Case 5 Bad luck or bad judgement

Daphne Hardcastle is a 52-year-old publican who presents to the Emergency Department following an episode of left-sided weakness and slurred speech. Her symptoms, which lasted for approximately 40 minutes, have fully recovered upon arrival. Mrs Hardcastle's blood pressure is 168/94. Her pulse is 75 and regular. Mrs Hardcastle is a smoker and drinks approximately 40 units of alcohol per week. She is a driver and lives with her husband and three dogs. She is assessed by Dr Wilde, an FY2 doctor in the Emergency Department.

How should Dr Wilde manage Mrs Hardcastle?

Dr Wilde makes a brief assessment of Mrs Hardcastle and establishes that there is no persisting neurology. Heart sounds are normal, blood pressure measurements remain in the region of 160 mmHg systolic and the cardiac monitor shows a regular rhythm. Capillary blood glucose is normal at 5.4 mmol/l. Dr Wilde draws bloods and sends them for routine measurements and a random total cholesterol. She calculates an ABCD^2 score of 4 which places Mrs Hardcastle at moderate risk of stroke in the next 48 hours. Dr Wilde faxes a referral to the TIA clinic and advises Mrs Hardcastle to report at 09.00 am the next day according to the Trust's protocol. Dr Wilde elects not to actively manage blood pressure, expecting it to be checked and followed up the next morning in clinic. Dr Wilde gives Mrs Hardcastle a single dose of aspirin 300 mg and discharges her with reassurance. She explains that Mrs Hardcastle must not drive for a month following the index event.

Has Dr Wilde's management been appropriate? Is there anything else that you would have done?

Mrs Hardcastle's husband is awoken at around 2.30 am by loud grunting noises. Mrs Hardcastle has fallen out of bed and is lying on the floor. She is making some effort to get up but seems unable to move her right-hand side or speak. She does not seem to notice her husband as he approaches from the right to help her and appears to be drifting in and out of full consciousness. He calls an ambulance which attends within minutes. Mrs Hardcastle is blue lighted to the Emergency Department, arriving 20 minutes later.

How should Mrs Hardcastle be managed?

Mrs Hardcastle is seen by Dr Phillips, a registrar, who makes a clinical diagnosis of a left total anterior circulation syndrome. He speaks to the acute stroke team but it is decided that the time of onset is not clear and could have occurred at any time after Mrs Hardcastle had gone to bed that evening. Hence, she is not eligible for thrombolysis. Mrs Hardcastle's blood pressure is 176/90 and an ECG reveals fast atrial fibrillation. The chest is clear. Following a failed swallow screen, Mrs Hardcastle has a nasogastric tube inserted. She is given low dose metoprolol for rate control and transferred to the stroke unit. Six hours after admission, she has a CT scan of the brain which demonstrates established infarction throughout the entire left MCA territory.

Could Mrs Hardcastle have been managed any differently over this 24-hour period? Are there any further interventions that ought to be considered?

Expert opinion

Mrs Hardcastle's management by Dr Wilde was generally good. An appropriate assessment was made and an evidence based risk tool was then utilized to determine further management and the urgency of specialist review. Dr Wilde would have expected Mrs Hardcastle

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BLBK446-Part02_Case05 BLBK446-Reckless Trim: 244mm x 172mm Printer: Yet to Come November 21, 2012 13:56

to access brain and carotid imaging in the rapid access TIA clinic the next morning. With a blood pressure measurement in ED of 168/94, arguments could be made either way in relation to the urgency of commencing an anti-hypertensive agent. With the safety net of a clinic appointment within 24 hours and the expectation that this would be followed up, most physicians would have acted as Dr Wilde did. With the full resolution of symptoms (and a diagnosis of TIA), it is appropriate to commence aspirin prior to brain imaging. It is important to recognize however that a small proportion of patients presenting clinically with a TIA will have experienced minor intra-cerebral haemorrhage. The only criticism that can be made of Dr Wilde's management is the lack of a documented electrocardiogram. One wonders whether Mrs Hardcastle might have been in atrial flutter at the time of initial assessment which, in the context of TIA, would have led to immediate anticoagulation. However, commencing warfarin on the first attendance in ED would not conceivably have altered the outcome here.

In relation to ongoing management, Mrs Hardcastle should be urgently assessed by stroke specialists. Given her clinical state and the radiological findings, she is at high risk of malignant MCA syndrome. In this syndrome, oedema causes further damage to other areas of the brain including the ACA territory and the hindbrain. It carries mortality in excess of 50%. Mrs Hardcastle ought to be considered for neurosurgical intervention in the form of hemi-craniectomy.

Legal comment

The criteria for a finding of negligence in English tort law are the existence of a duty of care, a breach of that duty of care and a foreseeable injury occurring as a result of the breach. All three elements must be fulfilled if a patient is to succeed in being entitled to compensation.

In English tort law a doctor is not deemed negligent if he/she acts in accordance with the opinion of a responsible body of medical practitioners, skilled and practised in that art. The 'Bolam' test has more recently been adjusted by the requirement that a medical opinion must also be 'reasonable' and based on evaluation of the risks and benefits associated with a particular procedure to be capable of withstanding logical analysis.

Where clinical opinion conflicts, a judge reviewing the case must assess the rationality of the two opinions. The courts recognize that professional opinion may be divided in terms of a more conservative or more interventional approach and due consideration must be given to the different modes of medical management which may apply to the same clinical specialty; even if one accepted management course is pursued only by the minority of doctors.

An adverse outcome in the course of medical treatment can be unforeseen. Despite appropriate clinical management of the patient there may be an adverse outcome. Adverse outcome is not necessarily the indication of poor/negligent care.

Where there has been an adverse outcome and there is thought to have been a breach of duty of care, there must be an established causal link with the alleged breach of duty in order to prove negligence. It is necessary to establish that the adverse outcome would not have occurred as a result of the natural progression of the disease, and was not a foreseeable and accepted complication of treatment, despite all appropriate care. When investigating a case one will often find examples of suboptimal practice that do not impact upon outcome but investigation is still important to undertake a root cause analysis for the purpose of organizational learning.

Where injuries are caused by a failure to act, it is necessary to evaluate the likely natural progress of the untreated condition and to establish what, as a fact, would have occurred but for the negligent act. If the adverse outcome was determined before the negligent intervention, or if the adverse outcome was to have been more likely than not in any event; then the claim will fail. However, if there was a greater than 50% chance, on the balance of probability, of a good outcome but for the negligent failure to act, the patient would be successful in obtaining damages.

Key learning points

Specific to the case

- The risk of stroke following TIA is in large part related to carotid stenosis, hypertension and atrial fibrillation.
- Evidence-based algorithms to can be useful in determining the appropriate urgency and venue for ongoing investigation and treatment.

General points

- Clinical care is only negligent if a duty of care is established, that duty of care is breached, and a

BLBK446-Part02_Case05 BLBK446-Reckless Trim: 244mm x 172mm Printer: Yet to Come November 21, 2012 13:56

foreseeable injury occurs as a result of that breach.

- The *Bolam* test assesses whether an opinion or course of action taken is supported by a responsible body of medical practitioners.

Reference

Johnston SC, Rothwell PM, Nguyen-Huynh MN *et al.* (2007) Validation and refinement of scores to predict very early stroke risk after transient ischaemic attack. *Lancet*, 369: 283–92.

Case 6 An opportunity missed

Samantha Jenkins, 36, has been referred to the medical take by her GP with generalized fatigue, weakness and some lumbar pain. She last felt well four or five days ago. The GP's working diagnosis is of pyelonephritis although Ms Jenkins is apyrexial and urinalysis is normal.

Dr Wilkins, the on-call registrar, takes a history from Ms Jenkins who works as a police officer and usually enjoys good health. She has a three-year-old daughter who is looked after by her mother-in-law when she is at work. Ms Jenkins has mild asthma which seems to be seasonal and she has not needed salbutamol at all in the last six months although has felt more short of breath over recent days. Ms Jenkins describes a deep aching sensation over her lumbar spine which has been present for 48 hours, and generalized weakness and lethargy. It has become a real effort to climb up and down the stairs at home, so much so that she has started to use the downstairs toilet even though her husband is in the middle of decorating the room.

Systems enquiry reveals a bout of diarrhoea ten days earlier which Ms Jenkins had put down to a take-away meal.

What is your differential diagnosis and how will you proceed?

Dr Wilkins examines Ms Jenkins. Her nursing observations are within normal limits apart from a respiratory rate of 24 per minute. Chest, cardiovascular and abdominal examination is unremarkable. Ms Jenkins is able to stand and walk unaided. The registrar makes a diagnosis of a nonspecific viral illness and sends routine blood tests. These demonstrate a sodium level of 128 mmol but are otherwise normal. Ms Jenkins is discharged home to rest with free oral fluids and regular paracetamol.

What are your thoughts?

Ms Jenkins represents to the Emergency Department 36 hours later, and is clerked in by Dr Al-Hamdi, a core medical trainee. Ms Jenkins states that she has become so weak that she can no longer get up from a chair. Her speech has become slurred over the last few hours. On examination, she has a respiratory rate of 30, a mild facial droop and is drooling saliva. Her chest is clear and she is generally weak although this seems most profound in the distal lower limbs. Dr Al-Hamdi is unable to elicit any deep tendon reflexes.

Dr Al-Hamdi considers the possibility of Guillain-Barré Syndrome and measures Ms Jenkins's vital capacity with a handheld spirometer. It is 0.8 L. Dr Al-Hamdi seeks an intensive care opinion and Ms Jenkins is transferred to the intensive care unit for observation. Whilst there, a lumbar puncture is performed and intravenous immunoglobulin administered. Three hours after admission, Ms Jenkins is intubated because of a deterioration in vital capacity.

Ms Jenkins spends two weeks in the intensive care unit and requires a tracheostomy. She subsequently spends three months in neurological rehabilitation before discharge home. A year later, she continues to make progress, but to date she has only been able to undertake office-based duties for the police.

Expert opinion

Although the diagnosis of Guillain-Barré syndrome was eventually made and Ms Jenkins survived, it is possible that she may have followed a more benign course had her illness been recognized earlier and appropriate treatment (IVIG / plasma exchange) been instituted earlier. She might have avoided an ITU admission and her functional status at one year may have been better.

When a differential diagnosis is made always focus on those elements of the history or examination and investigations which don't 'fit', So, why was a previously well 36-year-old woman with an adequate blood pressure tachypnoeic, hyponatraemic, and subsequently unable to walk? One wonders by what mechanism Dr Wilkins

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BLBK446-Part02_Case06 BLBK446-Reckless Trim: 244mm x 172mm Printer: Yet to Come November 21, 2012 13:54

thought a nonspecific viral illness was causing these problems.

Guillain-Barré syndrome can present in a very nonspecific manner and it is sufficiently unusual that most receiving doctors in ED or emergency assessment units may not have it foremost in their minds. The average-sized hospital in the UK will deal with only around five cases a year.

Back pain is a feature of Guillain-Barré syndrome and reflects the presence of nerve root inflammation. The typical history is of ascending distal weakness with paraesthesiae and autonomic features are common. CSF examination usually reveals an elevated protein without a significant white cell count.

When Ms Jenkins was first seen, the assessment was incomplete and her classical symptoms (even though nonspecific) were not recognized for what they were. The clinical features may progress rapidly and lead to respiratory failure as respiratory muscles become affected.

Delayed treatment for Guillain-Barré syndrome is associated with a poor outcome. Ms Jenkins may have a case to seek financial recompense for any lost earnings.

Legal comment

Reimbursement of past and future loss of earnings would be included in the schedule of loss compiled by Ms Jenkins's solicitors in any legal claim. If liability is admitted at an early stage of investigation by the NHS Litigation Authority on behalf of the Trust, an interim award of damages for immediate past loss of earnings may be made to ease the financial hardship in which Ms Jenkins and her family find themselves. Ms Jenkins will of course be entitled to statutory sick pay during the initial time she is in hospital, but full pay can continue for public sector workers up to a period of six months. It is now a year since the initial incident and she has not yet returned to active police duties.

The intention of compensation is to place the claimant, so far as money is able, back in the position she would have been in, but for the negligent act. Her significant compensation is divided into general damages and special damages. Her general damages are for her pain, suffering and loss of amenity attributable to the injury. Calculation is based on annual Judicial Studies Board Guidelines, which set out a range of settlements for different types of injuries, from within which awards for a particular injury are selected. In addition, case law is used to establish or refute a particular point within any guideline range.

Special damages are losses specific to the claimant which are directly attributable to the negligence. Past losses, such as loss of earnings, can be calculated accurately whereas future losses are hypothetical. Interest on past losses are recoverable from the date of injury to the date of settlement or trial. Significant injury will potentially impact upon a patient throughout her lifetime. Although the total amount of losses calculated at the time of settlement of the claim, the patient has immediate benefit of the compensation which, but for the injury, would have taken a life term to earn.

Although Ms Jenkins may have recovered from the immediate effects of her injury by the date of settlement she may still be at a disadvantage (i.e. she has not returned to full police duties and there is a partial continuing loss of earnings, for example, through loss of overtime work). She may well be disadvantaged if in the future she were to lose her current job and find herself on the open labour market. Damages may be recovered for the weakening of Ms Jenkins's competitive position in the labour market, it does not matter that there is no immediate loss.

Ms Jenkins is also entitled to be compensated for her loss of capacity to undertake housework and to care for her child during the time when she was critically ill and for the fact that her mother-in-law looked after Ms Jenkins's three-year-old daughter more than usual. During this same time period Ms Jenkins will not have been in a position to undertake the usual contribution to the family's home life (for example, cooking and cleaning). These losses can be claimed by reference to what equivalent commercial costs would have been for a cleaner with a discount to acknowledge that these services were provided by Ms Jenkins to her close family. If Ms Jenkins' husband, as a nonprofessional, has provided care, this can also be compensated under the principles established by the case of *Housecroft v Burnett* where the needs of an injured patient have been supplied by a relative without regard to monetary reward. In this case, the loss is calculated by either the market value to employ professional help or if Mr Jenkins has given up work to look after his wife, he would have incurred actual loss of earnings.

Key learning points

General points

- Financial compensation is calculated with regard to both actual and hypothetical earnings.

Case 7 Better late than never

Jimmy Irvine, a 38-year-old man with learning difficulties, hypothyroidism and congenital heart disease is brought to the Emergency Department by his father with a 48 hour history of lethargy, fever, myalgia, headache and anorexia. He is usually cheerful and interactive and has a passion for his local football team, attending all home matches and running the line for the U16 team. The casualty officer who sees him notes that he is sweaty, tachypnoeic and un-cooperative with examination. His oxygen saturations are 89% on room air but Mr Irvine is known to have a right to left shunt and has previously been noted to be hypoxic when well.

What is your differential diagnosis?

The casualty officer believes that Mr Irvine has a lower respiratory tract infection. However, his chest X-ray is clear and the diagnosis is revised to that of a viral illness. The casualty officer advises oral fluids and paracetamol and discharges Mr Irvine to his father's care.

Three days later, Mr Irvine is brought back to the Emergency Department. His symptoms have continued but now he has now developed urinary incontinence and has been complaining of nausea. Mr Irvine is intermittently drowsy and aggressive. His temperature is 37.7°C and his pulse is 106 per minute. Blood pressure is maintained and saturations are 82% on air, rising to 86% with a non-rebreathe mask.

What investigations would you pursue and what management steps would you institute?

The medical registrar prescribes ceftriaxone and contacts colleagues in ICU in order to arrange for Mr Irvine to be intubated prior to a brain CT scan and lumbar puncture. The anaesthetist is initially reluctant to intubate Mr Irvine on account of his central cyanosis and the fact that a decision had apparently been made several years prior that Mr Irvine was not to undergo cardiac surgery. Mr Irvine then has a brief seizure and is intubated to secure his airway.

The CT scan demonstrates significant obstructive hydrocephalus with meningeal enhancement and an external ventricular drain is inserted by the neurosurgeon on-call. CSF analysis demonstrates the presence of over a thousand polymorphs. CSF protein is elevated. No organisms are seen. Subsequently *Streptococcus constellatus* is grown from the CSF.

Mr Irvine has a stormy course, requiring several external ventricular drains followed by a VP shunt and a subsequent revision. A TOE confirms a significant right to left shunt. Mr Irvine is in hospital for over three months but ultimately returns home. His function is never quite as before and Mr Irvine's elderly parents find the burden of caring for him increasingly difficult to manage. They enlist the support of a private carer on weekday afternoons to provide them with some respite.

Eight months later, the hospital receives a letter from an independent advocate asking the Trust to explain the delay in diagnosis and to state whether, if the diagnosis had been made earlier, the outcome may have been better.

How do you think the trust should reply?

Clinicians in the Trust argue that the natural history of *Streptococcus constellatus* meningo-encephalitis is very difficult to define, particularly in a patient with learning difficulties prior to the event. They consider that Mr Irvine has had a very good outcome given his original presentation.

Trust managers commission an independent external review of the case. The reviewer's opinion was that (1) initial assessment of Mr Irvine in the Emergency Department was suboptimal and did not take adequate account of his communication difficulties, and (2) had Mr Irvine been given appropriate antibiotics on the day of presentation, the outcome would likely have been better, obstructive hydrocephalus may not

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have developed and the he may not have required any neurosurgical intervention with the long-term morbidity that this can carry.

The NHS Litigation Authority negotiates an out-of-court settlement on behalf of the Trust.

Expert opinion

The diagnosis in this case was undoubtedly delayed. Although it can be difficult to obtain a comprehensive conventional history from patients with communication difficulties of any sort, Mr Irvine was clearly septic at presentation. The casualty officer was keen to attribute the source of infection to the chest on the basis of hypoxia. Even when this was not supported by the evidence (he was known to have hypoxemia when well, and no evidence of focal consolidation on the chest radiograph), the casualty officer did not attempt to go back to the beginning.

When communication is difficult and the clinical picture is complicated by pre-existing disease (in this case congenital heart disease) it can be very difficult to reach a satisfactory diagnosis immediately and a period of observation may bring some clarity. If the diagnosis is not clear at the outset then say so – putting a firm label on a problem which is in reality unclear is unhelpful and can close minds to other more likely possibilities.

Although ultimately events dictated that Mr Irvine required intubation as an emergency, initial discussions around his appropriateness for level 3 (ICU) care seem to have been rather confrontational. It was readily evident that Mr Irvine's usual quality of life was good and that the current illness was acute and potentially reversible.

As alluded to by the independent expert asked by the Trust to review the case, it is only possible to conclude that Mr Irvine's outcome may well have been better had the diagnosis been made earlier.

Legal comment

Although initial contact may have been made by an ICAS advocate, the complexity of causation and the need for expert evidence in assessing the future care requirements, means that settlement would not be by way of the complaints process but by a clinical negligence claim. Expert evidence would be required on the issue of causation to assess Mr Irvine's previous capabilities compared to his current and likely future mental capacity caused by the seizure and hydrocephalus.

The purpose of the formal NHS complaints process is to provide a factual explanation of what has happened. The complaints process cannot make an assessment of liability and complex assessment of past and future financial losses. The complaints process can provide reimbursement of minor out-of-pocket expenses. Although small ex-gratia payments (i.e. those made without an admission of liability can be made under the NHS complaints process), in a complex causal case the significant damages assessment is best undertaken in accordance with the quantum principles of a civil negligence claim.

The Trust would no doubt use the independent external review to assist in replying to Mr Irvine's family's concerns under the NHS complaints process. The complaint letter of response should provide an open and honest explanation for the factual chain of events but should avoid any admission of legal liability.

There is no prohibition to a parallel complaint investigation with a potential clinical negligence claim, provided the information provided to the complainant under the NHS complaints process does not adversely impact or does not adversely prejudice the Trust's ability to defend a clinical negligence claim. This should be discussed by the Trust's complaints manager and legal manager.

In accordance with the Civil Procedure Rules, an offer of settlement can be made by either party prior to trial by way of a Part 36 offer. In this case, if accepted by the solicitors acting for Mr Irvine, the settlement would be subject to a court approval order since Mr Irvine does not have capacity to control his own financial affairs. A Part 8 Hearing is the court's way of ensuring a fair settlement and to protect the interests of the vulnerable adult.

The solicitors acting for Mr Irvine will need to obtain expert evidence with regard to the impact of the delay in diagnosis on Mr Irvine's mental capacity and his care requirements. If the level of care provided by Mr Irvine's parents has increased substantially this will need to be factored into the claim for past losses and indeed the future losses itemized in the schedule of damages may well feature professional costs and the increased need for external care support for Mr Irvine for the rest of his life (see Case 6 for further explanation of the calculation of past and future losses).

Key learning points

Specific to the case

- Collateral history can be vital in reaching a diagnosis.
- Where there is a paucity of information, it is wise to adopt a more cautious management plan and

BLBK446-Part02_Case07 BLBK446-Reckless Trim: 244mm x 172mm Printer: Yet to Come November 21, 2012 14:7

maintain an open differential diagnosis until information becomes available.

General points

- Small ex-gratia payments can be made through the NHS complaints process.
- A modest change in functional status may have major ramifications for care costs over time.

Further reading

Department of Health (2008) Healthcare for all: report of the independent inquiry into access to healthcare for people with learning disabilities. Chair: Sir Jonathan Michael. Crown. http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_099255 [last accessed 18 March 2012]