

# Post-Mortem on a “Shaken Baby Syndrome” Autopsy

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**F. Edward Yazbak, M.D.**

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At a clinical pathological conference, a resident usually reviews the history and findings of a case, the radiologist describes the imaging studies, and the department chief leads a small discussion. The conference is then turned over to the pathologist who in a few minutes describes the autopsy findings and announces the actual diagnosis. As we file out of the hall, we are all quite confident that we know exactly what happened to the patient. With an autopsy, the diagnosis is final, and the conclusions cannot be questioned.

Those of us who examine medical records and testify in shaken baby syndrome (SBS) cases have at times been surprised and even shocked at some of the autopsies we have recently reviewed. One such autopsy sent an innocent man to jail for 7 years, and surprisingly helped to set him free.

## Summary of Events

The father of a 10-week-old male infant who suffered an ALTE (acute life threatening event) and died in November 1997 was charged with murder by “shaking.” The father’s crime, as is often the case, was that he was the only adult present when the infant stopped breathing.<sup>1</sup>

The infant’s mother had actually lost 10 pounds in the beginning of her pregnancy because of hyperemesis gravidarum. She later gained 12, ending with a net weight gain of only 2 pounds. She also had gestational diabetes, a urinary tract infection due to *E. coli*, a positive vaginal culture for group B streptococcus, and oligohydramnios. Because of the last, delivery was chemically induced at 35 weeks.

The infant had respiratory distress syndrome, hyperbilirubinemia, and apneic episodes during his nursery stay. After discharge, he was often congested. He was not well on Nov 11, 1997, at true age 43 days, when he received four vaccines (six antigens).<sup>1</sup> On Nov 24, 1997, he had a cardiorespiratory arrest and was admitted to a medical center.

On Nov 27, 1997, brain death was confirmed at 3 p.m., but the infant was continued on ventilation and life support until several organs were harvested on Nov 29, 1997. After “biological death” was pronounced at 5:30 a.m., the infant was taken off the ventilator and transferred to the morgue, where an autopsy was performed, starting at 10:15 a.m.

The medical examiner (ME) listed the cause of death as “subdural hemorrhage, due to Shaken Baby Syndrome” and the manner of death as a homicide.<sup>2</sup> The infant’s father insisted that he

was innocent and adamantly refused to plead to a lesser charge. A jury found him guilty, and he was sentenced to life imprisonment plus 10 years.

After the trial, more than 20 medical experts from the United States, the United Kingdom, and Australia reviewed the medical records (pro bono). They all agreed that the infant had died of medical causes and that there were many problems with the management of the case, particularly with the autopsy and the autopsy report.

In May 2003, the infant’s mother filed a detailed complaint with the Florida Department of Health in which she listed 25 specific problems and charges against the pathologist/ME. An amended complaint by the father to the state Medical Examiners Commission followed in November 2003.

After a probable-cause panel sustained 12 of the 25 complaints, the Commission met on Feb 12, 2004, placed the pathologist on probation until his appointment ended, and prohibited him from performing autopsies. On Apr 1, 2004, the Commission finalized the decision and informed the infant’s mother.<sup>3</sup> The disciplinary action was unprecedented in the history of the statewide ME system, which was established in 1970.

At an evidentiary hearing in August 2004, the presiding judge reversed the verdict based mostly on errors and problems with the autopsy, the autopsy report, and the ME’s own testimony at the original trial.

## Errors and Omissions

The 9 lb infant, whose reported head circumference was 22 cm, was described as normocephalic.<sup>2</sup> Such an infant would obviously be microcephalic. The head circumference was actually 31.5 cm at birth and 37.5 cm upon his final admission, according to the hospital records. The infant’s height was recorded as 22 in (not cm); this figure was probably inserted thoughtlessly for the head circumference.

While the heart had been successfully harvested and transplanted, the autopsy report contained the following microscopic examination: “The myocardium shows no evidence of inflammation, interstitial or replacement type fibrosis. There is no necrosis of myocytes and no evidence of ischemic change. The microvasculature shows no areas of thickening or perivascular fibrosis. There are no atypical changes present. No inflammation is noted.”<sup>2</sup> At the evidentiary hearing, it was noted that pathology reports used “canned” language. It is possible that an incorrect macro file was inadvertently inserted into the report that the ME initialed without review.

Meningitis was part of the differential diagnosis of the infant's illness, but there is no mention in the record that it was considered. In addition, the ME did not perform any viral or bacteriologic testing and did not include a description of the microscopic examination of the meninges in the autopsy report. At the trial, defense witness Douglas Radford Shanklin, M.D., testified that in his opinion the child had some form of meningitis, based on his review of the microscopic brain and spinal cord sections.<sup>4</sup>

The ME wrote: "The ventricles are slightly reduced in size and the cerebrospinal fluid appears clear."<sup>2</sup> At trial, he testified that spinal fluid had not been sent for analysis and that the fluid at the base of the brain was blood-tinged.<sup>5 p.2 3 9</sup>

Despite testifying at trial that the history from the caretaker is essential in making the diagnosis of SBS,<sup>5 p.2 4 7</sup> the ME admitted that in this case the information was obtained from the investigating police officer.<sup>5 p.2 4 8</sup> Moreover, neither the birth history nor the record of the final hospitalization had been forwarded with the body, retrieved, or reviewed.<sup>5 p.2 5 7</sup> From these records, the ME could have learned that the infant had a "tiny" subdural hemorrhage some 9 hours after the ALTE and had been receiving heparin in the hospital, with a very large dose prior to the organ harvest. In the light of this treatment, it was not surprising that "[t]here are areas of subdural hemorrhage which appear relatively fresh."<sup>2</sup>

Because the diagnosis of brain death cannot be made in the presence of sedating drugs, toxicologic studies would have been appropriate, but were not done.

Apparently, the ME took the time of brain death to be the time of death and reported the date of death as Nov 27, 1997. It was from this time that the neuropathologist who consulted with the ME calculated, "moving backwards," the time window during which the injury occurred.<sup>6 p.3 1 1</sup> This was a crucial error. Had the ME made it clear that the child was "biologically alive" for two additional days, the window of injury would have included the time when the child was in the hospital, under medical supervision and receiving an anticoagulant. Both prosecution and defense attorneys relied on the pathologists' flawed analyses.

In addition, the ME took no note of the infant's vaccination history, although he had received his injections just 13 days before the ALTE and had had symptoms similar to those previously associated with these vaccines. One of the vaccines, diphtheria/tetanus/acellular pertussis (DTaP) lot 7H81507, generated 72 reports to the Vaccine Adverse Event Reporting System (VAERS), including five deaths in a home setting, three occurring one or two days post-vaccination, 36 emergency room visits, and seven hospital admissions. Some symptoms reported to VAERS were: apnea and hypoxia in two cases, encephalopathy in one, stupor and non-responsiveness in three, convulsions in three, and a cerebral cry in three cases.

In the conclusion of the autopsy report, the ME stated: "This 2 month old black male infant died as a result of Shaken Baby Syndrome..." The infant was a 10-week-old white male. The ME

testified at trial that the mistake was simply a "typographical" error.<sup>5, p. 273</sup> After the criminal trial, the report was altered and the race was changed to white, without notice to the courts or the involved parties. In the altered report, the change is evident as it is in a different font.

The ME testified at trial that the infant had diffuse axonal injury (DAI) although there was no mention of DAI in the autopsy report. This diagnosis was a very critical point in obtaining the conviction.<sup>1</sup>

At the August 2004 evidentiary hearing, a medical examiner/expert witness from a neighboring county testified that this was the worst autopsy and report he had ever seen.

The judge evidently agreed.

## Conclusions

Testimony by pathologists about autopsy results can help condemn innocent persons to life imprisonment or even death. The autopsy table is accepted as the altar of truth by physicians and courts alike. Yet, as this case shows, medical examiners are fallible, and autopsy reports must always be analyzed critically.

Minor errors such as mistaking the child's race may seem immaterial, but signify the lack of meticulous care that should be demanded when life and liberty are at stake. Such errors raise the possibility that the body being examined was misidentified.

It is possible that these seemingly immaterial but indisputable errors helped to get the case opened for review, so that egregious failures to obtain all pertinent information and to consider all possible diagnoses were ultimately revealed.

**F. Edward Yazbak, M.D., F.A.A.P.**, is the founder of TL Autism Research. He served pro bono as an expert witness in the evidentiary hearing of Alan Yurko. Contact: [tlautstudy@aol.com](mailto:tlautstudy@aol.com).

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