UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF RHODE ISLAND

BRETT CAMPBELL, a minor,
by his father, ERIC M.
CAMPBELL and MARY C. CAMPBELL

v. Civil Action No. 92-0121-T

UNITED STATES OF AMERICA

DECISION AND ORDER

Ernest C. Torres, United States District Judge.

This is a medical malpractice action brought pursuant to the Federal Tort Claims Act, 28 U.S.C. §§ 2671 et seq. (FTCA). The plaintiffs are Brett Campbell, a severely impaired three year old child, and his parents, Mary and Eric Campbell.

Brett was born at Silas B. Hays Army Community Hospital, Ft. Ord, California on June 11, 1990. The plaintiffs contend that Brett suffers from a condition known as hypoxic ischemic encephalopathy which is a form of brain damage that occurs when the brain cells do not receive an adequate supply of oxygen. The plaintiffs further contend that the oxygen deprivation (i.e., the hypoxic event) occurred during labor and/or delivery (i.e., perinatally) and was caused by the negligent failure of the medical personnel at Fort Ord to perform a Cesarean section several hours before Brett's birth. The government denies that the medical personnel were negligent and contends that the events responsible for Brett's brain damage (i.e., encephalopathy) occurred earlier in Mrs. Campbell's pregnancy (i.e., prenatally).

FINDINGS OF FACT

Mary Campbell became pregnant with Brett sometime in September of 1989. During her pregnancy, Mrs. Campbell was hospitalized at Hays on three occasions. On December 11, 1989, she was admitted for treatment of a recurring urinary tract infection. On April 26, 1990 and April 29, 1990, she was again hospitalized for contractions that were mistakenly believed to be the onset of labor. During the month of May, Mrs. Campbell's pregnancy was relatively uneventful except that she noticed a loss of some fetal movement approximately one week before delivery.

On June 6, 1990, Mrs. Campbell went to the hospital complaining of exhaustion brought on by persistent contractions and an inability to sleep. At the hospital, Brett's fetal heart rate was monitored and correlated with Mrs. Campbell's contractions. The results were recorded graphically on what is known as a fetal heart rate tracing.

The purpose of collecting such data is to determine whether a fetus is receiving a sufficient supply of oxygen. Each time an expectant mother experiences a contraction, the supply of blood carrying oxygen to the fetus is reduced. Such episodes have little effect on a healthy fetus. However, if the fetus is abnormal, its heart responds by slowing the rate at which it beats in order to maintain the supply of oxygen it needs. If the heart rate slows too much, the other organs in the body may be adversely affected by the reduced supply of blood and oxygen they receive.

The tracings done on June 6 gave no indication of any fetal distress, and the Campbells were told that their baby was doing well. However, because her difficulties persisted, Mrs. Campbell continued going to the hospital on a regular basis until Brett was born. The fetal heart tracings done during that period indicated that the baby was in good condition, and Mrs. Campbell was, repeatedly, assured by her doctors that everything was all right.

On June 11, Mrs. Campbell began her labor and was admitted to the hospital around 6:30 a.m. Fetal heart tracings done throughout the morning and early afternoon were normal. However, as time passed, Commander Campbell became increasingly concerned about the toll protracted labor was having on his wife. Accordingly, he asked Dr. Paul Weaver, the attending physician, whether the process could be expedited. Dr. Weaver responded by saying that a natural delivery was best for the baby because it was less risky than alternative methods.

By early afternoon the situation had begun to deteriorate. At approximately 1:00 p.m., fetal heart tracings disclosed the occurrence of a bradycardia, which is a prolonged slowing of the heart rate to less than 120 beats per minute. Hospital personnel responded appropriately by placing Mrs. Campbell on her side and administering oxygen. Shortly thereafter, the fetal heart rate returned to normal.

At 1:50 p.m., the tracings showed that Brett was being stressed by every contraction, thereby creating cause for concern.

Twenty minutes later, a second bradycardia occurred indicating that it might be prudent to deliver the baby in order to prevent possible damage from hypoxia. At 2:47 p.m. the tracings revealed a third bradycardia which, according to Dr. Harold Schulman, an eminently qualified obstetrician/gynecologist, made it imperative to deliver the baby. Nevertheless, no efforts were made to hasten delivery, and Brett was delivered at 6:20 p.m.

At the time of delivery, Brett was not breathing, his skin was pale blue and his limbs were floppy. Consequently, Dr. Weaver, the attending physician, gave Brett a low APGAR score. The purpose of an APGAR score is to help determine whether a newborn child requires medical treatment. APGAR scores are based on an essentially subjective assessment of a baby's heart, respiration, muscle tone, color and grimace reflex. Each component receives a rating of 0-2 points, and the overall score is simply the sum of the points assigned to each component. The perceived need for treatment is inversely proportional to the APGAR score.

When Brett was delivered, Dr. Weaver rated most of his APGAR components at 0. The hospital record indicates that Brett's APGAR score improved to 3 at one minute after birth and 7 at five minutes after birth. Because of Brett's condition, a mask was placed over his face, and he was supplied with oxygen by a process known as ventilation. The ventilation continued for approximately eight minutes until Dr. David MacDonald entered the delivery room. By then, Brett's trunk had begun to turn pink, and he was breathing on his own. Brett's extremities were still blue, but Dr. MacDonald

gave Brett an APGAR score of 8 and ordered the mask removed. He also directed that Brett be taken to the nursery where it was warmer and where he could be closely monitored.

Just before Brett was taken from the delivery room, Commander Campbell began recording the events on his videocassette recorder. On that film, Brett appears slightly bluish in color and can be observed moving slightly and making somewhat unnatural crying sounds.

Forty-five minutes after birth an arterial blood gas test was performed to determine the acidity of Brett's blood. Acidity is measured on a pH scale that ranges from 1 to 14. A pH of less than 7.35 represents a condition known as acidosis which may be caused by the metabolic acids produced when a fetus, deprived of oxygen, consumes fats and other bodily tissues to obtain oxygen.

In unusually stressful deliveries, blood gas tests are normally performed on the umbilical cord at the time of delivery. That was not done in this case. However, by extrapolating the results of blood gas tests performed later, Dr. Schulman calculated the pH of Brett's blood at the time of delivery to be slightly below 7. Because the acidosis cleared within 12 hours, Dr. Ronald Ariagno, a neonatologist and professor of pediatrics at Stanford University who later treated Brett, concluded that the acidosis was only mild to moderate.

During the night of June 11, Brett suffered from periodic seizures which were treated with significant doses of barbiturates. By the following morning it had become apparent that Brett was

suffering from neurological problems with which the Army hospital was not equipped to deal. Accordingly, Brett was transferred to Stanford University Medical Center where he remained for two weeks.

The day after his arrival at Stanford, Brett was examined by Dr. Barry Tharp, a pediatric neurologist. Brett's tone at that time was good, and his limbs exhibited none of the floppiness that had been observed at the time of delivery. He also was responsive to stimuli, and his fontanel, the soft area at the top of his head, was normal indicating an absence of the swelling or edema that would be expected to develop within 18 to 24 hours after a severe hypoxic event. An MRI and CT scan ordered by Dr. Tharp confirmed the absence of edema. Other tests revealed only minimal damage to other organs, providing another indication that there had been no severe perinatal hypoxic event. Moreover, three electroencephalograms performed over a period of several days showed a virtual absence of brain waves. Since brain wave activity usually resumes shortly after an hypoxic event causing brain damage, the EEG's were additional evidence that no such event occurred during labor or delivery.

Brett was also examined by Dr. Ariagno who found Brett to be somewhat lethargic and diagnosed his condition as severe encephalopathy, secondary to <u>pre</u>natal asphyxia. Although Dr. Ariagno found evidence of a liver problem, he characterized it as longstanding and relatively mild. Like Dr. Tharp, Dr. Ariagno saw no edema and classified Brett's tone as normal. During the

remainder of his stay at Stanford, Brett's tone continued to be good, and no edema developed.

APPLICABLE LAW

Under California law, a plaintiff in a medical malpractice action must prove that the defendant breached a duty to use the degree of skill, prudence and diligence that other members of the profession commonly possess and exercise in the same or similar circumstances (i.e., that the defendant was negligent) and that the plaintiff suffered actual loss or damage that was proximately caused by the defendant's negligence.[1] See, e.g., Mann v. Cracchiolo, 694 P.2d 1134, 1143 (Cal. 1985); Fry v. Block, 235 Cal. App. 3rd 922 (Cal. App. 199l); Cal. Civ. Code § 3333.2(c)(2).

NEGLIGENCE

In this case, there is no claim that Fort Ord medical personnel provided substandard care during Mrs. Campbell's pregnancy. Indeed, Dr. Schulman, the plaintiffs' own expert, described her prenatal care as good. Rather, the alleged negligence consists of the failure to deliver Brett sooner by

---

[1] Under the FTCA, the Government's liability is to be determined by the application of the law of the place where the act or omission occurred. 28 U.S.C. § 1346(b); Richards v. United States, 369 U.S. l (1962). In this case, because all of the relevant events occurred in California, the parties agree that California law applies. In any event, the elements of a malpractice claim are essentially the same under both California and Rhode Island law. See Sousa v. Chaset, 419 A.2d 1132 (R.I. 1987); Schenck v. Robert Williams Hospital, 382 A.2d 514 (R.I. 1977).

performing a Cesarean section when the fetal heart tracings indicated that he was in severe distress.

The Court has little difficulty in concluding that applicable medical standards required intervention to deliver Brett by 2:47 p.m. when the third bradycardia occurred. In this regard, the Court accepts the testimony of Dr. Schulman who stated that it was imperative to deliver the baby at that point in order to avoid the risk of damage from hypoxia.

CAUSATION

As already noted, Commander Campbell testified that he discussed with Dr. Weaver the possibility of expediting the delivery and that Dr. Weaver expressed the opinion that natural delivery was preferable because of the risks associated with any alternative method. The evidence indicates that because of the fetus's position, the only available alternative was a Cesarean section.

There is no direct evidence that a Cesarean section was specifically discussed with Commander Campbell or what risks it may have presented in this case. Nor is there any direct evidence that the Campbells would have consented to such a procedure. However, Commander Campbell testified that they previously had been told by their family physician that, because of Mrs. Campbell's small pelvis, a Cesarean might be necessary and that a team was standing by to perform one if required. The Court infers from those facts that the Campbells would have agreed to a Cesarean delivery. Therefore, the issue becomes whether failure to perform a Cesarean

was a factor in Brett's encephalopathy. As in most medical malpractice cases, the answer to that question is the subject of conflicting opinions expressed by various expert witnesses.

Dr. Schulman, one of the plaintiffs' experts, testified that Brett's encephalopathy is attributable to an hypoxic injury that occurred during labor and that a Cesarean section performed at the time of the third bradycardia would have prevented it. That opinion is supported by the testimony of the plaintiffs' other expert, Dr. Ignacio Rodriguez, a pediatric neurologist. Dr. Rodriguez stated that the brain damage was caused by cerebral anoxia (i.e., a lack of oxygen being supplied to the brain) during the 24 hour period preceding delivery.

The defendant's experts, on the other hand, opined that Brett's condition is attributable to events that occurred prior to the onset of labor. Dr. Ariagno testified that Brett's encephalopathy probably was caused by an hypoxic event, but one that most likely occurred prenatally (i.e., before labor and delivery). Dr. Tharp was less certain about the precise cause but emphatically expressed the opinion that if it was an asphyxic event, it occurred at least several days before labor began and could not have occurred during labor or delivery.

In order to resolve these conflicting opinions, the Court must assess the relative qualifications of the witnesses, the degree of their familiarity with the relevant facts and the bases for their opinions. There was general agreement among the experts that a diagnosis of perinatal hypoxic ischemic encephalopathy

depends upon the presence of a number of factors that are usually associated with it. Principal among those factors are:

1. Depression at birth;

2. Seizures occurring 18-24 hours after birth;

3. Edema occurring 18-24 hours after birth and peaking 3-4 days after birth;

4. Relatively severe metabolic acidosis;

5. Multisystem damage (i.e., damage to other bodily systems and organs such as the kidneys, liver, lungs, and heart).

Dr. Schulman, a highly qualified obstetrician and gynecologist, was unable to address some of those factors because he did not review the Stanford medical records. He based his opinion on the fetal heart tracings done shortly before delivery and the arterial blood gas study performed 45 minutes after delivery, both of which indicated to him an acidotic and hypoxic condition during labor. He also relied on the normal fetal heart tracings during the several days preceding Mrs. Campbell's admission, Brett's normal bodily size and development and the absence of any indication that there was a prenatal event that could account for Brett's encephalopathy.

Dr. Rodriguez, although a seemingly competent pediatric neurologist, had less impressive credentials. Unlike the other expert witnesses he is not board certified, having failed the neurology boards on two occasions. Moreover, like Dr. Schulman and unlike Drs. Ariagno and Tharp, he did not have the advantage of personally examining Brett shortly after delivery. Like

Dr. Schulman, his opinion was based, in part, on Brett's normal size and development and the absence of any abnormalities in the prenatal fetal heart tracings. He also interpreted the MRI and CT scan films as showing cerebral edema and found evidence of kidney damage manifested in the high creatinine level recorded on blood tests performed at Stanford. In addition, based on his review of the video tape taken by Commander Campbell and the APGAR scores assigned by Dr. Weaver, Dr. Rodriguez concluded that the reported APGAR scores of 3, 7 and 8 were inaccurate and that the true APGAR scores would have been between 4 and 6. Finally, Dr. Rodriguez found the absence of any cerebral infarctions in the MRI and CT scans performed at Stanford to be indications that no brain damage had occurred prenatally.

Drs. Ariagno and Tharp, who were eminently qualified in the fields of pediatrics and pediatric neurology respectively, both personally examined Brett and followed his course at Stanford. Their opinions were based primarily on the absence of the factors normally associated with a perinatal hypoxic event. Specifically, they found no evidence of the cerebral edema that would be expected to develop sometime between 18-24 hours following birth. In the Court's judgment, their findings appear to be more reliable than the contrary findings of Dr. Rodriguez because their findings were based on first-hand clinical observation and interpretations of the MRI and CT scan films made by a radiologist who, unlike Dr. Rodriguez, was trained specifically to make such interpretations.

Drs. Ariagno and Tharp also found no evidence of the kind of multisystem damage that would have been produced by a perinatal hypoxic event of sufficient magnitude to cause Brett's encephalopathy. Dr. Ariagno did find some problems in renal, liver, cardiac and lung function but characterized them as mild to moderate and well below the level permitting a diagnosis of perinatal hypoxic ischemic encephalopathy.

In addition, Drs. Tharp and Ariagno agreed that Brett was responsive, that his muscle tone was good and that the marked improvement between what they observed and the lethargy and hypotonia reported at the time of delivery was inconsistent with a major hypoxic event at birth.

Dr. Ariagno acknowledged that there were indications of perinatal stress but concluded that it was not severe enough to have caused Brett's brain damage, a conclusion that he felt was buttressed by the timing of the neurological findings. Furthermore, he expressed the opinion that acidosis at the level present in Brett's case would not contribute at all to encephalopathy. In this connection, it should be noted that Dr. Schulman conceded that every baby has some acidosis and that even severely acidotic babies may have no lasting ill effects.

Drs. Tharp and Ariagno also agreed that neither the APGAR scores, the prenatal tracings nor Brett's bodily size and development were meaningful factors to be taken into account in formulating an opinion with respect to causation. In particular, Dr. Ariagno stated that normal fetal heart tracings indicate little

or nothing about the condition of the brain because the brain stem rather than the cortex controls the rate at which the heart beats. That is at least partially corroborated by Dr. Schulman's concessions that one of the mechanisms controlling the heart beat is the parasympathetic nerves in the brain stem and that babies born without any forebrain may have had perfectly normal tracings.

In addition, Dr. Tharp cited the results of the electroencephalogram tests as compelling evidence that Brett's condition was not attributable to a perinatal hypoxic event. He testified that children like Brett, who suffer brain damage at birth so severe that their initial EEGs show little brain activity, are virtually comatose for approximately one week, and that their brain activity improves over time. As previously noted, Brett was not comatose, and the three EEGs taken during his stay at Stanford showed a virtual absence of brain waves, strongly suggesting that the causative event most probably occurred a week or more prior to delivery. That conclusion was reinforced by Mrs. Campbell's statement to Dr. Tharp that she detected a decrease in fetal movement a week before Brett's birth. It was further reinforced by the contractions or false labor experienced by Mrs. Campbell earlier in her pregnancy which Dr. Tharp described as indicating a problem.

Finally, Dr. Ariagno testified that results of recent tests indicate that the condition of Brett's brain is deteriorating. Because brain injuries caused by hypoxia are

thought to be static, he expressed considerable doubt as to whether Brett's encephalopathy was caused by an hypoxic event.

In short, although Drs. Ariagno and Tharp expressed some uncertainty as to the precise cause of Brett's condition, they agreed that it was not due to an hypoxic event occurring during labor and delivery. The Court finds their qualifications more impressive than those of Dr. Rodriguez. The Court also finds that causation of brain injuries is a subject more within the realm of pediatric neurology than obstetrics and gynecology which is Dr. Schulman's specialty. In addition, Drs. Ariagno and Tharp had the advantage of personally examining Brett and making clinical observations. Finally, the Court finds the reasoning underlying their opinions to be more persuasive than the reasoning expressed by the plaintiffs' experts at least with respect to the causation issue.

CONCLUSION

For all of the foregoing reasons, the Court finds that the plaintiffs have not proven by a preponderance of the evidence that the failure of the medical personnel at Fort Ord to intervene to deliver Brett sooner was a proximate cause of his encephalopathy. Therefore, it is hereby ordered that judgment be entered in favor of the United States of America.

IT IS SO ORDERED.

_____
Ernest C. Torres
United States District Judge

April ___, 1994