sensation in the right leg, right foot discoloured and slightly colder than left, pedal pulse difficult to locate." They recorded that the Claimant was unable to fully bear weight on her right leg. She was taken to Yeovil District Hospital arriving there at 20:24.

12. According to the hospital records, she was registered as a patient at the hospital at 20:32 and she was seen by the triage nurse, Nurse Foran, at 20:40, some 15 minutes after arrival and 8 minutes after registration. Nurse Foran noted the following history:

> "Sat on sofa, sudden onset of right leg numbness. Foot was cold compared to the other with increased capillary refill with paramedics. Now same as other foot. On examination foot still feeling numb. No weaknesses. History of headache for 2 days. Unable to weight bear on right leg some pain right femur – no bony tenderness. No history of trauma. Declined analgesia. Past medical history: asthma

A note to similar effect was made by Nurse Foran at 21:00 hours, but this did not reflect a further examination.

13. Nurse Foran told me that, at the hospital, they used the Manchester triage system which is based on a categorisation system from Category 1 (most serious) to Category 5 (least serious). Category 1 is a life-threatening condition such as cardiac arrest or major trauma for which immediate attention is required. Category 2 mandates attention by a doctor within 10 minutes and, she said, usually relates to serious medical emergencies such as an irregular heartbeat or severe breathing difficulty. Category 3 suggests that a patient should be seen within an hour. On Nurse Foran's assessment, the Claimant was

not in categories 1 or 2 warranting immediate attention or attention by a doctor within 10 minutes, so she triaged her as category 3, to be seen within an hour.

14. The Manchester triage system in relation specifically to limb problems is represented by a flow-chart at page 1,222 of the trial bundle. This gives the most severe category (red) as patients with airway compromise, inadequate breathing, exsanguinating haemorrhage or shock. The next category, orange, equivalent to Manchester triage category 2 requiring attention within 10 minutes, is represented by: severe pain, acutely short of breath, critical skin, vascular compromise and uncontrollable major haemorrhage. The third category, yellow, equivalent to Manchester triage category 3 includes: pleuritic pain, gross deformity, open fracture, uncontrollable minor haemorrhage, new neurological deficit, bleeding disorder, inappropriate history and moderate pain. On the basis of this, it is suggested on behalf of the Claimant that Nurse Foran should have put the Claimant into category 2, to be seen in 10 minutes, because the history as related to the paramedics of sudden unexplained loss of sensation in the right leg with an inability to bear weight represented vascular compromise. This suggestion was supported by the Claimant's A&E expert Mr Richmond who said that the presentation to the ambulance personnel was of a typical acute arterial ischaemia, the symptoms of which had improved by the time the Claimant was seen by Nurse Foran but had not resolved. Nurse Foran accepted in evidence that the history from the ambulance personnel suggested someone who had suffered a vascular compromise half an hour earlier and that this was serious, but insisted that the patient was not category 2 at the time she saw her, stating:

> "I can only go by what I'm seeing at the time. I have to do my own assessment."

In this regard she was supported by Dr Katherine Stevens, the Defendants' A&E expert, who stated that an A&E triage assessment is always carried out on the basis of what appears in front of the nurse and, in her opinion, category 3 was reasonable: this was not a patient who needed to be seen in 10 minutes.

15. Resolving this issue, in my judgment it was wholly reasonable for Nurse Foran to have triaged the Claimant as category 3 rather than category 2. Firstly, the limitations of a triage assessment must be recognised: this is a brief, but professional, assessment which enables the nurse to answer a single question, namely, how quickly does the patient need to be seen. Secondly, an experienced A&E nurse, as Nurse Foran was, will instinctively be able to judge the appropriate category. The immediate category is obvious: a patient with life-threatening injuries who, unless treated immediately, is likely to die. The second category also implies a very serious condition which requires an assessment by a doctor followed by treatment within 10 minutes. In relation to vascular compromise, this implies a patient whose leg is critically ischaemic and who, unless seen very rapidly, is at risk of losing his or her leg. However, this was not the situation as it presented to Nurse Foran: on the contrary, the situation was improving and apparently resolving. Dr Stevens was an excellent expert witness whose evidence I preferred to that of Mr Richmond, both generally and in relation to the issue. In my judgment, the suggestion that The Claimant should have been seen within 10 minutes should be rejected.

16. At 21:28, the Claimant was given paracetamol. The indication is not noted, but both headache and pain in the right femur had been recorded by Nurse Foran, and it is to be

assumed that it was for one or both of these. Then the next thing that happened is that, at 21:40, after waiting for about an hour, the Claimant decided to leave before she had been seen by a doctor.

17. There is an issue as to whether, before she left the department, the Claimant was adequately counselled or advised. Nurse Foran said that she would always try to persuade someone to stay but was unable to remember what she said to the patient on this occasion. She was taken to a flow-chart for patient self-discharge (trial bundle page 832) but that did not assist her to remember what had been said.

18. For the Claimant, Mr Richmond stated in his report that he would have expected either an urgent out-patient appointment to have been arranged or for The Claimant to have been strongly advised to attend her GP with a letter advising the need for urgent referral and investigation. Dr Stevens, however, considered that, when assessed by Nurse Foran, the Claimant's presentation was not one of limb threatening ischemia and that the self-discharge had been managed appropriately. Again, I preferred the evidence of Dr Stevens. Once it is established that the patient has capacity, and it is agreed by all that despite her learning difficulties this patient did have capacity, then, in my judgment, there is a limited amount that a reasonable A&E department is obliged to do. Certainly, the patient should be advised to stay and wait to see the doctor. However, she cannot be made to and if she decides to take her own discharge, she takes upon herself the risk in so doing. It seems to me that criticisms in this case are very much informed by hindsight with regard to knowledge of what later happened and, in her position, there was a limit to the amount that Nurse Foran could properly say to the patient when the patient had not even been examined by a doctor. Thus, Nurse Foran could reasonably have said to herself:

> "Well, what happened at home might have been a serious ischaemic issue but it might also have been innocuous. It was certainly transient and it is not for me to say to the patient: if you leave you might lose your leg. I just don't know. That would be for a doctor to say"

Just as a patient chooses whether to attend A&E to see a doctor, so too a patient may choose to leave A&E without seeing a doctor and that is the patient's decision, so long as the patient has capacity. At page 833 of the trial bundle, there is the patient self-discharge form signed by the Claimant which includes the following:

> "The relevant doctor has been advised of my decision to leave, contrary to medical advice and I accept full legal responsibility for taking my own discharge. I've been made aware that my GP will be advised by the Trust of this arrangement and any relevant services will be informed at the earliest opportunity."

19. There is an issue as to whether the discharge summary sent by the hospital to the GP was adequate. This is at page 834 of the notes and was externally entered on to the Claimant's computerised GP notes on 10 May 2012. It states:

> "Presenting complaint: reduced sensation right leg
> Diagnosis: Computer discharge …
> Discharge outcome: Did not wait"

The discharge form also indicated that the patient had attended A&E as a result of a 999 call. I was told that this was a computer-generated discharge form which is used for all patients who decided to leave without seeing a doctor. Thus, it gave no information about the circumstances which had prompted the patient to attend A&E in the first place, except for the basic information "reduced sensation right leg".

20. In their joint discussion, the A&E experts were asked to give an opinion as to whether the discharge summary ought to have made reference to the findings of the ambulance crew earlier on 6 May 2012. Mr Richmond stated that it should have done or the GP should have been advised by the next morning that the patient had self-discharged against medical advice and the likely diagnosis was of acute arterial ischemia which required urgent referral for further management. Dr Stevens, however, stated that it would not usually be the case for the discharge summary to make reference to the ambulance crew's findings, the discharge summary being a computer-generated letter based on coding. In her opinion, the discharge summary was adequate. Again, I preferred the evidence of Dr Stevens. It is too high a standard to suggest that the GP should be told of a likely diagnosis in circumstances where the patient has not even stayed to be seen by a doctor and therefore the doctor has been deprived of the opportunity to make a diagnosis. In my judgment it is enough that the GP is informed of the attendance and the fact of self-discharge. That is entered in the GP notes and should the GP see the patient, the GP can if they wish ask the patient more details about why she went to A&E and what had happened. The duty of the hospital must be seen in the context of many very busy A&E departments, sometimes overburdened with attending patients: what is being suggested should have been done here is too high a standard where the patient has taken on herself the legal responsibility for her self-discharge.

21. In the circumstances, I reject all the allegations of breach of duty arising out of the attendance on 6 May 2012 and I find that Nurse Foran acted reasonably, professionally and responsibly in relation to her dealings with the Claimant.

8 May 2012

22. On 8 May 2012, the Claimant attended the surgery where she was seen by a locum GP, Dr Matthew Burne, the First Defendant. He noted the presenting condition of calf pain and a three-week history of bilateral posterior calf pain when walking. He also noted left foot pain and that the patient did a lot of walking. On examination, the calf circumferences were equal on both sides and there were no skin changes apart from thread veins. The inferior calf muscle was tender at the point where it met the Achilles tendon. Simmonds' test was normal and there were no gaps or tenderness in the Achilles. His diagnosis was one of a calf muscle sprain, he advised the Claimant to try changing her footwear and that she should be reviewed in two to three weeks if no better.

23. Dr Burne gave evidence, and was asked whether he had excluded peripheral arterial disease from his differential diagnosis. His evidence seemed to me to be confused as, at one point, he agreed that he had not excluded peripheral arterial disease, but he also asserted that he had dismissed it from his diagnosis on the basis that the patient was under 50 years of age, had only a very short history of leg pain, did not suffer diabetes and had no known pre-existing disease which would be relevant. In cross-examination, he agreed that, with a three-week history of problems with walking, a suspicion of

intermittent claudication arising from a vascular problem would be raised and needed to be excluded. He said:

> "If I'd seriously considered intermittent claudication, I'd have checked her pedal pulses"

and he agreed that you cannot exclude intermittent claudication without so doing. Dr Burne was also asked whether he had questioned the patient about whether she suffered pain at rest and he agreed that he had not, otherwise it would have been noted. He agreed that the presence or absence of rest pain would have been very important if he had considered PAD a significant factor/cause. He said that his examination and history taking led him towards a diagnosis of musculoskeletal problem. He said that a short history made this atypical for PAD and that pushed him away from that diagnosis.

24. Although, at the start of the trial, there had been no admissions of breach of duty on the part of Dr Burne, at the start of the second day of the trial, Mr Peacock, representing Dr Burne, handed up the following admission:

> "For the purposes of this action only, it is admitted that the First Defendant was in breach of duty on 8 May 2012 in that he should have checked the Claimant's pedal pulses but did not."

25. In my judgment, the admission of breach of duty in failing to check the Claimant's pedal pulses incorporates issue ix) (see paragraph 8 above), namely whether Dr Burne should have considered a vascular problem, as the checking of pedal pulses pre-supposes consideration of a vascular problem.

26. The real issue, though, is whether the Claimant should have been referred for a vascular opinion. This will depend, in turn, upon what Dr Burne would have found had he checked the pedal pulses, the answer to which is determined by the evidence of the expert vascular surgeons (see paragraph 49 et seq below). Whether a referral is indicated is, though, a matter for the GP experts. In that regard I heard evidence from Dr Nicholas Kearsley for the Claimant, Dr Ian Isaac for the First Defendant Dr Burne and Dr Alistair Bint, for the Second Defendant, Dr Devonshire. In relation to the consultation with Dr Burne, I was impressed with the evidence of both Dr Kearsley and Dr Isaac. In their joint statement, they agreed that if the history was not consistent with claudication and rest pain, then no referral was needed. They stated:

> "The experts agreed that if the history was consistent with claudication and rest pain and there were markedly reduced or absent pulses then referral was mandatory."

In their evidence, they confirmed that, with this "trinity" of (1) claudication, (2) rest pain and (3) absent/markedly reduced pedal pulses, referral to a vascular surgeon would be urgent. In his evidence, Dr Kearsley agreed that urgent referral would not be mandatory in the absence of a history of ischaemic rest pain, that is with only a history of claudication, together with absent or markedly reduced pedal pulses. In those circumstances, he said that a range of options could include monitoring for a period by the GP or, potentially, a routine referral. He said:

> "Most patients with intermittent claudication would initially be managed conservatively. The key difference being if they had evidence of critical limb ischemia, that they need urgent referral by telephone."

He agreed that, without the ischaemic rest pain, the urgency disappears. Equally, Dr Kearsley agreed that if the only symptom was one of intermittent claudication but the pedal pulses were present (and strong) and there was no history of ischaemic rest pain, then referral would not be required. Indeed, Dr Kearsley said that a doctor might be reluctant to make a diagnosis of intermittent claudication if the pulses were present.

27. It will be apparent from the above that whether a referral to a vascular surgeon, either routine or urgent, was required depends upon the answer to the factual issues relevant to this consultation: whether, had they been checked, the pedal pulses would have been present, whether there is likely to have been intermittent claudication (which should have been elicited as part of the history) and whether there was ischaemic rest pain (again which should have been elicited upon history taking). These issues depend on the conclusions I come to in relation to the expert evidence of the vascular surgeons which I consider later in this judgment (paragraph 49 et seq). What is clear is that, for the amputations in this case to have been avoided, an urgent vascular referral was required and, for this, the pedal pulses would have needed to have been absent (or markedly reduced) and there would have needed to have been a history of intermittent claudication and ischaemic foot pain at rest. If this "trinity" of signs/symptoms were present, it seems to me that a competent GP should have elicited them and therefore made an urgent referral for a vascular opinion.

9 May 2012

28. The following day, on 9 May 2012, the Claimant again attended the A&E department at Yeovil District Hospital where she registered at 09:51 hours. At 10:05 hours, the Claimant was triaged by Nurse Jorge who noted as follows:

> "C/O (complaining of) pain to L foot and back of leg – for 2/52 (2 weeks) ago
> No HX (history) of trauma
> Seen by GP yesterday and telling sprain
> L foot – able to weight bear, pain when walking
> NVS (neuro-vascular system) intact
> PMH (past medical history) – ASTHMA
> Needs inhaler."

29. In his evidence, Mr Jorge said that, to check the neuro-vascular system, he would check the pedal pulse and capillary refill. He said:

> "I checked the capillary refill by pressing on each toe-nail and counting the time for the colour to return. If the capillary refill had been longer than two seconds I would have recorded this because this would be an abnormal result. To check the pedal pulse, I would have placed my two fingers on the dorsal top part of the Claimant's left foot for one minute. If I had not found a pedal pulse, I would have recorded this abnormality. I also checked if the Claimant had normal feeling or if there was any numbness in her left leg/foot. Whilst examining the Claimant I would

have asked her if she could feel me pressing on the toes or sole of the left foot. Had there been any numbness, discolouration or had I not been able to find the pedal pulse, I would have recorded this."

30. At 11:50 hours, the Claimant was seen by Dr Halcro who recorded:

> "PC L calf pain
>
> HPC L calf pain for 2/52. Saw GP yesterday diagnosis muscle strain. Has been taking Co-dydramol and paracetamol! Advised to stop paracetamol due to overdose risk.
>
> OE calves soft equal size no erythema
>
> IMP calf strain
>
> Plan add ibuprofen see GP ?for physio."

31. Dr Halcro did not give evidence as she was due to have a baby at the time of the trial. In her witness statement she confirmed that she was working as a Foundation Year 2 doctor at the time. She said:

> "I should have checked the pedal pulse. Based on my usual practice I think that I did but I should have recorded this even if the findings were normal. In 2012 it was my usual practice to record important negative findings. I believe that I may not have recorded that the peripheral pulses were present as it was documented that The Claimant was neurovascularly intact in the triage notes. At the time of The Claimant's presentation I'd only been working in the department for a month and was still working out how much information was necessary to document. With hindsight and more experience working within an emergency department, I should have documented all negative findings. If the pedal pulse had been absent, I would have performed a thorough examination of the vascular system to include the heart and carotid arteries and all the peripheral pulses. I would then have discussed with a senior colleague in the department prior to requesting a vascular ultra-sound and vascular opinion."

Clearly, the weight of this evidence is diminished because there was no opportunity for Dr Halcro to be cross-examined on behalf of the Claimant.

32. Mr Jorge did give evidence and he confirmed that his note "NVS" imported the checking of the pedal pulse and capillary refill time. He said that if the capillary refill time or pedal pulse had been abnormal, he would have put "NVS abnormal" and reported this to the doctor immediately. Clearly, if I accept Mr Jorge's evidence that he checked for, and found, a pedal pulse, then this is an important finding of fact for the purposes of this trial. However, given that it is possible (and, I was told by Mr Heather, the Claimant's expert in vascular surgery, relatively common) for there to be a "false positive" finding in relation to the pedal pulse (that is, a finding that it is present when in fact it is absent), it seems to me that, if I prefer the evidence of Mr Heather to that of Professor Beard, I can find that the pedal pulse would not in fact have been

present without thereby disbelieving Mr Jorge. I must also bear in mind Dr Halcro's evidence that, based on her usual practise, she would have checked the pedal pulse and the lack of a reference to this indicates a positive finding. As referred to in paragraph 43 below, Nurse Ayre also says that she found a pedal pulse on 13 June 2012 and clearly it would be more difficult for me to find that there were false positives on all three occasions were I to find that all three practitioners had checked for a pedal pulse and found one to be present.

33. If the pedal pulse was found to be present, alternatively if Dr Halcro did not check for a pedal pulse but would have found one if she had done so, then there was no need for a vascular referral. Whether an adequate history was obtained by Dr Halcro and whether she should have suspected a vascular problem and referred for a vascular opinion will, as with the First Defendant, Dr Burne, depend in large part on whose evidence I prefer between the vascular surgeons.

The Fourth Defendant's Admission

34. However, as noted, breach of duty has been admitted in that there was a failure in the discharge letter to draw to the GP's attention the history of intermittent claudication. This raises an interesting deviation between the case for the Fourth Defendant and the cases for the First and Second Defendants. It is the First and Second Defendants' case that there never was a history of intermittent claudication and that I should so find as a matter of fact. If that were the case, then that would represent a deviation from the admission by the Fourth Defendant that a history of intermittent claudication should have been imparted to the GP in the discharge letter, implying that there was in fact a history of intermittent claudication.

35. The foundation for the admission on behalf of the Fourth Defendant was, Mr de Bono QC told me, the report of Dr Stevens where she said (page 319):

> "7. ii. The presentations on the 9 May 2012 and 12 May 2012 were not of acute arterial occlusion requiring immediate vascular input. It was therefore reasonable not to refer the Claimant to the in-taking vascular team as an emergency on either occasion. The history of possible intermittent claudication should have been drawn to the attention of the Claimant's GP in the discharge letter on either occasion."

It can immediately be seen that the admission on behalf of the Fourth Defendant has excluded the word "possible". The admission on the part of the Fourth Defendant that there had been a history of intermittent claudication must have been of some comfort and significance to the Claimant and her legal team. However, I accept that the omission of the word "possible" was an error and that there was no intention on the part of the Fourth Defendant to admit more than had been indicated in Dr Stevens' report. In any event, it may not matter too much. If there was, on my factual findings, a history of intermittent claudication, then this should have been elicited by the GPs in any event. If there was not and if I find that the pedal pulses were present, then there was no indication to refer for a vascular opinion, and the failure to draw to the GPs' attention in the discharge letter a history of intermittent claudication, or a history of possible claudication, will not have been causally significant. In any event, a history of intermittent claudication by itself is barren: the point about such a history is that it should lead to an examination for the pedal pulse, and the presence or absence of the

pedal pulse is more significant. In the end it is going to be that issue, together with whether the Claimant had ischaemic rest pain which is likely to determine this case.

12 May 2012

36. On 12 May 2012, the Claimant again attended the A&E department of Yeovil District Hospital, being registered at 11:11 hours. The presenting complaint was left leg injury and she was complaining of pain over her left foot for three weeks. The triage note stated:

> "Still ambulatory and weight bearing".

The Claimant consented to nurse-led treatment and at 12:55 hours she was seen by a nurse practitioner, Joanne Parslow. Sister Parslow made the following note:

> "PC left foot injury
>
> HPC painful for three to four weeks. Seen by ED 1 week ago with calf strain
>
> Foot pain is progressively getting worse.
>
> PMH asthma on Ventolin inhalers
>
> o/e no swelling, bruising or deformity noted. No redness or heat noted
>
> No bony tenderness noted
>
> Pain in arch of foot travelling towards toes
>
> All movements initiated but painful
>
> Resisted movements
>
> IMP ? plantar fasciitis
>
> Diagnosis verbal advice rest regular analgesia avoid ibuprofen as interacts with asthma try changing shoes if not settling see GP re podiatry services Discharge"

37. Sister Parslow gave evidence and confirmed the accuracy of her witness statement dated 21 June 2017. She said that she was aware that The Claimant had attended on 9 May when she had been complaining of pain in her left calf and had been seen by Dr Halcro. She had formed the impression that The Claimant was displaying evidence of minor learning difficulties but was able to understand what was said to her and was able to communicate appropriately. She said that she had examined the leg to see if it was discoloured or mottled and she assessed for bony tenderness by palpating the leg. She said:

> "I did not assess her pedal pulses because her foot was warm and pink and thus I did not have any concern about her circulation, either from a venous or arterial perspective. Had The Claimant's foot been cold and

> white or hot and red I would have been immediately concerned that the foot may be compromised. Had this been the case I would have assessed The Claimant's pedal pulses. Had this assessment led me to consider a diagnosis of either a vascular or arterial problem I would have consulted the senior ED [Emergency Department] doctor on call that day so that they could undertake further neurovascular examination and if appropriate refer The Claimant to the vascular surgeons."

She also said that if she had had any concerns that The Claimant's leg was ischaemic she would have immediately consulted a senior ED doctor and symptoms of ischaemia would have been recorded. She said:

> "Given that I did carry out an examination I think it is very unlikely that I missed any significant vascular findings."

38. In the course of her evidence, Sister Parslow said that she in fact remembered the patient because a complaint had been made which she dealt with. She was cross-examined about paragraph 8 of her statement where she had said:

> "When I saw The Claimant on 12 May I asked about her symptoms and she confirmed that she had attended ED a few days previously with calf pain. That pain had been present for about three to four weeks however that pain had now settled and she was now experiencing pain in her foot. The Claimant advised that the pain in her foot was constant was getting worse."

In cross-examination, Sister Parslow said that paragraph 8 was in fact incorrect and a statement was then produced which she had made on 5 September 2012 in response to the complaint (see what then became page 163A of the trial bundle). In that statement, Sister Parslow had said:

> "My impression from the history given was that foot pain specifically in the arch was the main problem. She informed me that the calf pain started afterwards as the result of the initial foot pain and was in fact much improved at that time. … My examination of The Claimant indicated nothing to suggest any symptoms of DVT or poor circulation, calf wasn't swollen, red or hot and neither was her foot. Circulation and sensation appeared normal but I acknowledge that I have failed to document this in my notes. I acknowledged that The Claimant was walking with a mild limp."

Clearly, if I were to find that the calf pain had followed the foot pain and that the calf pain was, by the time of the attendance on 12 May, settling and that the main complaint was of pain in the arch of the left foot, then those would be significant findings for the purpose of the allegations in this trial. Sister Parslow accepted that she should have checked the pedal pulses and was in breach of duty for failing to do so. This has been admitted by the Fourth Defendant.

15 May 2012

39. On 15 May 2012, the Claimant again consulted her GP. First there was a telephone conversation with the Third Defendant, Dr Hilary Devonshire where the complaint was of foot pain and the history was "L leg about 3/52 pulled muscles now unable to walk due to calf pain."

Dr Devonshire arranged for the Claimant to come in to see her. She told me that she would always see this patient because she knew her history-giving to be inconsistent. She said that she watched the Claimant walk in and sit down, stating that she always started with the patient as they came through the door. Dr Devonshire said that she asked The Claimant where she was feeling the pain and The Claimant showed her where: she had a very swollen ankle. Dr Devonshire examined the foot and found a swollen malleolus. She said that the foot was warm and pink and she did not appear to have a vascular condition which is why she didn't check her pedal pulse. She made the following note (where, pursuant to the system in use at that surgery, E = presenting condition, S = history, O = On Examination, Rq = any investigations needed and P = plan):

> "E: foot pain
>
> S: unable to weight bear or move L foot
>
> O: L foot very swollen over lat malleolus, tender over basal fibula, splits on back of heel.
>
> Rq: plain x-ray ankle joint
>
> P: ? ? # for x-ray stat."

In evidence Dr Devonshire said that if she had received a discharge letter referring to a history of intermittent claudication, she would have arranged for the patient to come in and see her. She agreed that such a letter would have raised a question of a vascular problem. Equally, if the foot is cold, that would take you down a different route than if it is warm. She confirmed that if there had been a history of intermittent claudication, absent or reduced pulses and pain at rest, she would have made an urgent referral to a vascular surgeon.

40. I was concerned that, in her evidence, Dr Devonshire indicated that she would not have reviewed the previous entries in the GP notes before seeing the Claimant and therefore would not have been aware either that The Claimant had seen Dr Burne a week previously, nor that she had attended A&E on 6 May and 9 May, both those attendances having been entered in the GP notes before Dr Devonshire saw the Claimant. However, in the end, it seems to me that those things would have led to her doing no more than she has admitted she should have done, namely check the Claimant's pedal pulses. Had they been present, there would have been no indication for a vascular referral. Had they been absent, or markedly reduced, then there would and should have been further questioning ("history-taking") in order to ascertain whether there was also intermittent claudication and ischaemic foot pain at rest.

Further history

41. On 21 May 2012, there was a further consultation between The Claimant and Dr Devonshire when The Claimant told Dr Devonshire that she still had a very painful foot, especially when walking. Dr Devonshire agreed to make an orthopaedic referral.

42. Then, on 11 June 2012, The Claimant rang the surgery and spoke to Dr Jackson, the Third Defendant, complaining of foot pain and saying that she thought the foot was now infected. Dr Jackson called the Claimant in for review and found a small but deep and irregularly shaped ulcer on the heel with erythema spreading up to the ankle and with a sloughy bottom. It has been admitted on behalf of Dr Jackson that there was a negligent failure to refer the Claimant for an urgent opinion from a vascular surgeon at this stage. The basis for this admission is not wholly clear to me but it seems likely that it is admitted that the ulcer on the foot, together with the history of foot pain, should alone have led Dr Jackson to suspect an ischaemic problem with a vascular origin requiring urgent referral. This does not incorporate the "trinity" of intermittent claudication, absent pulses and ischaemic foot pain at rest but the development of an ulcer is probably a more advanced stage which makes any enquiry into the trinity of signs/symptoms redundant, as opposed to the earlier stage before the ulcer appeared. This is supported by the Fontaine classification whereby ulceration is the fourth stage after intermittent claudication and foot pain at rest: see paragraph 49 below. In Dr Jackson's case, the only issue is one of causation: what would have happened had there been an urgent vascular referral and whether that would have saved the arm and/or leg (as to which, see paragraph 62 below).

43. On 13 June 2012, the Claimant attended the surgery to have her left foot ulcer reviewed and re-dressed. She was seen by a nurse, Angela Ayre, who noted:

> "T; Nursing care – dressing small ulcer to Lt side of Lt heel. Idoflex and Allevyn dressing. Pedal Pulse good and cap refill less than 2 secs, foot warm."

Nurse Ayre stated in her witness statement, which formed part of her evidence in chief, that "because the ulcer was a new complaint for her, in accordance with my usual practice, I checked her foot for pedal pulses, capillary refill time (CRT) colour and warmth, given that poor circulation is a common cause of foot ulcers." In her evidence, Nurse Ayre claimed to have taken "thousands" of pedal pulses and she described her methodology, using two fingers. She said that she had been left with no concern for the vascular status of the foot and if she had had any such concern, she would have noted it.

44. The referral to the vascular service in fact came from the OASIS (Orthopaedic Assessment Service in Somerset) clinic on 9 July 2012. The Claimant was seen by a specialist musculoskeletal practitioner, Mr David Weeks, who wrote that he had been asked to see The Claimant by Dr Devonshire "for a four-month ongoing issue with regards to swelling of both feet, more so on the left and marked muscle cramps of the posterior calf on the left side." It is to be noted that this is not the history that was actually taken by Dr Devonshire or any of the other healthcare professionals who saw The Claimant in May 2012. I have not been able to find the referral letter in the trial documents. Mr Weeks found marked discolouration of both feet, worse on the left than the right, with marked skin breakdown. He noted:

> "Her calf cramp comes on when she is walking and she is having to use two sticks at present in case the calf cramp comes on. … She is getting cramp in the calf at night as well. … On examination today she has a very stiff left ankle and first MTP but this is not related to her pain or discomfort. She was quite tight, posterior calf complex. She has a very marked discolouration of her feet, worse on the left than the right with marked skin breakdown. She reports regular swelling throughout the day and has to keep putting her feet up. This alleviates the calf pain at the same time."

He referred The Claimant to the vascular surgeons at Yeovil District Hospital for their opinion as to whether there was a vascular cause for the calf cramp and because of the skin quality, ulcerations and symptoms.

45. Unfortunately, before The Claimant could be seen by the vascular surgeons, on 17 July 2012 she suffered an acute onset of numbness in her left elbow. She had in fact suffered an occlusion to the artery leading to the left arm, caused by a large thrombo-embolus. The ischaemic damage to the arm was such that the limb became non-viable and an amputation was necessary.

46. On 18 July 2012, The Claimant's left leg was reviewed. The left foot was found to be dusky with prolonged capillary refill time but a handheld doppler ultrasound identified good flow of blood in the posterior tibial artery. The dorsalis pedis artery on the upper surface of the foot could not be identified. The conclusion was that the ischaemia of the left leg and foot was stable and there had been no acute deterioration.

47. On 21 July 2012, the Claimant was seen by the vascular consultant, Mr Williams who noted:

> "In view of recent symptoms will need additional investigations to look for source of proved emboli – 1 echocardiogram 2 ? CT chest to look for occult lung tumour."

48. Although The Claimant was discharged from hospital on 24 July 2012, she was readmitted on the evening of 26 July 2012 at Dr Jackson's instigation and a distal bypass procedure was planned. This was carried out on 2 August 2012 but unfortunately the graft occluded and then reoccluded and her foot became critically ischaemic. A left below-knee amputation was carried out on 4 August 2012 and an above-knee amputation on 23 August 2012.

The vascular evidence

49. Before considering the evidence of the vascular experts, it is appropriate to explain and define some of the medical concepts which have been used in this case and which have underpinned the evidence and the opinions which have been given.

i) <u>Intermittent claudication</u>

All the experts agree that the definition contained in the document at page 1183 of the trial bundle was accurate and appropriate:

> "A history of muscular, cramp like pain on walking that is rapidly relieved by resting, together with absent pulses, strongly support the diagnosis of intermittent claudication. Disease of the superficial femoral artery in the thigh results in absent popliteal and foot pulses and often causes claudication. Disease of the aorta or iliac artery results in a weak or absent femoral pulse, often associated with a femoral bruit. Disease at this level may cause calf, thigh or buttock claudication."

It was apparent during the trial that "intermittent claudication" is both a diagnosis and also describes the signs or symptoms which lead to the diagnosis. The term denotes impaired blood flow to the calf muscles so that, on exercise, and in particular walking, after a certain distance the calf muscles are unable to maintain the exercise and cause pain. As Mr Jackson put it at one stage, the "demand outstrips the supply". It is a characteristic of this process that the patient needs to stop walking or rest his/her muscles after a certain distance and then the muscles rapidly recover so that the patient can start walking again. The distance that the patient is able to walk before he/she needs to stop and wait for the muscles to recover is known as the "claudication distance".

ii) Ischaemic foot pain at rest

Professor Beard, the Defendants' expert, wrote a clinical review entitled "ABC of arterial and venous disease" for the British Medical Journal in 2000 in which he stated the following:

> "Peripheral vascular disease commonly affects the arteries supplying the leg and is mostly caused by atherosclerosis. Restriction of blood flow, due to arterial stenosis or occlusion, often leads to patients to complain of muscle pain on walking (intermittent claudication). Any further reduction in blood flow causes ischaemic pain at rest, which affects the foot. Ulceration and gangrene may then supervene and can result in loss of the limb if not treated. The Fontaine score is useful when classifying the severity of ischaemia."

Professor Beard then sets out the four stages of the Fontaine classification:

1. Asymptomatic
2. Intermittent claudication
3. Ischaemic rest pain
4. Ulceration or gangrene, or both.

The experts further agreed that the following in relation to critical limb ischaemia:

> "Patients with critical limb ischaemia often describe a history of deteriorating claudication, progressing to nocturnal rest pain. Ulceration or gangrene commonly results from minor trauma. Nocturnal rest pain

> often occurs just after the patient has fallen asleep when the systemic blood pressure falls, further reducing perfusion to the foot. Hanging the foot out of bed increases perfusion and produces the typical dusky red hue due to loss of capillary tone. Elevation causes pallor and venous guttering. … Patients with critical limb ischaemia require urgent referral to a vascular surgeon."

iii) Pedal pulses

> Examination of pedal pulses is a standard clinical tool for evaluating peripheral circulation. In particular, loss of the dorsalis pedis arterial pulse may indicate occlusion of the tibial arteries which, in turn, may be caused by peripheral arterial disease ("PAD") as a result of atherosclerotic disease. Atherosclerosis is a systemic disease which puts a patient at much higher risk of cardiovascular death and a diminished foot pulse may be the only clue that a patient is at increased risk of cardiovascular death. Thus, the loss of the dorsalis pedis pulse has implications both for the circulation in the leg and also for the patient's wider cardiovascular condition.

50. It is important to note for the purposes of this case that atherosclerosis causing narrowing of the arteries and PAD is a chronic and progressive disease. Because the blood supply to the leg may come from a variety of different arteries, there may be blockage of the popliteal artery, for example, without any symptoms. In that case, the loss of a pedal pulse may be the first and only sign that the artery has become blocked and that the patient is suffering from PAD. Then, as the disease progresses, the arteries stenose (narrow), the blood supply becomes increasingly compromised and the patient starts to get the symptoms of intermittent claudication as described above. This is the second stage of the Fontaine classification. The next stage is ischaemic foot pain at rest, classically presenting at first as nocturnal pain associated with the initial fall in blood pressure when falling asleep. At this stage, urgent referral to a vascular surgeon is required because, without treatment, the foot and/or leg are in danger of the tissues becoming non-viable or gangrenous with a consequent need for an amputation. This may be indicated by the fourth stage of the Fontaine classification, ulceration.

51. In the present case, it is agreed between the vascular experts that the Claimant, The Claimant, did not in fact suffer from atherosclerosis but that she suffered from arterial thrombo-embolism a much rarer entity. Thus, in their joint statement they state:

> "We agree that despite a history of smoking, investigations have shown no evidence of significant atherosclerosis in the Claimant's aorta or major arm and leg arteries and we do not believe that atherosclerosis has played a role in the case, either in the form of progressive arterial narrowing or an atherosclerotic plaque causing episodes of embolization of atherosclerotic debris, platelet aggregates or cholesterol crystals (i.e. athero-embolism)."

It is agreed that the initial symptoms of pain in both calves on walking, together with the transient episode of acute ischaemia of the right leg on 6 May and the progressive ischaemia of the left foot from May 2012 and the severe acute ischaemia of the left arm in July 2012 are together explained by the same mechanism of arterial thrombo-embolism. This is the only unifying cause

which could explain everything that happened and it is agreed as the cause by the experts. The experts further agreed as follows:

> "In our opinion the Claimant has suffered multiple episodes of embolization of blood clot (i.e. arterial thrombo-embolism) which at various times, may have taken the form either of showers of micro-emboli or of larger fragments of blood clot of sufficient size to cause occlusion of major peripheral arteries. We agree that it is most likely that these thrombo-emboli arose from an unidentified source in the heart or in the proximal thoracic aorta, i.e. proximal to the origin of the left subclavian artery."

The reason for supposing such a source is that these are the areas necessary for the thrombo-emboli to have compromised the arterial supply to the arm and thus caused the acute left-upper limb ischaemia which led to the Claimant's left arm amputation. Despite their agreement, the experts also agreed that this is "a difficult and unusual case and that the exact mechanism causing the ischaemia of the left arm and left leg has not been fully explained." The most common causes of thrombophilia have been excluded by blood testing and no obvious source for thrombo-emboli has been identified.

52. The consequence of the agreement of the experts that the cause of the Claimant's arm and leg ischaemia was thrombo-embolic is that the treatment to have addressed this and avoided the critical limb ischaemia would have been anti-coagulation. The common treatment for atherosclerosis is anti-platelets and statins, but these would have been ineffective in treating thrombo-emboli. Thus if, upon referral to a vascular surgeon, the cause of The Claimant's problems had not been identified as thrombo-embolic but suspected to be atherosclerotic then the ischaemia would not have been avoided.

53. The experts were asked to address the latest time by when anti-coagulation would have avoided the loss of the arm and the loss of the leg. They agreed as follows:

> <u>Leg</u>
>
> "We agreed that amputation of the Claimant's left leg was avoidable, on the balance of probabilities, had she been fully anti-coagulated with Heparin or Warfarin at a sufficiently early date to avoid the extensive occlusion and thrombosis of the tibial arteries and their smaller branches in the left leg and foot. We think this would need to have been started in May [2012] before she developed the heel ulcer in June."
>
> <u>Arm</u>
>
> The experts agree:
>
> "We agree that the episode of thrombo-embolism involving the Claimant's left arm would have been avoided and amputation of the arm would not have been required if, on the balance of probabilities, she had been fully anti-coagulated with Heparin or Warfarin for at least a few days prior to the episode of embolization on or around 17 July 2012."

Thus, although the amputation of the arm preceded the amputation of the leg, the experts are agreed that, the ischaemia of the arm being the more acute event, this was more avoidable in terms of time than the amputation of the leg which was doomed from the end of May 2012. It is agreed between the parties that there is no conceivable finding I could make which would result in the amputation of the leg being avoided but not the amputation of the arm and therefore quantum has been agreed for two alternative findings: 1) avoidance of amputation of both limbs; 2) avoidance of amputation of the arm alone.

54. Despite the extensive agreement between the vascular experts as to the fundamental pathology and mechanism of injury, there is a clear and significant difference between them as to the detailed mechanism and in particular whether there were the "showers of micro-emboli" postulated by Professor Beard or larger fragments of blood clot of sufficient size to cause occlusion of the major peripheral arteries (Mr Heather). The latter would be expected to cause the loss of the pedal pulses, but the former would not. In the joint statement, Professor Beard stated the following:

> "There are two well recognised types of arterial embolization to the legs:
>
> - The commonest type is thrombo-embolism usually of cardiac origin due to arterial fibrillation. These large (macro) thrombo-emboli classically cause acute limb ischaemia because they block the major feeding arteries. This is what caused the acute ischaemia of her left arm on 17 July 2012 and possibly the transient ischaemia of her right leg on 6 May 2012. This condition requires emergency removal of the thrombus with an embolectomy catheter and/or thrombolysis to restore blood flow, plus anti-coagulation with Heparin or Warfarin to reduce the risk of further embolization.
>
> - Athero-embolism is much less common. In this condition, showers of small particles (micro-emboli) of atheroma and debris from a proximal atherosclerotic plaque or stenosis progressively block the small arterioles in the tissue bed itself. Classically, pulses in the feeding arteries are preserved until the run-off is irreversibly damaged, which is why this condition is often mistaken for rheumatological conditions such as plantar fasciitis. This condition requires anti-platelet and statin therapy to stabilise the atheroma to reduce the risk of further embolization. …
>
> - In this unique case, it seems that the micro-emboli causing progressive ischaemia of her left leg were composed of thrombus rather than atheroma, from an unknown source. This is an extremely rare condition that I have only seen on a couple of occasions during my career, and one that is not described in textbooks of vascular surgery or in the scientific literature. In retrospect, I agree that anti-coagulation would probably have avoided the amputation of the left leg if started in May 2012 and the arm amputation if started for at least a few days before 17 July 2012. However, there would have

> been no indication for anti-coagulation based on the information available at the time, and I therefore maintain my opinion that a responsible body of vascular surgeons would have treated [the Claimant] with anti-platelet therapy."

Thus, Professor Beard is of the opinion that this vanishingly rare condition whereby there are showers of micro-emboli formed of thrombus rather than atheroma have invaded the arterioles of the foot, mainly, but also the calves, causing the calf pain, the foot pain and the increasing ischaemia of the foot. He also believes that the episode of 6 May could have been caused by a shower of micro-emboli into the right leg and foot but he concedes that this might also have been a macro-embolus causing occlusion of the tibial arteries of the right leg (hence the note by the paramedics "Pedal Pulse difficult to locate"), but which, very unusually, quickly fragmented or dispersed allowing reperfusion and The Claimant's resolving condition whilst she was waiting in the hospital to be seen by the A&E doctor. Generally, this theory of Professor Beard's would explain the preservation of the pedal pulses (because the arteries were not occluded) and would be consistent with the finding of a pedal pulse by Nurse Jorge on 9 May and by Nurse Ayre on 13 June, and would also be consistent with the sudden onset of pain in the calves in about April 2012 causing pain on walking but without a description of the classic intermittent claudication and without a description of ischaemic foot pain at rest with its characteristic initial nocturnal onset.

55. For the Claimant, Mr Heather considers that all can be explained by reference to large (macro) thrombo-emboli completely but transiently compromising the circulation of the right leg on 6 May 2012 through a clot in the right groin area, and also compromising the circulation of both legs from April 2012 more slowly and less completely by occlusion of the peripheral arteries, worse on the left than on the right. In his opinion, this would have led to loss of the pedal pulses on both sides from April 2012. He also considers that such a process would have resulted in intermittent claudication, which is the true history conveyed by the history noted of "pain on walking" and also what was ischaemia of the left foot indicated by the complaint of pain in the left foot, for example on 12 May 2012 when the Claimant went to A&E and on 15 May 2012 when the Claimant saw Dr Devonshire. Thus, Mr Heather considers that the trinity of loss of pedal pulses, intermittent claudication and ischaemic foot pain at rest were there to be elicited by the GPs: had they been elicited, it is agreed by the GP experts that there would have been an urgent vascular referral.

56. What would a vascular surgeon have done? Firstly, Mr Heather is of the opinion that investigation would have excluded atherosclerosis which, in any event, is much the less common cause of arterial embolization to the legs. Mr Heather is of the opinion that arterial embolization of the legs would have been top of the differential diagnoses for a vascular surgeon as the only unifying explanation for the history, including the acute limb ischaemia on the right side on 6 May 2012 and the commonest type being thrombo-embolism (as acknowledged by Professor Beard), the treatment would have been anti-coagulation with Heparin and Warfarin. Thus, had Dr Devonshire checked the pedal pulses and found them to be absent and had she then looked further into the history and further questioned the Claimant, she would have arranged for an urgent referral to the vascular surgeons who would have instigated the necessary treatment before the end of May 2012 and therefore in time.

Discussion

57. I should say at the outset that I found both Mr Heather and Professor Beard to be generally impressive witnesses, either of whose evidence I would have been happy to accept had it stood alone. An example of their careful approach is to be found in their joint statement where they considered the presence (or otherwise) of pedal pulses. They were asked at one point:

> "Is it agreed that in addition at paragraph 12 of his statement Mr Jorge said that he found pulses to be present on 9 May 2012?"

They answer:

> "To be accurate, we both agree that Mr Jorge's statement describes his usual method of palpating the dorsalis pedis pulse and that he asserts that he would have recorded in his notes if he had been unable to feel the pulse."

They were then asked:

> "Is it agreed that in addition at paragraph 4 of her statement Dr Halcro says that she found pulses to be present on 9 May 2012?"

To this they replied:

> "To be accurate, we both agree that Dr Halcro's statement recalls that she should have checked the Claimant's pedal pulses and thinks that she would have done so."

Thus, in relation to both these matters, these experts did not allow themselves to be misled by the form of question which they were asked, but preferred to give their answers on the basis of the evidence as it actually existed. This was very impressive.

58. For the Claimant, Mr Bebb QC submitted that I should prefer Mr Heather's opinion not only on the basis of the merits of his approach but also as an application of "Occam's razor". This is the problem-solving principle that the simplest solution tends to be the correct one. Thus, when presented with competing hypotheses to solve a problem, one should select the solution with the fewest assumptions. Mr Bebb submits that, given the agreement of the vascular experts that a competent vascular surgeon would have diagnosed arterial ischaemia and that the history, together with findings on imaging of scattered occlusions in the tibial arteries of both legs, would have strongly suggested an embolic cause for the symptoms in the Claimant's legs, the most likely cause is thrombo-embolism caused by large, macro thrombo-emboli causing acute limb ischaemia by blocking the major feeding arteries. He submits that Professor Beard's theory is unattractive and should be rejected because it is not even recognised in the medical literature and is acknowledged by him to be virtually unique and certainly so rare that he has only seen it on a couple of occasions during his career (assuming that this is what he actually saw on those previous occasions). I certainly instinctively sympathise with Mr Bebb's approach. Generally, I consider that the appropriate place for advances in medical science to be the pages of The Lancet or The New England Journal of Medicine rather than the Law Reports.

59. However, despite the above, I have come to the conclusion that there are such insuperable difficulties for Mr Heather's theory and approach that I am driven to prefer Professor Beard's. In particular, in my judgment careful examination of the history and the findings by the various healthcare professionals who examined the Claimant at various times paints a picture which is not consistent with Mr Heather's opinion but which is consistent with that of Professor Beard. Thus:

i) I find that on three occasions, twice in May and once in June 2012, the dorsalis pedis pulse was present. I accept the evidence of Mr Jorge that he tested and found the dorsalis pedis pulse and that this was covered by his note "NVS intact" and I also accept the evidence of Dr Halcro that she would have followed her usual practise and examined for pedal pulses. Most strongly however, there is the note of Nurse Ayre of her examination on 13 June, supported by her strong and wholly credible evidence. Mr Heather can only explain those findings by reference to a "false positive" finding but I was not convinced by his evidence that a false positive is equally likely for an experienced practitioner such as Nurse Ayre as for an inexperienced practitioner. In any event, it just seems so unlikely that false positives would have been found by three different practitioners within a short period of each other in relation to the same patient that by far the better explanation is that the pulses were in fact present. If they were that is a fatal blow to Mr Heather's opinion.

ii) Nor am I convinced that there was, at any time, a true history of intermittent claudication. Although pain on walking was described, I feel sure that one of the medical practitioners, given a history of intermittent claudication (that is, ability to walk a certain distance and then cessation of walking with pain followed by resumption within a short period of time) would have made a note of "intermittent claudication" given the significance of such a history and its implications. Whether Dr Halcro in A&E or Dr Burne or Dr Devonshire or Dr Jackson, all these doctors would have known of the meaning of intermittent claudication and its significance and would have noted it. I cannot believe that they all missed what was described at one point during the trial as a "barn door" diagnosis.

iii) Nor was there a convincing history of ischaemic pain on rest. Although there was a description of "foot pain" this was over the arch of the foot and there was no suggestion that it had initially come on nocturnally. Furthermore, it was suggested by, for example, Dr Stevens that the typical pain arising from ischaemic foot pain is excruciating and requires very strong analgesia probably morphine based. Pain of this magnitude appears never have been described.

iv) There were also other findings which militate away from Mr Heather's theory of causation: Nurse Parslow obtained a history that the calf pain was much improved and had followed the foot pain, which would be directly contrary to the mechanism proposed by Mr Heather. Furthermore, Dr Burne noted that the inferior calf muscle was "tender" where it meets the Achilles tendon, not a finding to be expected with Mr Heather's mechanism. When the Claimant saw Dr Devonshire, she did not complain of pain in the calves at all but foot pain and Dr Devonshire found a very swollen lateral malleolus causing her to suspect a mechanical problem and make an orthopaedic referral.

60. In the light of the above, in my judgment the only truly unifying theory of causation is that proposed by Professor Beard. This is the only explanation which is consistent with the finding of the foot pulses, with the acute episode on 6 May, with the lack of a true history of intermittent claudication and, perhaps most importantly, with a foot/leg which the experts agreed was doomed after May 2012 and which was becoming ischaemic, which developed an ulcer, but which remained warm and with a preserved pedal pulse: the only rational explanation is that the disease in the foot was working up from the bottom, with the micro-emboli blocking the arioles and the foot becoming increasingly sloughy and painful to walk on but with the rest of the leg normal and well-perfused. For these micro-emboli to have been thrombic rather than atheromatous is, it appears, vanishingly rare, but it is the only conclusion that can be reached once the experts have agreed, as they have, that the problem was one of thrombo-emboli and not atheroma.

61. It follows that had Dr Burne, or Dr Devonshire or Dr Halcro examined and checked the pedal pulses, they would have been found to be present and strong and there would have been no vascular referral. Equally, I find that there was no true history of intermittent claudication, again militating away from a vascular referral. Finally, I find that there was no history of ischaemic foot pain at rest to be obtained and therefore, again, there would have been no indication for an urgent vascular referral.

Dr Jackson: causation

62. In relation to Dr Jackson, it remains admitted that there should have been an urgent vascular referral by her after she saw the Claimant on 11 June 2012. By this time, it is agreed between the vascular experts that it was too late to save the Claimant's left leg. However, I need to consider whether the vascular surgeons would have initiated anti-coagulation so as to have avoided the upper limb ischaemia in July 2012 and the need for amputation of the Claimant's left arm.

63. In this respect, it seems necessary to me to put oneself in the diagnostic position of a reasonable vascular surgeon faced with an apparently ischaemic and painful foot, but with preserved pedal pulses, no history of intermittent claudication and without the classical sign of foot pain at rest, particularly at night. It seems to me that such a vascular surgeon would have been able to exclude PAD (or the pedal pulses would have been lost) and would be driven down the road of a micro-embolic cause. Initially, an atheromatous explanation would have been suspected, but investigations for atherosclerosis would have been negative, as they in fact were. What other explanation could there be? In my judgment, the best clue would have been what happened on 6 May. It is to be hoped and expected that the paramedics' notes would have been included in the medical records and examined. The explanation for 6 May, in the absence of atheroma, could only have been an arterial macro-embolus which transiently occluded the blood supply to the leg, but which quickly fragmented and dispersed, and as the experts agreed, the commonest type of arterial embolization to the legs is thrombo-embolism. Thus, a thrombo-embolic cause would have promoted itself to the top of the differential diagnosis, and anticoagulation would have been initiated. This probably would not have been for a little while after referral, to allow for investigations to be carried out (for example into atherosclerosis) but after those investigations had proved negative, I find that anticoagulation would have been instigated, and this would have been in time to have avoided the embolic occlusion of the Claimant's left arm. With urgent referral by Dr Jackson on 11 June, the Claimant would probably have been

seen within about a week, and there would have then been an approximate 3 week window for the doctors to appreciate that anticoagulation was appropriate.

64. There is, of course, a doubt whether anticoagulation would have been appreciated as the appropriate treatment and whether, if it had, it would have been in time. It seems to me that it is only fair and just that this doubt should be resolved in the Claimant's favour, as it was the Third Defendant's admitted breach of duty which deprived her of this opportunity. There is, in this area of the law, no scope for damages to be awarded on the basis of "loss of a chance": see *Gregg v Scott* [2005] 2 A.C. 176 and resolution of the issue is on an "all or nothing" basis, determined on the balance of probability. In my judgment, in resolving issues of detail such as how long it would have taken for the Claimant to be seen, how long it would have taken for investigations to be carried out and when a competent vascular surgeon would have appreciated that anticoagulation was the appropriate treatment, the court should err in favour of the Claimant where it is the Defendant's negligence which deprives the court of the best evidence and causes the need to delve into this hypothetical world.

65. This approach has support from the decision of the Court of Appeal in *Keefe v Isle of Man Steam Packet Co* [2010] EWCA Civ 683 and *Raggett v King's College Hospital* [2016] EWHC 1604 (QB) per Sir Alastair MacDuff. *Keefe* concerned a claim for noise-induced hearing loss. The Court of Appeal held that the Claimant had been prejudiced by the fact that a Defendant had failed to take noise surveys, in breach of duty, thereby causing an evidential lacuna in relation to the nature and extent of the noise to which the Claimant had been exposed. At paragraphs 19 and 20 of the judgment, Longmore LJ said:

> "19. If it is a defendant's duty to measure noise levels in places where his employees work and he does not do so, it hardly lies in his mouth to assert that the noise levels were not, in fact, excessive. In such circumstances the court should judge a claimant's evidence benevolently and the defendant's evidence critically. If a defendant fails to call witnesses at his disposal who could have evidence relevant to an issue in the case, that defendant runs the risk of relevant adverse findings see *British Railways Board v Herrington* [1972] AC 877, 930G. Similarly a defendant who has, in breach of duty, made it difficult or impossible for a claimant to adduce relevant evidence must run the risk of adverse factual findings. To my mind this is just such a case.
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> 20. This has been accepted law since *Armory v Delamirie* (1721) 1 Strange 505, the famous case in which a chimney sweep found a jewel in a chimney and left it with a pawnbroker for valuation. The pawnbroker, in breach of duty, failed to return it and could not be heard, when sued, to assert that the chimney sweep could not prove its value. The court awarded the highest sum realistically possible. A bailee's duty towards his bailor is, of course, different from an employer's duty to his employee but breach of the latter duty is not necessarily less serious than breach of the former."

66. Similarly, in *Raggett*, the Defendants' breach of duty had resulted in early amputation of the Claimant's leg and an issue arose as to how long the leg would have survived, but for the breaches of duty. Applying the same principle, Sir Alastair MacDuff took a benevolent approach to the evidence when he considered for how long the leg would have remained patent, and therefore viable.

67. For the above reasons, I find that causation is established against the Third Defendant, Dr Jackson in relation to the arm alone, thus entitling the Claimant to damages in the agreed sum of £150,000.

Conclusion

68. For the reasons stated in this judgment, the claim is dismissed against the First, Second and Fourth Defendants. However, there shall be judgment for the Claimant against the Third Defendant in the sum of £150,000.