shaking must vary and nobody really knows how babies are injured, it may not be necessary to shake an infant very violently to produce stretch injury to its neuroaxis," a conclusion that is not supported by data in the paper and that has led to considerable controversy among expert witnesses in court.⁸ It ignores the evidence for the force required to produce the triad of injuries, in fatal instances of shaken baby syndrome, obtained from evaluating the other components. Clearly, if "gentle" shaking were capable of causing fatal injury, such events would be an everyday occurrence. There is abundant evidence that minor head trauma, so common in the domestic context, is only very rarely associated with severe intracranial injury.⁹⁻¹¹

Further confusion has been sown by a more recent contribution by Geddes et al.¹² This describes the neuropathological findings in the brains of infants dying of non-traumatic cerebral hypoxia. Random examination of sections of dura showed intradural haemorrhage evident only at the microscopic level. On this basis they thought that all the components normally indicative of shaken baby syndrome might result from hypoxic damage alone, dural and retinal haemorrhage being due to brain swelling consequent on cerebral hypoxia. However, subdural haemorrhage in shaken baby syndrome is a macroscopic, not a microscopic, finding, and the comment on retinal haemorrhage has even less foundation in that no examination of the eyes was made.

As shown by Lantz et al in this issue, even when a particular detail has been claimed to be pathognomonic of shaken baby syndrome, the diagnosis should not rest on this feature alone¹³ (p 754). This careful case study reinforces the need for meticulous identification of the complexity of the injury and evaluating the findings against the validity of the explanation offered. It is also true that retinal haemorrhages can have causes other than shaking and that space occupying subdural haemorrhages causing death can occur in witnessed accidental injuries in children.¹⁴ However, of the patients Plunkett described, the youngest was 12 months old, which is outside the age group in which most cases of shaken baby syndrome occur.¹⁴

The pathological diagnosis of shaken baby syndrome requires careful evaluation of the character and extent of all components of the injury and should

not rest merely on the presence or absence of one or more of the constituent lesions. The basic triad should have all the necessary features for confident diagnosis and the conclusion that undue force has been applied. Damage to the neck or spinal cord is further useful confirmation, and the presence of gripping injuries, while often absent, can provide further weight. Other inflicted extracranial injuries provide evidence of abuse even if they are not contemporaneous with the head injury.

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Risk assessment for spinal injury after trauma

The guidelines are simple and evidence based

About 600-700 people sustain acute traumatic injuries to the spinal cord in the United Kingdom each year. Previously published data indicate that the injury to the spinal cord remains unrecognised in 4-9% of individuals.^{1,2} Inadequate management of patients with injury to the spinal cord has the potential to lead to neurological deterioration, additional functional handicaps, and possibly medical litigation. Thousands of patients, however, routinely present to primary care centres every day with injuries to the neck and back. The immediate care and appropriate assessment of patients with spinal injury is a

skill that is expected of all doctors. General practitioners and hospital doctors with little or no training and experience of caring for patients with trauma might have to help the victims of a recent accident. They will certainly have to advise patients who complain of spinal pain after injury. This article is written to guide clinicians in these situations.

The evidence base for this subject has improved recently with some large scale studies from North America.^{3,4} Several consensus guidelines have been published by the National Institute for Clinical Excellence and the British Trauma Society.^{5,6} Most of

Fig 1 Safe log roll

the patients in these studies have been treated in secondary care, but the principles of management should help guide primary care physicians and other clinicians.

A patient who walks into the consulting room three days after a minor rear end shunt in their car does not need immediate spinal immobilisation. The victims of other high velocity road traffic incidents, those who have fallen down stairs, or injured themselves diving into water must be assumed to have had a spinal injury until proved otherwise.

How should you treat the patient at the scene of an accident? If the patient has obvious injuries that will require hospital assessment, minimise movement and await the arrival of the ambulance. The risks of moving the patient always need to be balanced against the risks of possibly making a spinal injury worse. If you need to move the patient, the principle is not “don’t move” but “move carefully,” supporting the entire spine, “keeping spine in line.” Support the head and ensure the head and body move as one. Generally a safe log roll needs informed help from three to four people (figs 1 and 2). The care of the airway is a priority, but in almost all cases this can be managed with due care of the spine. These precautions should be maintained until the emergency services arrive and formal spinal immobilisation can take place.

If the patient has evidence of pre-existing spinal disease such as ankylosing spondylitis, keeping spine in line implies that the spine should be kept in the line that is normal for the patient before the injury. Many patients with ankylosing spondylitis who have severe kyphotic deformity of the thoracic spine and compensatory extension of the craniocervical junction suffer further neurological deficit when the neck is extended in an attempt to keep the spine in line.

Box 1 sets out conditions of low risk injury when a primary care provider can reasonably exclude poten-

tially dangerous injury to the spinal column on clinical grounds.⁶

How should you deal with someone walking into your consulting room with neck pain some time after the injury? A clear understanding of the mechanism of injury is the most important step in the assessment of any injury. “Hurt neck in road traffic accident” is not good enough since such a history could be obtained from a patient involved in a minor rear end collision or from the unbelted occupant of a car that has rolled over. Note the patient’s symptoms, especially any numbness or paraesthesia or limb weakness. Patient related factors such as age over 65 years, previous disorders such as ankylosing spondylitis, rheumatoid arthritis, and osteoporosis all indicate a higher risk.

Box 1: Criteria that must all be met before you can assume a low enough risk of spinal injury not to immobilise the cervical spine

The patient:

- Is fully alert and has no head injury
- Is not intoxicated by alcohol or other drugs
- Has no neck pain
- Has no neurological symptoms
- Has no other painful area in another area of the body
- Has full range of pain free movement in the neck

Patients younger than 65 years of age who have not suffered a “dangerous mechanism of injury” (box 2), have no neurological symptoms or signs, and can rotate the neck to 45 degrees to the left and right, do not require x rays of the cervical spine.³

Box 2: Dangerous mechanisms of injury—where cervical spinal injury needs radiological exclusion in patients with head or neck injury

- Fall from height of more than 1 metre
- Fall from five stairs
- Axial load to the head (for example, diving or contact sports)
- Motor vehicle collision; high speed, roll over ejection; bicycle collision; recreational vehicle collision
- Rear end shunt by bus, lorry, or vehicle at high speed or where the car has been shunted into oncoming traffic

Fig 2 Safe log roll

Advice for the immediate care of patients with neck pain who have been the occupants of a car that has been shunted in the rear by another car at low speed, can be derived from guidance by the National Institute for Clinical Excellence⁵ and the Canadian C-spine rule.³ Briefly, radiology and probably immobilisation are not needed if the patient is alert, mobile, younger than 65 years and has no neurological signs or symptoms, no other injuries, and can rotate the neck by 45 degrees to the left and right (see box 2 for “high risk” rear end shunts).

No such clear evidence base for back pain following clinically significant trauma exists, but the application of

similar principles should help the doctor identify a population at low risk of having a spinal fracture.

The management of patients with low risk injuries of the neck and back is now well defined. Explanation of the injury, reassurance that the injury is not serious, early mobilisation, and early return to function is the best initial strategy. Advice about physiotherapy can be given to all and formal physiotherapy arranged early for those with more severe limitation in movement.

Patients who have had an accident need to have the risks of a spinal injury assessed. A group of patients at low risk of having an unstable spinal injury can be

identified. These patients do not need spinal immobilisation. Patients with neck symptoms after minor injury meeting all the criteria for low risk are unlikely to need routine radiological evaluation.

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“Expert patient”—dream or nightmare?

The concept of a well informed patient is welcome, but a new name is needed

Since the chief medical officer for England first introduced the term expert patient, it has been picked up and used very widely.¹ During this time, the notion of the expert patient seems to have been criticised by doctors at least as much as it has been welcomed.² If one asks lawyers, architects, social workers, or management consultants whether they prefer clients who take an interest in the issues they face and are motivated to work in partnership to achieve successful results, the answer seems obvious. So why does the idea of expert patients provoke such antipathy within the medical profession?

We know from reading the press and listening to the debate that when doctors come across the term “expert patient” they hear different things. For the chief medical officer, expert patients are “people who have the confidence, skills, information and knowledge to play a central role in the management of life with chronic diseases.”¹ The suspicion is that for many doctors, the expert patient of the imagination is the one clutching a sheaf of printouts from the internet, demanding a particular treatment that is unproved, manifestly unsuitable, astronomically expensive, or all three. Or, possibly worst of all, a treatment the doctor has never heard of, let alone personally prescribed.

A survey by the pharmaceutical industry body reported that only 21% of doctors were in favour of the government’s proposals on the expert patient; 58% predicted an increase in the workload of general practitioners; 42% believed it would increase NHS costs; and only 12% thought it would improve relationships between doctors and patients.³ A more recent MORI survey of health professionals found that 63% of doctors think that in the long run better informed patients will require more of their time—a rather higher proportion than nurses (48%) but less than

pharmacists (76%).⁴ For these anxious and overworked medics, the expert patient is the demanding patient, the unreasonable patient, the time consuming patient, or the patient who knows it all.⁵ And who in their right minds would want one of those in the consulting room on a Monday morning, with 10 other, more deserving people waiting patiently to be seen?

Perhaps the expert patient is actually something rather different from this unappealing stereotype of the dissatisfied, middle class consumer. The goal of the expert patient programme is not to turn people with Parkinson’s disease into amateur neurologists or people with arthritis into hobby rheumatologists, setting them up to bully and compete with their doctors. The expert patient programme and other self management programmes run by patients’ organisations place more emphasis on developing the confidence and skills to improve quality of life and work in partnership with health professionals.¹ Research shows that such people make less and better use of health professional time, rather than the opposite scenario feared by many doctors. For example, in randomised controlled trials the arthritis self management course and modified versions of the programme showed consistent improvements in knowledge, self efficacy, and use of self management behaviours, notably exercise. Studies by Lorig et al at Stanford University show that a reduction in visits to doctors of 42-44% can be achieved.⁶⁻⁸

The expert patient programme has now been running for two years, and by May 2003 over 2000 people had attended the six week course. Estimates indicate that 19 000 patients could benefit if each primary care trust hosts four pilot courses with between eight and 16 people trained per course.⁹ Thus, even if these targets prove achievable, graduates of the expert patient programme and its voluntary sector cousins