Labor And Delivery: Nurses Ruled Not At Fault For Baby's Hypoxic Brain Ischemia.

The first question the judge had to ask the jury at the close of the trial was whether the labor and delivery staff nurse and the charge nurse were negligent.

The jury answered, "No." That was the end of it. The judge entered judgment in favor of the nurses and the hospital.

The mother, suing on her own behalf and the baby's behalf, filed an appeal. In an extremely detailed opinion, the Court of Appeals of Texas upheld the jury's verdict that the nurses were not at fault.

The Facts of the Case

The mother came to the hospital's emergency room in the early morning hours and was promptly admitted to the labor and delivery unit.

She had been getting her prenatal care at another hospital. The court pointed out her admission to this hospital was unplanned, she had no attending ob/gyn physician and brought with her none of her prenatal records. Hospital personnel did not know her prenatal history, the court pointed out, which included complaints of increased fetal activity on several occasions during the preceding three weeks.

2:58 a.m.

Within two or three minutes of arrival on the labor and delivery unit a staff nurse attached an external monitor and took the mother's vital signs. A few minutes later she repositioned the mother on her left side to improve blood flow to the fetus.

For the first ten minutes on the monitor the nurse attempted to obtain a baseline fetal heart rate tracing. The heart rate started in the 140 to 150 range.

3:35 a.m.

The heart rate soon increased to 160 to 170. The nurse considered this too high so she changed the mother's position again and started some oxygen.

The nurse did not follow the hospital's standard protocol calling for eight liters of O_2 for fetal tachycardia >170. The nurse later explained she did not know the mother's cardiac and pulmonary history and was wary of the effect eight liters might have on the mother.

3:47 a.m.

When the fetal heart rate rose to 180, following the hospital's standard protocol the nurse gave an IV bolus of Lactated Ringers, changed the mother's position, did a vaginal exam to assess whether any progress had occurred in labor and a few minutes later phoned an obstetrician.

Central to this case is the science of fetal monitoring.

Readings from a fetal heart monitor can reveal, among other things, whether the baby is in danger due to oxygen deprivation, known as hypoxia.

In such a case, the readings will show what are referred to as non-reassuring patterns that may reflect the fetal response to hypoxia and the continuing depletion of oxygen reserves which could result in brain damage.

A warning fetal heart rate pattern includes tachycardia (>160) while a non-reassuring pattern includes severe tachycardia (>179).

Severe tachycardia reflects a hypoxic fetus who is decompensating, meaning the fetus no longer has placental reserves or the ability to cope with the normal stress of labor.

Tachycardia per se is not an indication of fetal distress without other non-reassuring signs.

A reassuring sign is spontaneous fetal heart rate acceleration due to fetal movement, up to fifteen beats per minute above baseline for a period of fifteen seconds or longer.

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3:54 a.m.

It was charted fifty-six minutes after admission to the labor and delivery unit that an obstetrician gave approval over the phone for the nurse's actions so far. He approved four rather than eight liters of O_2 and the IV fluid infusion rate.

4:10 a.m.

Sixteen minutes later the nurse detected a subtle late deceleration. Tachycardia had increased to 190, but there was good heart-rate variability in the nurse's judgment.

4:15 a.m.

She nevertheless had the charge nurse take a look at the monitor strip. The two nurses did another vaginal exam.

4:55 a.m. – Obstetrician Arrives

They tried to call the obstetrician again almost two hours after admission to report on the patient. The obstetrician was arriving at the hospital and could not be reached on the phone, the court said.

When the obstetrician got to the unit he took over direct care of the patient. He at some point ruptured the mother's membrane so that an internal fetal scalp monitor could be installed.

When the membrane was ruptured the obstetrician got some meconium, which he did not see as cause for concern.

He decided to do a cesarean, but believed there was time for spinal anesthesia. He chose not to do the cesarean on an emergency basis under general anesthesia.

When the baby was born the umbilical cord was wrapped tightly around his neck. He showed no respiratory effort and was cyanotic. A few hours later he began having seizures. CT scans showed there was brain edema. He was severely disabled with cerebral palsy.

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EVIDENCE FOR THE MOTHER

Nurses Unfamiliar With Physiology of Labor

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The staff nurse and charge nurse were cross-examined in court at length looking for deficits in their basic knowledge and specialty training.

On the witness stand neither the charge nurse or the staff nurse could state the basic physiologic explanations for fetal heart-rate accelerations and decelerations.

The charge nurse was asked to draw an example of early deceleration monitor tracings, which she was unable to do to the satisfaction of one of the mother's nursing expert witnesses.

When to Notify Physician

Criticism of the nurses focused on the twenty-minute interval right after the mother came to the labor and delivery unit. As soon as the fetal heart rate rose above 160 a physician should have been notified, in the mother's expert's opinion, and certainly the fetal heart rate should not have climbed past 170 or past 180 without such action being taken.

Hospital Chain of Command

The mother's expert witness on nursing practice testified the hospital's chain-of-command policy was sound. The staff nurse just did not follow it, she believed.

When non-reassuring fetal heart tracings are seen, a nurse should initiate the chain of command as the advocate for the patient, the mother's expert witness said.

When setting policies, hospitals are required to anticipate that a nurse may have to go over the physician's head when the attending or the resident following the patient is not responding appropriately in the nurse's best professional judgment.

A nurse is entitled to expect validation for going to the charge nurse, or to the house supervisor, or for finding another resident or another staff physician, or even for going to the director of the medical service if the nurse believes it is necessary for the patient's welfare.

But the bottom line is, when there is a chain of command a nurse has to use it.

Early deceleration is benign. It is uniform and mirrors uterine contractions. It typically does not happen until labor has begun, as it is caused by pressure on the head of the fetus.

Causes for concern are variable decelerations and late decelerations.

Variable decelerations occur during the contraction cycle and are variable in shape rather than uniform. The cause is generally umbilical cord compression from the cord dropping down or being wrapped around the neck.

Late decelerations occur late in the contraction cycle. During the contraction the heart rate decelerates and does not return to baseline until after the contraction is completed. This is not reassuring.

When warning or non-reassuring patterns are seen, the patient should be repositioned, given IV fluids and given O_2 at eight to ten liters per minute. A vaginal exam should be done and a fetal scalp electrode attached if the membrane has ruptured.

Warning and non-reassuring signs require a nurse to consult with a physician at once.

COURT OF APPEALS OF TEXAS, 2001.

EVIDENCE FOR THE NURSES

Heart Monitor Tracings

One expert witness for the nurses, a specialist in maternal and fetal medicine, testified the fetal monitor strip did not indicate the patient had an emergency between the time she was admitted to the labor and delivery unit and the obstetrician arrived two hours later after being called in by the nurses.

Tachycardia / Variability

Another expert witness, the chair of a prominent university's department of ob/gyn medicine, testified that all of the information was correct that the nurses charted and relayed to the obstetrician. That is, the nurses were correct that the fetal heart rate was tachycardic overall and getting more so, but the fetal heart rate itself was variable as it should have been.

The staff nurse should not have decided on her own to give only four rather than eight liters of O_2, contrary to hospital protocols, but that likely did not harm the baby in the doctor's expert opinion.

Pre-Natal or Post-Natal Injury

As a rule in malpractice cases the patient has to produce scientific proof linking negligence with harm. The defendants have the option of producing evidence there was no cause-and-effect link between their actions and harm to the patient.

The consensus of the defendants' experts was that interuterine growth insufficiency or some unspecified fetal injury at least twelve hours before admission caused the baby to have seizures right after birth. The seizures, in turn, set off a cascade of intracranial cellular changes resulting in cerebral palsy.

One telling point was a pathologist's finding of macrophages in the placenta reacting to meconium, meaning that the meconium had to have been present well before the mother's admission.

The placental blood was highly acidotic, but there was no way to say it did not start as early as days before admission to the hospital, the pathologist testified. **Cruz v. Paso Del Norte Health Foundation, 44 S.W. 3d 622 (Tex. App., 2001).**