



The accused

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When this little boy was six months old he was hospitalised following an epileptic fit. Doctors attributed his injuries to 'Shaken Baby Syndrome', and his parents - like hundreds of other falsely accused couples - had to fight to keep him. Dr James Le Fanu exposes 'the greatest medical scandal of our times'

A couple of years ago a colleague rang to tell me of the dreadful misfortune that had befallen friends of hers. For legal reasons they cannot be named, but let us call them Sarah and John Jones, their five-month-old daughter Hettie and her older sister Zoe. Their story makes for chilling reading.



Riordan Edwards-Brown, now 8, with his mother Rioch: his injuries were in fact due to birth trauma

One day when Sarah's back was turned momentarily, Hettie toppled off the bed, hit her head on the floor, convulsed and became unconscious. Sarah held her bleeding, semi-conscious daughter in her arms as the ambulance rushed them to hospital. There a CT scan revealed a massive blood clot under the skull, pressing on the brain. It was, they were told, "touch and go", but the neurosurgeon managed to evacuate the clot in a three-hour operation and Hettie's life was saved.

For three days Sarah and John sat beside Hettie's bed in intensive care watching the ventilator blow air into her fragile lungs, until they were conducted to a side room. "We thought the consultant was going to let us know the results of the latest brain scan," Sarah told me. They were in for a shock, but one that had nothing to do with her medical progress: "We were left in no doubt that they thought Hettie had been violently and intentionally harmed."

They were informed that only excessive force - equivalent to being dropped from a two-storey window - could have produced so serious a bleed within the brain, while the presence of haemorrhages at the back of the eye confirmed that she had been shaken - probably for several minutes. "We were of course appalled to think that anyone could have done this to her, and it took a few moments to realise that I was the main suspect," Sarah said. They were then informed that they were both under investigation by the police, and that social workers had initiated a court order to have Hettie placed in foster care.

I found it difficult to understand what I was hearing. As I got to know Sarah and John it became clear they were the nicest people you could hope to meet. Loving parents, intelligent and funny and with a wide circle of friends.

It is well known that babies can sustain quite severe injuries after trivial falls - just that week the British Medical Journal had reported on skull fractures sustained by tumbles out of a Moses basket. So why shouldn't Hettie's tumble have caused a large bleed under the skull? Besides, the elder sister Zoe had been in the room at the time and had actually seen Hettie fall. No doubt there must have been some misunderstanding and I was only too happy to do what I could, as a doctor, to help sort it out. Little did I know.

It seemed inconceivable to me that any doctor could make so serious an allegation against Sarah without the most powerful of substantiating medical evidence. Yet this is the story, in the words of the prominent forensic pathologist Dr John Plunkett, of "the greatest medical scandal of our times" - and of how, over the past 12 months, new medical evidence has vindicated parents such as Sarah and John and shown the experts to have been profoundly, and tragically, in error.

Twice already this year the courts have been forced to set aside the opinion of medical experts to exonerate women falsely accused of child murder. In February the Court of Appeal quashed the conviction of Sally Clark, a solicitor in Birmingham, after learning how the prosecution had withheld vital evidence from the defence that her son Harry had been suffering from an infection that could have caused his death.

Just a month later a High Court in Edinburgh acquitted Tina Macleod, a childminder, of having murdered one-year-old Alexander Graham, whom she found lifeless on the carpet, after he had fallen from the sofa. The jury rejected the prosecution's claim that the autopsy findings - of haemorrhages in the brain and retina - **were characteristic of Shaken Baby Syndrome (SBS)**, after learning that this was "untenable in anatomical fact".

The terrible truth is that Sally Clark and Tina Macleod are just one example of hundreds of similar cases over the past few years, where parents have been wrongfully accused of deliberately injuring their children. We know about Sally Clark and Tina Macleod because the fatal outcome resulted in a criminal prosecution in the public courts. But when the child survives an alleged "non-accidental injury", the case is heard within the privacy of the Family Courts and thus can neither be reported on nor have its findings scrutinised by others.

In this hidden world, the heavy artillery of medical expertise asserts SBS to be the only possible explanation for the child's injuries, even when there is no other physical or anecdotal evidence of abuse. The outcome is rarely in doubt and, in the process, families like Sarah and John's have been torn apart and lives ruined.

The concept of Shaken Baby Syndrome was first proposed in the 1970s to account for a particular type of injury in severely battered babies. They had all the ghastly stigmata of fractures, bruises and cigarette burns and almost invariably suffered bleeding within the brain, but sometimes without direct evidence of injury to the skull. Perhaps, it was suggested, the perpetrator had violently shaken the baby and the to-and-fro agitation of the brain within the skull could have torn the delicate blood vessels on its surface. Shaking could, in a similar way, account for the frequently observed haemorrhages in the back of the eye by having torn the blood vessels to the retina.

This explanation was hypothetical as, for obvious reasons, no one had ever directly observed the sort of severe shaking required to cause such injuries. But Ayub Ommaya, an American neurosurgeon, provided some confirmatory evidence in a series of grisly experiments in which monkeys sitting in a truck were catapulted forward along a 20ft track. Their unsupported heads jerked

backwards so forcefully as to cause concussion and, sure enough, at autopsy there were multiple contusions in the substance of the brain and bleeding on its surface. Now, if shaking could account for this pattern of injury in a severely battered baby then logically any child with brain and retinal haemorrhages could also have been shaken - even when there was no other blemish on their bodies to suggest they had ever been abused.

The prevailing view was reiterated in medical journals and textbooks, where this particular combination of injuries was described as "characteristic" or "diagnostic" of Shaken Baby Syndrome. To be sure, parents invariably deny shaking, insisting, as Sarah did, that their babies have suffered some apparently trivial accident. But this was taken as further evidence of their guilt because "minor accidents" could not cause such serious injuries.

"Denial is highly indicative of abuse," wrote one of the main protagonists of SBS, the paediatrician Robert Kirschner of Chicago University (in *Child Abuse*, published last year); adding, with heavy-handed sarcasm, "the history of an infant falling from a sofa is so common, we label these deadly items of furniture 'killer couches'." This, he claims, is just one of a "dirty dozen" of suspicious stories which include "hard object fell on child", "child suddenly stopped breathing", and "parents tripped or stumbled while carrying child". Sarah's protestations of innocence, like all those in her situation, would clearly be of no avail - they merely confirmed her guilt.



Released: Sally Clark, falsely convicted of killing her children

Either way Sarah was damned - and there seemed no way out. Parents who do terrible things to their children will, of course, deny it, so any discrepancy between their account and the severity of the injuries is obviously suspicious.

But not everyone shared Dr Kirschner's certainty. Indeed Britain's most distinguished forensic pathologist, Sir Bernard Knight, writing in the *British Medical Journal* in June, 1995, was particularly critical of the "ill defined" nature of shaking, the consequences of which he said were "not specific". And two years ago, when an Australian researcher systematically reviewed every paper on the subject, he found - astonishingly - "inadequate scientific evidence to come to any firm conclusion about most aspects of diagnosis, treatment and other matters pertaining to SBS."

Such doubts and reservations, though clearly important, were unlikely to be of much help to Sarah. Until, that is, I had what seemed like a most fortuitous stroke of luck. I found an American paediatrician who had dealt with a case similar to Hettie's, and he drew my attention to a paper published in the summer of 2001, a couple of months before Hettie's

accident, whose title - "Fatal paediatric head injuries caused by short-distance falls" - was self-explanatory. Hettie, luckily, had survived, but in other respects the paper was crucially relevant.

John Plunkett, the forensic pathologist, had reviewed thousands of cases of head injury in children and identified 18 independently witnessed accidental trivial falls that had produced features allegedly "characteristic" of SBS. By definition, the brain and retinal haemorrhages here could not have been due to shaking, which meant that some other mechanism must have been involved - where the sudden rise of pressure from major bleeding within the skull had compressed the blood vessels to the eyes. So Kirschner was wrong: it could happen as the result of a trivial fall.

Triumphantly, I rang Sarah and John with the news. Their ordeal, I assured them, would soon be over. The doctors involved in Hettie's case were, no doubt, unaware of Dr Plunkett's findings; but now that Sarah's explanation could be shown to be plausible they would presumably drop their case.

I could not have been more wrong. The experts in their submission to the Family Court insisted that SBS was the only possible explanation for Hettie's injuries. And when the time came for the court hearing the presiding judge could do little other than abide by their expert opinion. (They dismissed Zoe's witnessing the fall by inferring that Sarah must first have shaken Hettie in another room.)

Sarah and John were only lucky that Hettie was not, as the social services had wished, taken into foster care. Hettie, the judge ruled, could return home but Sarah would not be allowed to look after her unsupervised for the next 12 months - lest she try to harm her again. Her mother-in-law would have to move in for the duration, and any further action would depend on the outcome of a psychiatric assessment.

By now it was clear that this was not just some isolated miscarriage of justice: after hearing the misgivings of other doctors involved in similar cases I had come to realise that there was something seriously amiss with the entire concept of SBS. A neurologist described as "beyond belief" the lack of objectivity in the prosecution statements in such cases, while a pathologist told me of his "amazement" that doctors should take as gospel the findings of what he considered "shoddy and biased scientific studies".

It was not just the absence of definitive evidence that shaking could cause such injuries in the way the protagonists insisted - though that was serious enough. But, as was pointed out to me several times, Shaken Baby Syndrome appeared to encompass several different types of injury to the brain - and that in itself was very suspicious.

The term "syndrome" presupposes a readily recognisable pattern of symptoms and physical signs that consistently occur together and thus can reliably be attributed to a single cause. SBS, however, seemed to include not only those like Hettie with a sudden massive bleed into the brain, but others with a much smaller bleed indistinguishable from those associated with birth trauma; and yet a third group with just a thin layer of blood on the surface of the brain. It is highly improbable that "shaking" could account for each of these very different outcomes.

Most striking of all, these extraordinarily serious allegations were being made without the most elementary attempt to rule out other more innocent explanations. This was what Rioch Edwards-Brown, a television researcher, discovered when her six-month-old son Riordan was admitted as an emergency following an epileptic fit to King's College Hospital, London, in

July, 1995.

Riordan had been born a month-and-a-half prematurely, and a brain scan had shown a small amount of blood under the skull which the consultant assured them was attributable to his premature birth. But following his epileptic fit, the consultant changed her mind. Rioch and her partner Ian were summoned to see her in a side room of the ward, and were astounded to learn that having looked at the scan again, she was convinced Riordan had been "picked up by his ankles, hit against a hard surface and shaken". As a matter of procedure, they were told, "social services has been contacted". Meanwhile, if they attempted to remove Riordan from the hospital the police would be informed.

The couple, interviewed later by social workers, were told they would have to come up with "a good explanation" for their son's injuries, but in the meantime an application had been made to the Family Court to place Riordan in foster care. It was 4.30 on a Friday afternoon, the hearing was on the following Monday and they had just over an hour to find a solicitor before offices closed for the weekend.

"We were standing in a call box just outside the ward frantically ringing round to get legal representation," Rioch recalls, "when quite unexpectedly we were approached by a sympathetic nurse." Riordan's original notes had gone missing soon after admission but here was the nurse, carrying them in her hand. She handed them over, discreetly urging the couple to look at the measurements of his head-circumference soon after birth. These showed his head had increased by nearly four centimetres in just 10 days - for which the only possible reason, as was subsequently agreed, was bleeding under the skull caused by birth trauma.

The case was thrown out. The hospital, but not the consultant, belatedly offered a grudging apology and Rioch, angered by the false charges against her, formed a support group for parents.

The misattribution of Hettie and Riordan's very different injuries could euphemistically be attributed to "medical over-enthusiasm" for the diagnosis of SBS, but no one had challenged the notion that shaking could account for the type of injury originally described back in the 1970s, which occurs in severely battered children: where there is just a thin layer of blood over the surface of the brain together with retinal haemorrhages. And then Jennian Geddes, a neuropathologist from the Royal London Hospital, showed this, too, to be incorrect.

The conventional view with SBS was that the vigorous to-and-fro motion of the brain within the skull caused Diffuse Axonal Injury (DAI), where the nerves (or axons) in the brain and along the spinal chord were literally torn apart. Geddes examined brain tissue obtained at autopsy from 53 severely battered children, but there was evidence of DAI in only two. For the majority, the cause of death was oxygen deprivation, which caused a swelling of the brain and bleeding on its surface. And the same oxygen deprivation caused bleeding within the eye and thus accounted for the retinal haemorrhages.

This might seem a technical point but the distinction is crucial. For years the experts had been trooping into the witness box asserting that the injuries they described were a consequence of powerful shearing forces within the skull, disrupting the blood vessels in the brain and the eye. But it turns out it is not the agitation of brain and eye within the skull that does the damage, but rather a movement at the level of the neck that disrupts the respiratory centre in the lower part of the brain, with the result that the baby stops breathing. Violent shaking could be responsible, but so could

simpler injuries such as an accidental fall with sudden flexing of the neck.

In retrospect it began to seem only too obvious how the experts had got it wrong. The imagery of violent shaking, bursting blood vessels in the brain and eye, proved so compelling that these doctors simply did not contemplate the possibility that some entirely different mechanism might be responsible. And once parents began to be convicted on the basis of expert testimony there could be no going back - they had to be right; the prospect of being responsible for miscarriages of justice on such a scale was simply unacceptable.

It took some time for the full implication of Dr Geddes's revelation to sink in but by early this year it was clear that the tide had turned, with a substantial minority of specialists now constituting an unofficial opposition to the SBS juggernaut. In March an Edinburgh jury was persuaded that the childminder Tina Macleod had not, as the prosecution alleged, shaken Alexander Graham to death. Rather, the pathological findings of brain and retinal haemorrhages were due to acute oxygen deprivation brought about by the disruption of the respiratory centre by the sudden flexing of his neck as he fell to the ground.

Earlier this month, on April 4, the prosecution - in a volte face that would have been inconceivable just a few months earlier - declined to pursue their **case against another nanny, 23-year-old Michelle Petchey**. On the first day the court had heard how, in the familiar litany of SBS allegations, the baby's injuries were consistent with "falling from a first-floor window or serious head injury caused from a road traffic accident". The following day the judge advised the jury to return a not guilty verdict after hearing that the prosecution would present no further evidence.

Now the same pattern has become evident in the Family Courts, with solicitors reporting a sharp fall in the number of cases as the experts have apparently become much more hesitant in their allegations - no doubt hoping that the events they have been involved in over the past few years can be brushed under the carpet. "The greatest medical scandal of our times" has, after all, taken place concealed from public view, so who is to know what has been going on?

They will not get away with it that easily. For the past seven years Rioch Edwards-Brown has been giving succour to distraught parents, recording their testimonies and pointing them in the direction of sympathetic lawyers. These are the "Five Percenters", named after yet another endlessly reiterated (and unprovable) statistic: that 95 per cent of children with brain and retinal haemorrhages are victims of SBS, and that therefore only five per cent are not.

Robert Kirschner (of the notorious "killer couches") claims that parental testimony is invariably "vague and inconsistent" - further proof, he says, that they must be concealing their guilty secret of abuse. Not so. The parental testimonies reveal time and again specific details so readily recognisable that it is possible to predict from the opening sentence what will happen next.

It is inconceivable that parents should have fabricated these stories, not least because the pattern of events they describe are so consistent with the different types of injuries sustained. Those like Hettie, who lose consciousness after a minor fall, have major bleeds that require an operation; whereas those like Riordan, with the chronic bleed typical of birth trauma, only become apparent following a brain scan. There are variations on these themes but the most powerful impression is the authenticity of

parental testimony.

There is, in short, no such thing as Shaken Baby Syndrome. As always, the context and attention to detail is all, and the experts' failure to acknowledge this renders their opinion - asserted so confidently in the courts over the past few years - worthless.

There are many reasons why the experts should have got things so badly wrong, but it is significant that most of the accusations originate from a handful of hospitals. There is an obvious precedent here in the Cleveland affair of 15 years ago, when a couple of paediatricians removed 121 children from their families in a few months alleging - on the basis of the solitary and ambiguous sign of reflex dilatation of the anus - that they had been sexually abused. But the shaking baby saga is more serious still, both in its scope and in the suffering it continues to inflict on innocent families.

Meanwhile the Five Percenters are seeking funds to campaign for a public inquiry, which would have to examine, and set aside, hundreds of convictions for SBS as well as find some way to compensate the families for the injustice that has been done to them.

Sarah and John have survived their ordeal, though they will never escape from the shadow of the terrible events they have lived through. The psychiatrist eventually confirmed the obvious - that they were a loving and devoted couple - which left the court no alternative other than to lift the order constraining Sarah's care of her children.

Despite it all, they were the lucky ones. Had they not been articulate and educated, with friends able to make sense of the impenetrable jargon involved and reassure them the experts can be wrong, their lives - like so many in their circumstances - could so easily have been crushed beyond repair.

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