DR RAPHAEL A PERRY DM FRCP FACC BSc
Consultant Cardiologist & Specialist in Interventional Cardiology

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Please send all correspondence to the Cardiothoracic Centre
Miss G Gowing – PA to Dr Perry - Ext 1399
Direct Line – 0151 600 1399 Direct Fax 0151 600 1696
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Our ref:	***RAP/GG/*****/***
Date:	***14th July 2012***
Client:	***Mr ************
Address:	
DOB:	********
Age:	***59***
Requesting Solicitors:	**********
Reporting Doctor:	***Dr RA Perry, Consultant Cardiologist***
Place of Examination:	***Liverpool Heart and Chest Hospital*** ***Thomas Drive*** ***Liverpool*** ***L14 3PE***
Date of Examination:	***14th July 2010***

APIL EXPERT

Medical Report

*This constitutes a medical report on the above named Mr ****** ****, carried out at the request of Initially ****** Solicitors, and subsequently ******** Solicitors. The documents available to me were:*

- *Original instructing letter*
- *Witness statement of Mr *******
- *Copies of appropriate medical records*
- *X-rays as indexed*
- *Protocol to the treatment of myocardial infarction from ****** NHS Foundation Trust*

1 Outline of issues surrounding case

1.1 This gentleman who at the time of the incident was 59 years of age had previously been fit and well and undertook regular sports activities. While exercising on a rowing machine he developed chest pain radiating to his arms and an ambulance was called.

1.2 A diagnosis of hyperventilation was made by the paramedics and an attempt was made to carry out an electrocardiogram (ECG), though due to an apparent fault on the machine, this was not possible. He was not taken to hospital. He remained unwell and some days later attended his general practitioners surgery. At that point an electrocardiogram was carried out and the correct diagnosis of myocardial infarction (heart attack) was made.

1.3 He was then admitted hospital, and an attempt was made to unblock his coronary artery that had caused the heart attack, but was unsuccessful. He suffered some complications with his illness and treatment. He was discharged home but continued to suffer a number of cardiac and non cardiac symptoms. The full medical history will be outlined below.

2 Review of Witness Statement

2.1 This gentleman was normally fit, and had completed in national solo sailing championships two months prior to his heart attack. He was self employed and worked as a driving instructor.

2.2 As stated above, he developed chest pain on his rowing machine, and he described his arms as "feeling strange". His wife described him as looking grey. While waiting for the ambulance he collapsed on the floor but did not lose consciousness.

2.3 The diagnosis of hyperventilation was made. The standard treatment of re-breathing expired air was administered, which in fact made his pain worse and did not help him, and the ECG machine did not function.

2.4 The gentleman was told it did not matter as the paramedic did not feel that the problem was related to his heart. It was stated that he still had pains in his chest and his arms felt numb. He felt unwell for the subsequent week and was then admitted to hospital as above. The medical details will be described below.

2.5 Other salient features from the statement are that he has had complication of bleeding, secondary to some of his medical treatment. He has had to see a clinical psychologist and has suffered with anxiety and anger

2.6 He has returned to work on reduced hours, and feels significantly less well than prior to his heart attack. He is unable to enter sailing competitions.

3 Review of Hospital Notes in document bundle

*3.1 He was admitted to****** hospital on 14th October from his GP's surgery, after initially sustaining the chest pain on 5th October. The electrocardiogram on admission to hospital clearly showed characteristic changes of recent heart attack, and he was admitted and started on appropriate medical treatment and nursed on the coronary care unit. He was monitored closely and developed some intermittent slowing of his heartbeat, which is not uncommon after this type of heart attack. It may on occasion require the insertion of a pacemaker.*

*3.2 He was reviewed by Dr **** the consultant cardiologist, and a decision was taken to try and open up the presumed blocked coronary artery that had caused the heart attack, in an effort to try and improve blood flow to the portions of the heart and stabilise the irregular heartbeat. Normally this treatment which is called angioplasty, stenting or PCI, would have been carried out immediately that he had developed the chest pain, as the success rates are much higher the sooner patients are treated.*

3.3 Unfortunately as the artery had been blocked for over a week, it proved technically impossible to open up the artery. There was an opportunity to examine the rest of the heart which showed that there had been a heart attack on the inferior surface of the heart impairing the pumping action of the heart overall. The other coronary arteries around the heart were only mildly diseased and did not require any immediate surgical or angioplasty treatment. The estimate of the pumping action of the heart at the coronary angiogram or x-ray examination was around 32%. A subsequent ultrasound scan during the same admission showed this was around 45%.

3.3 Although there is a slight discrepancy between the two measures made by different means, clearly this was lower than the normal measure for the ejection fraction or pumping action of the heart, which should be over 60% in normal individuals. His admission was relatively uncomplicated thereafter at this stage. He was started on appropriate medical treatment including the drugs Aspirin and Clopidogrel which thin the blood, Ramipril which relieves some of the pressure on the heart and allows healing of the damaged portion, Simvastatin which is a cholesterol lowering medication, and he was given Losec to reduce the acid in the stomach which can be aggravated by the blood thinning agents Aspirin and Clopidogrel. Quite appropriately at this time he was not put on a beta blocker tablet which is normal treatment after a heart attack. This is due to the fact that beta blockers can slow the heart, and his heart rhythm was already somewhat slow.

3.4 His heart rhythm recovered back to normal by the time he had had a tape recording of his heartbeat, and he did not suffer as far as I am aware any further heart rhythm disturbances.

3.5 On 26th November 2008, he had some rectal bleeding, which was almost certainly due to an underlying predisposition and his treatment with Aspirin and Clopidogrel. This was treated by colonoscopy and banding on 6th March 2009 which appears to have been successful. He attended cardiac rehabilitation and subsequently needed increased medical treatment for his symptoms of chest pain.

*4 **Review of General Practitioners Notes***

4.1 The general practice records confirm that he had been generally well until the time of his heart attack. He was an ex smoker having stopped in 1998. Other than that he had had few risk factors for heart disease.

4.2 He had had some recurrent chest pain, and in June 2009 his GP prescribed a beta blocker Bisoprolol 1.25mg daily which has improved his day to day symptoms of chest pain. He continues with his other medication as above.

*5 **Review of Ambulance Record***

5.1 The ambulance was called at 13.39 on 5th October. It arrived at 13.53 and left at 14.22. This was a rapid response vehicle. In the documentation the presenting condition code is clearly hyperventilation. His respiratory rate is noted at 32bpm, and his pulse at 100bpm. The normal respiratory rate at rest is 14-16 breaths a minute, normal pulse rate is around 70-80bpm.

5.2 The pain score is rated at 4-7 out f 10. It is clearly stated that he had no" pins and needles", but both arms were aching. He is described as looking pale, clammy and sweaty.

5.3 In the paramedics statements, it is clearly stated there was lack of familiarity with the ECG machine. There was a question that the family declined hospital admission, but this doesn't appear to be substantiated elsewhere in the bundle that I can see.

6 Diagnosis and Treatment of Heart Attack

6.1 The diagnosis of heart attack is based on a cluster of typical symptoms of cardiac sounding chest pain, characteristic changes on the electrocardiogram, and elevation of cardiac enzymes in the blood indicating damage to myocardial tissue.

6.2 The pain is described as central, tight and severe often radiating to one or both arms and into the jaw. Other symptoms include sweating and looking pale and clammy. These symptoms tend to be all present at the onset of the heart attack.

6.3 The characteristic electrocardiographic changes of heart attack are due to the elevation of the ST segment of the electrocardiogram and are highly characteristic. Smaller heart attacks can occur with lesser changes on the ECG, but the traditional ST elevation myocardial infarction (STEMI) pattern should trigger an urgent transfer to a hospital where appropriate therapy with either clot busting drugs, or angioplasty and stenting to open blocked arteries should be administered. The ECG changes are not necessarily immediate and do evolve, though are generally present within 20-30 minutes of the onset of pain. The cardiac enzymes are not generally measured around 12 hours since the onset of pain and are used to confirm the diagnosis, or to make the diagnosis in smaller heart attacks where the ECG has not been characteristic.

6.4 Hyperventilation is a syndrome of over breathing generally due to panic, and severe anxiety. While it is documented that over breathing can cause atypical pain in the chest, and may cause pins and needles in the fingers, the symptoms are quite distinct from those of a heart attack as described above.

6.5 Hyperventilation is extremely unusual during significant exercise for physiological reasons which I will not discuss in detail here. It is also uncommon for hyperventilation to occur in the absence of significant anxiety. The treatment for hyperventilation is re-breathing carbon dioxide as was carried out in this case, and usually leads to prompt resolution of the symptoms.

7 Issues of Negligence

7.1 These mainly concern two areas. Firstly the erroneous diagnosis, and secondly, the failure to carry out the electrocardiogram.

7.2 While misdiagnosis can clearly occur through individual fault, I think that the features of the clinical presentation here are so clear from the evidence presented to me, that any reasonable body of medical opinion would have considered heart attack as the primary diagnosis on likelihood. This was a 59 year old man who although he had been well, was exercising when he developed fairly typical cardiac symptoms, including pain in the arms rather than pins and needles. Indeed the observations in the notes state there was no pins and needles. From the description of his relatives, he clearly looked unwell, which is not a feature of hyperventilation.

7.3 Given the gravity of the differential diagnosis in that hyperventilation is an extremely condition, myocardial infarction is not. Clearly steps should have been carried out to confirm or refute the diagnosis properly, and I think even if an ECG had been carried out and had been normal at this stage, the failure of the re-breathing treatment and the continued pain in the chest and arms, should have prompted a further opinion, or a repeated ECG at a later time interval.

7.4 The failure to be able to operate the ECG machine is down to individual training. I have no doubt that if an ECG had been carried out, and the characteristic abnormalities of a heart attack had been seen, this would have prompted appropriate treatment by the paramedics, and a rapid transfer to hospital for urgent hospital treatment.

7.5 The failure to make an appropriate diagnosis and carry out an ECG led to this gentleman having a more sizeable heart attack, and being denied appropriate medical and interventional treatment which would have improved his day to day symptoms and his immediate survival and long term prognosis.

7.6 There is little doubt in my mind that the inappropriate diagnosis and failure to carry out an ECG appropriately by the paramedics would be considered negligent by a reasonable body of medical opinion.

8 Prognosis

8.1 The prognosis after a heart attack is highly dependent on a number of individual factors such as the site of the heart attack and previous medical history and co-morbidity. There was no doubt that the more rapid the treatment for heart attack, the better the overall prognosis.

8.2 In the first 12 months after a heart attack around 20-30% of patients will die, or have a second heart attack. Again depending on the treatment they may have received and the timeliness thereof, thereafter the prognosis is around 10% in the second year, and thereafter the event rate is around 3% per year.

8.3 Clearly we know in this case that the gentleman has survived now almost 2 years since his heart attack, though has been symptomatic and has had a number of other issues such as his psychological problems and his reduced ability to work.

8.4 Looking at life tables, life expectancy of a man of 60 is 19.6 years. I would estimate that his has been lessened in this case by around 7 years. This is dependent of course on his future treatment and interventions that might be appropriate, and is based on an average.

8.5 The normal treatment in 2010 for ST elevation myocardial infarction is angioplasty and stenting, and if this had been carried out promptly in the long normal guidelines, his prognosis would have been improved, and although its very difficult to be precise with these issues, we know that the treatment with PCI is significantly better than no medical treatment at all, such that on average the in-hospital mortality after an angioplasty after a heart attack is around 3-4% compared to those who receive no clot busting drug or angioplasties around 12-15%. I think it would be reasonable to assume that his reduction in life expectancy would have been 2-3 years rather than 6-7 years had he had appropriate prompt treatment.

9 Detriment

9.1 He has clearly had a great deal of anxiety and worry over his illness, and had a more protracted hospital stay and further investigations that might well have not been necessary had he been treated promptly.

9.2 The question of his rectal bleeding however is not relevant to any consideration of negligence. If he had been admitted promptly and had angioplasty and stenting he would have been on Aspirin and Clopidogrel in any case, and bleeding is a recognised complication of Aspirin therapy.

9.3 He has been unable to work fulltime, and clearly not been able to undertake his normal recreational habits. It is difficult to say that had he sustained a heart attack that had been treated promptly, whether he would have been in a better position to resume sailing and normal activities.

10 Summary

10.1 This gentleman sustained a myocardial infarction which was mis-diagnosed by the attendant paramedic, who also failed to properly carry out an electrocardiogram.

10.2 As a result of this which I will regard as negligent, he sustained a more significant heart attack and was denied appropriate urgent treatment.

10.3 As a result he has suffered a greater detriment and greater reduction in his overall prognosis.

Signed ……

Dated ……

I DR RAPHAEL ADAM PERRY, DECLARE THAT THE FACTS I HAVE STATED IN THIS REPORT ARE TRUE AND THAT THE OPINIONS I HAVE EXPRESSED ARE CORRECT.

Re:

1. *I understand that my primary duty in writing reports and giving evidence is to the Court, rather than the party who engage me.*

2. *I have endeavoured in my reports and in my opinions to be accurate and to have covered all relevant issues concerning the matters stated, which I have been asked to address.*

3. *I have endeavoured to included in my report those matters which I have knowledge of or of which I have been made aware, that might adversely affect the validity of my opinion.*

4. *I have indicated the sources of all information I have used.*

5. *I have not without forming an independent view included or excluded anything, which has been suggested to me by others (in particular my instructing party).*

6. *I will notify those instructing me immediately and confirm in writing if for any reason my existing report requires any correction or qualification.*

7. *I understand that:*
   - *a* *my report, subject to any corrections before swearing as to its correctness, will form the evidence to be given under oath or affirmation.*
   - *b* *I may be cross-examined on my report by a cross-examiner assisted by an expert.*
   - *c* *I am likely to be subject of public adverse criticism by the judge if the Court concludes that I have not taken reasonable care in trying to meet the standards set out above.*

8 *I confirm that I have not entered into any arrangement where the amount of payment of my fee is in any way dependent on the outcome of the case.*

Signed ……..

Date ……..

APIL EXPERT

DR RAPHAEL A PERRY DM FRCP FACC BSc
Consultant Cardiologist & Specialist in Interventional Cardiology

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Please send all correspondence to the Liverpool Heart and Chest Hospital

Our Ref: ***RAP/DM/***
Your Ref: ***FKL2/SC7/368488.1***

Fee note

14th July 2010

Dear

Re:

Fee for Medical Report:

Total:

Yours sincerely

Dr RA Perry
Consultant Cardiologist

- ***Hospital:*** ***Cardiothoracic Centre, Thomas Drive, Liverpool, L14 3PE***
  Telephone ***0151 600 1399*** ***Hospital Fax:*** ***0151 600 1696***
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