Failure to diagnose: long QT syndrome

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This article examines a medical negligence claim involving an allegation of failure to perform an electrocardiogram, leading to a delay in diagnosis of long QT syndrome.

Case history

On 4 September 1995, Kurt, then aged 12 years, collapsed at home. His father took him to the local hospital where he was seen by his general practitioner, Dr D. The GP performed a physical examination, which was normal. Blood tests revealed an elevated prolactin level and Dr D made a provisional diagnosis of a seizure. He referred Kurt for an electroencephalogram (EEG). This was normal. Dr D then referred Kurt to a paediatric neurologist. In his referral letter to the neurologist, Dr D described the events on 4 September 1995 as an 'episode which was not typical of a grand mal seizure but which I thought may have been a complex partial seizure'.

Following his consultation with Kurt, the neurologist wrote back to Dr D: 'The presenting problem is of an event that took place recently, when he had been generally unwell through the day. It sounds as though it might have been a viral illness, and he was off his food. His father made him some lasagne, which he usually liked, and he was sitting down to eat it about 7.30 pm, when he felt that it tasted unpleasant, and at that stage he looked very pale and his head slipped forward, and he fell out of his chair. He was on the ground briefly, for about 30 seconds or so, and there was no stiffness or jerking. He woke a bit confused and he had a bit of a headache. He had been vomiting through the day.

He had no past history of fainting or seizures, and there is no family history of fainting. His mother has a history of temporal lobe epilepsy since 33 years of age.

In the presence of the normal EEG, with an event that really sounded as though it could have been a faint, I would be inclined to think of this as a faint and not a fit. I think that the elevated prolactin levels can occur in other events that lead to unconsciousness, but do not have to be actually convulsions...

I think we should regard this as being a faint, not a fit, and consider it a one-off. If he does have further events that are not related to situations that might produce a faint, then it would be worthwhile repeating his EEG, but I think we should get it done with him asleep, and that would probably require sleep deprivation'.

On 29 August 1997, the patient saw Dr D who noted: 'Episodes of light headedness followed by nausea. Dream-like state at beginning'. Dr D organised a sleep deprived EEG on 23 September 1997 which was normal.

Kurt started to experience severe headaches. Dr D diagnosed migraine headaches and prescribed Imigran.

On 29 June 1998, Kurt was unwell and did not attend school. His grandfather took him to see Dr D. On arrival at Dr D's surgery, Kurt collapsed. Dr D's medical records for this consultation simply noted 'migraine'. Later that day, the patient was taken by his parents to hospital and he was seen again by Dr D. The presenting symptoms were recorded as: 'migraine, vomiting, febrile'. Kurt was admitted overnight and discharged from hospital the next day.

Kurt experienced a particularly severe headache in late January 2001 and he remained lethargic and tired. An appointment was arranged with Dr D on 1 February 2001. At this consultation, Dr D conducted a physical examination that included a cardiovascular examination. Dr D noted a heart murmur and made the following notes: '2/6 pansystolic murmur radiating to the axilla... mitral type murmur – arrange for CXR'. Kurt had the chest X-ray on 2 February 2001 and this was reported to be normal.

The essence of the plaintiff's claim was that Dr D should have identified Kurt as having a cardiac problem before he suffered the catastrophic cardiac arrest on 11 February 2001. The plaintiff submitted that there were a number of occasions when Kurt's symptoms should have caused Dr D to refer Kurt to a cardiologist for assessment. It was also submitted that Dr D should have ordered an electrocardiogram (ECG) on 4 February 2001 after the further syncopal event and detection of a heart murmur. It was contended that if either of these steps had been taken, Kurt's cardiac irregularity of long QT syndrome would probably have been identified and appropriate treatment put in place, which would have averted his catastrophic injuries.

The claim proceeded to trial in August 2006 and a decision was handed down on 1 December 2006. The judge concluded that, on the balance of probabilities, if Dr D had performed an ECG on or after 4 February 2001 then Kurt's long QT syndrome would have been revealed and, if this condition had been diagnosed, then the cardiac arrest would not have occurred.

The judge awarded Kurt $8 086 000.00 and his parents were awarded $700 000.00 in damages.[1]

On 4 February 2001, Kurt, now 18 years of age, collapsed again. His parents took him to an emergency department (ED). The medical officer in the ED noted the following history: 'Has been unwell with lethargy and fevers. Saw GP 2/7 ago – provisional diagnosis viral illness. Has remained unwell. Tonight got up to get a drink of milk and felt dizzy and ? fainted. Father caught him and he had some stiffening of limbs and then went limp. LOC 30 seconds. OE: alert, oriented, not postictal, no neck stiffness, sweaty, chest clear, ENT NAD. PD: viral illness with faints, but need to observe for seizures'.

On 5 February 2001, Dr D reviewed Kurt in hospital and performed a physical examination. He recorded 'syncopal episode with seizure on the background of viraemic symptoms. Pulse 80, afebrile'. Blood tests ordered on admission revealed a diagnosis of glandular fever. Dr D decided that Kurt could be discharged home with repeat blood tests later that week.

On 7 February 2001, Kurt began to vomit and appeared to be dehydrated. His father again took him to hospital. The ED medical officer noted: 'Readmitted with glandular fever. Concentrated urine. Allergies: nil. On examination, red throat, tongue coated. Tenderness upper abdomen. Treatment – IV fluid, nilstat, oral Phenergan'.

On 8 February 2001, Dr D reviewed Kurt in hospital. He noted: 'Somewhat unwell. Possible jaundice. Fever overnight. Proteinuria. For repeat bloods, 24 hour urine, urinary red blood cell morphology. MSU. Note: one positive blood culture. Start IV Keflin'. Dr D rang the infectious diseases department at the local tertiary hospital for advice in relation to Kurt's positive blood culture. He was advised that the organism detected was very unlikely to be pathogenic and, if there were no signs of endocarditis, it would be prudent to repeat the blood culture after a short course of antibiotics. Dr D reviewed Kurt the next day and noted: 'Much improved. Reduce IV fluids. Cervical nodes. ? discharge this evening'.

On 10 February 2001, Kurt was anxious to go home. He was reviewed by Dr D who agreed to discharge him from hospital. There was no record of a physical examination having been performed that day. In the early hours of the morning on 11 February 2001, Kurt suffered cardiac arrest. His father commenced CPR and called an ambulance. Kurt was taken to the local hospital and from there he was taken by helicopter to a tertiary hospital. Notwithstanding the treatment he received, Kurt suffered significant hypoxic brain damage.

The patient and his family subsequently commenced legal proceedings against Dr D alleging he was negligent in his treatment of Kurt between 1995 and 10 February 2001.

Discussion and risk management strategies

In many claims, there often exists a factual dispute between the plaintiff and the defendant regarding their recollection of the events leading to the claim. Expert opinion obtained will be based on the factual assumptions put to the expert. Where the factual assumptions differ, expert opinions will often differ. In this case, five GPs, four cardiologists and one emergency physician gave evidence at the trial. Three GPs gave evidence on behalf of the defendant, Dr D. The judge concluded that to the extent that the opinions of the GPs called by the defendant differed from those of the plaintiff, this resulted from incorrect assumptions about the facts and a failure by the experts to consider Kurt's symptoms as a whole. In particular, the defendant GPs' opinions were based on the fact that Dr D could not have detected a pansystolic murmur on 1 February 2001. When the three defendant GP experts were asked to assume that Dr D had, in fact, heard a heart murmur, the GPs conceded that a chest X-ray was not an appropriate investigation and an ECG and/or echocardiogram should have been performed.

The judge also found that Dr D's medical records for the consultation with Kurt on 29 June 1998 which comprised the single word 'migraine' could 'never constitute a 'detailed history' commensurate with a GP's standard of care'. On this basis, the judge preferred the recollection of Kurt's family of the events in June 1998, rather than Dr D's recollection of the events.

Conflict of interest: none.

Reference

1. Halverson & Ors v Dobler [2006] NSWSC 1307.

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