IN THE CIRCUIT COURT FOR
BALTIMORE COUNTY, MARYLAND

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RICHARD BOZEL and DIANE BOZEL)
As Parents and Next Friends of)
RYAN W. BOZEL, Infant,)
)
Plaintiffs,)
)
-vs-) Case No. 93-CV03895
) 50/377
ANTHONY S. COURPAS, M.D., and)
HENRY H. STARTZMAN, III, M.D.,)
et al.,)
)
Defendants.)

- - - -

DEPOSITION OF: MARK STEVEN SCHER, M.D.

- - - -

DATE: April 15, 1994
Friday, 10:10 a.m.

PLACE: Magee-Womens Hospital
Forbes Avenue and Halket Street
Pittsburgh, PA

TAKEN BY: Plaintiffs

REPORTED BY: Marla Frankenberg
Notary Public

ORIGINAL

DEPOSITION OF MARK STEVEN SCHER, M.D., a witness, called by the Plaintiffs for examination, in accordance with the Maryland Rules of Civil Procedure, taken by and before Marla Frankenberg, a Notary Public in and for the Commonwealth of Pennsylvania, at Magee-Womens Hospital, Forbes Avenue and Halket Street, Pittsburgh, Pennsylvania, on Friday, April 15, 1994, commencing at 10:10 a.m.

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APPEARANCES:

FOR THE PLAINTIFFS:
Philip C. Federico, Esquire
SCHOCHOR, FEDERICO AND STATON, P.A.
The Paulton, 1211 St. Paul Street
Baltimore, MD 21202

FOR THE DEFENDANT DR. STARTZMAN:
Susan C. Durbin, Esquire
MILES & STOCKBRIDGE, P.C.
10 Light Street
Baltimore, MD 21202-1487

FOR THE DEFENDANT GREATER BALTIMORE MEDICAL CENTER:
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* I N D E X *

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MARK STEVEN SCHER, M.D.,

having been duly sworn,

was examined and testified as follows:

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EXAMINATION

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Q. Doctor, your full name, please?

A. Mark Steven Scher, S-C-H-E-R.

Q. Have you ever had your deposition taken before as an expert witness in a medical malpractice case?

A. Yes.

Q. You have been kind enough to provide me with a copy of your curriculum vitae. To the best of your knowledge, is it accurate and up to date?

A. Yes.

Q. I want to mark this as Deposition Exhibit No. 1, and I would like the court reporter to attach it to the transcript as an exhibit.

Doctor, did you complete your medical school training and your residency training in an uninterrupted fashion?

A. Yes.

Q. And after your residency in pediatrics, what did you do?

A. I immediately went into a residency in neurology, child neurology.
Q. Did you complete that in an uninterrupted fashion?
A. Yes.
Q. And then what did you do?
A. Postdoctoral work or postgraduate work for two years at Stanford University.
Q. In what area of medicine?
A. In the area of neurology, specifically neonatal neurology, and electroencephalography.
Q. And then what did you do?
A. Then I began my present employment at the University of Pittsburgh as a faculty member until the present time, and I am still a faculty member.
Q. Do you know Ross Milley?
A. Yes.
Q. He was here, wasn't he?
A. Yes, he was.
Q. Did he work in your department?
A. We are in different divisions academically, although because I do so much neonatal neurology work, at a time I was actually on the same floor as his office, and we know each other real well.
Q. Do you regard him as an expert in neonatology?

A. Yes.
Q. And you have been here at the University of Pittsburgh as a pediatric neurologist since when?
A. Since 1983.
Q. When you initially came on board, what academic rank did you have?
A. Assistant professor.
Q. What's your current rank?
A. Associate professor with tenure.
Q. When were you made an associate?
A. I was made an associate I believe in '88 or '89, and then tenure came a year after that.
Q. Is there a full professorship here?
A. Yes, there is.
Q. When were you first eligible to be an associate professor?
A. In 1987.
Q. Are you eligible now to be made a full professor?
A. Based on the guidelines I am aware of, no.
Q. When will you be?
A. I don't know. I haven't actually looked at it. I figured I have a lot of work to do any way.
Q. Who is the chairman of your department?
A. Dr. Mark Sperling.

Q. Do you know if Dr. Sperling has ever been involved as an expert in a medical malpractice case?

A. I am unaware of that. I do not know one way or the other.

Q. Is there any area within pediatric neurology in which you have a special research interest or non-research interest, just interest in general?

A. I will answer in two parts. I have a research interest in the area of fetal and neonatal neurology, particularly as it relates to neurophysiology, because that is one of the specialties I have trained in; and secondly, for clinical reasons, although I have not published as much, I have an interest in epileptology or epilepsy in childhood.

Q. Have you ever done any significant research that would relate to hypoxic ischemic encephalopathy, birth asphyxia?

A. As an adjunct to papers I have written, there have been children with that diagnosis included in the patients I have discussed. I don't know if that answers your question. I don't know if I am being responsive.

Q. You are. You have never researched, done any

research on the cause, on cerebral palsy being caused by hypoxia or asphyxia. Is that fair?

A. That's fair. The only title of a paper in which cerebral palsy appears in it is a group of six children I published in Pediatrics in '91 that had nothing to do with asphyxia.

Q. Have you ever done any research that primarily dealt with birth asphyxia and the sequelae of birth asphyxia?

A. Not specifically, although many children are depressed at birth with an asphyxial picture. Once again, I apologize. I hope I am answering your question.

Q. You have never done any research that deals with children who have birth asphyxia with any permanent sequela as the focus of the research.

A. Correct.

Q. Have you ever done research with regard to intrauterine growth retardation or small for gestational age?

A. I am just beginning research with no publications, but I am exploring a number of different avenues in collaboration with other specialists.

Q. Is any of that research currently funded?

A. No.

Q. Let's talk about your license. You first became licensed by virtue of the National Board?

A Correct

Q Did you pass all portions on your first attempt?

A Yes.

Q I take it you are board certified in podiatric?

A Correct.

Q You passed all portions of that exam on your first attempt.

A The written podiatric I failed the first time and had to repeat it

Q Do you know which portion of the exam you were deficient at?

A No. All I know, it was the written portion.

Q After you became board certified in podiatric, I take it you sat for the board certification in neurology and psychiatric?

A No Actually, the sequence of boards, and there are three of them, in an unusual order, which I can summarize for you, if you like.

Q Won't you do that

A Initially, I took boards in electroencephalography as a resident in podiatric neurology in 1980

Q Did you pass those on your first attempt?

A Yes. That was a three-part board. I happened to be taking a fellowship while a resident in Minnesota.

I then went to Stanford as a fellow and there during my training prepared for both pediatrics and neurology. The neurology, I passed the written on the first time and the oral on the first time, and I was boarded in neurology by the spring of 1983; but as I mentioned before, my first attempt for pediatric written while a fellow was unsuccessful. So I waited, joined the faculty here in 1985 after what I felt was enough time reviewing general pediatrics as a faculty, took it and passed both the written and the orals in 1985. So by 1985 I had added pediatrics as my third and final board specialty.

Q Have you ever had your license or any privileges suspended, restricted, revoked, conditioned?

A No.

Q Have you ever been a defendant in a medical malpractice case?

A As a resident as at Cornell Medical Center, a pediatric resident, I was named along with the hospital and several other residents for a case that

I have been told by their risk management department has been completed and resolved.

Q. What are the allegations in the case, generally speaking?

A. In general, it was a child who was transferred from an intensive care setting to a general pediatric floor on which I was a resident one night, and the child tragically arrested and died.

Q. Were you deposed in that case?

A. No.

Q. I take it you know Abe Chutorian?

A. I met Dr. Chutorian when I was a medical student and I took an elective at Columbia Presbyterian under Sidney Carter, his boss, and I believe he was an attending for several of the weeks I was there.

Q. What were you doing at Cornell? Were you a resident at Cornell?

A. After 1976 I had spent two years at Cornell Medical Center as a pediatric resident.

Q. And did you have any interaction with Dr. Chutorian during that time frame?

A. He had not come to Cornell at that time.

Q. The residency program at New York Hospital, '77, '78, was it a two-year program?

A. Well, it potentially is a three-year program for those who are going straight pediatrics. I took two of those three years knowing I was going into child neurology, where the child neurology years, the equivalency of that pediatric residency requirement to take the boards.

Q. Any other cases in which you have been involved as a defendant or any other medical malpractice cases where your care has been involved, although you may not have been named individually?

A. Not to my knowledge, no.

Q. Do any of your publications on your CV relate to any of the issues in this case?

A. I stated it earlier in a general way, but once again, yes, they do when they involve the question of asphyxia versus more chronic issues, such as intrauterine growth retardation.

Q. Do you have any articles or publications that relate to that issue; that is, asphyxia versus chronic intrauterine growth retardation?

A. Not specifically, no.

Q. What do the majority of your articles deal with? Any categories you can sort of lay out for me?

A. Neonatal neurology.

Q. I need you to be a little bit more specific.
A. Within neonatal neurology, brain-damaged children in relationship to the use of neurophysiologic assessments, such as EEG, to help diagnose it and to prognosticate. I don't know if that helps.
Q. It does. When was the first time you were ever involved in a review of a medical malpractice case?
A. In 1984.
Q. Over the past ten years, can you give me an estimate of how many cases you have been involved in, in any way, shape or form? It may just be a phone call for an informal opinion. You may wind up testifying in court.

MS. DURBIN: Medical malpractice cases; correct?

BY MR. FEDERICO:

Q. Let's start with medical malpractice cases.
A. Ten or twelve a year.
Q. How many cases per year have you been involved in that are not medical malpractice cases?
A. None, to my knowledge.
Q. Of the ten to twelve cases a year for the last ten years, can you tell me what percent are on behalf of the defendant and what percent are on behalf of the

plaintiff?

A. Based on memory only, it's probably for plaintiff 25 percent over the last couple years, and the remainder 75 percent for defendant, whether that be hospital or physician.

Q. Now, have you ever done any work with a group that helps lawyers find doctors?

A. Yes, initially, actually, Dr. Milley himself was the one who gave them my name. Saponaro & Associates, who had an office in Ohio, used my services for neurologic questions. They were exclusively for plaintiff, for the benefit of the plaintiff, and I did that for about a year and a half.

Q. Have you ever worked with any other kind of groups?

A. No.

Q. Have you ever worked specifically with any insurance companies that insure physicians and hospitals?

A. No.

Q. Let's talk about Maryland. How many cases do you think you have done in Maryland?

A. One or two. I was just in Maryland for an arbitration hearing, and I don't even remember the name of it, but it was recently, and there was probably one other than that.

Q. Who was the lawyer for the plaintiff or the defendant?
A. I apologize. 1 have forgotten.
Q. How recently were you in Maryland?
A. About four months ago.
Q. Is that the last time you testified in a hearing or in court?
A. Yes.
Q. Now, generally speaking, what was the case about?
A. It was a similar question in that the issue was, is this child acutely or chronically damaged at the time of birth.
Q. Do you remember the name of either the plaintiff or any of the defendants?
A. I am sorry, I don't. I don't keep a record of it. I do remember the case and just generalities, but I don't remember the names.
Q. Do you remember the names of any of the -- well, who was the attorney you worked for?
A. There were several attorneys. I just don't remember their names.
Q. You don't remember any of their names?
A. No.
Q. How many cases have you testified in court the last

twelve months or arbitration?

A. Besides this one, I don't think I have gone to court in the last year.

Q. So this one case that you have done in the past year, you don't remember the names of any of the parties, you don't remember the names of any of the lawyers involved.

A. Offhand, no, I don't.

Q. Do you have that information somewhere?

A. No, because that case resolved, and I threw it out.

Q. Threw the material away?

A. Right.

Q. Do you remember the outcome of the case?

A. I was told by letter and on the phone that it was in favor of the defendant, but I believe that the plaintiff is appealing, but I was told that my involvement was not necessary.

Q. You're not going to be used?

A. They would recontact me if they needed me.

Q. And you have thrown out the whole file, despite the fact that you have been told the case is going to be appealed by the plaintiff.

A. Based upon memory, that's what I recall.

Q. Now, in that case, let's talk about that one case.

What was your total bill from the time you first were contacted until after you went through all the review, all the deposition and everything and then testified and after your testimony, total bill for your involvement?

A. I don't remember the exact quantity, but it was several thousand.

Q. Can we agree that it was more likely probably more than 5,000?

A. No.

Q. Now, how many times have you testified in arbitration or in court?

A. Twelve or fifteen times over this ten, eleven-year period.

Q. And other than the case we were just talking about, the name of which you can't remember, have you ever testified in Maryland?

A. No.

Q. Have you ever testified in the DC area?

A. No.

Q. Do you remember the names of any cases in which you have given trial testimony?

A. No, I don't, offhand.

Q. Do you have a record of that anywhere?

A. No, I don't.
Q. Do you remember the names of any of the lawyers you have ever worked with in the past as an expert witness in medical malpractice cases?
MS. DURBIN: Absent me?
BY MR. FEDERICO:
Q. Absent Sue. I know you have worked with Sue.
A. There is a Mr. Brown in New York State I happen to remember, because I was involved in a case that I testified at trial.
Q. New York is a big state. Can you narrow it down a little bit?
A. At the time, his practice was in Rochester, New York. I think he has moved to Buffalo, but at the time that I represented his client he was practicing in Rochester.
Q. Were you on the plaintiff's side or defense?
A. Defense. Another lawyer that I was not deposed nor went to trial but worked for the plaintiff that just resolved several months ago was in the state of Washington. It was a woman by the name of Massong, M-A-S-S-0-N-G. It's just very recently I just happened to remember the name since you asked.
Q. Have you ever done more than one or two cases with

any given law firm?
A. Yes.
Q. What firms?
A. One firm in Ohio, Jacobson, Maynard, Tuchman & Kaylor.
Q. Did you ever work with a lawyer named Andrew Buckner?
A. Yes.
Q. Do you know he's in Maryland now?
A. Yes.
Q. Have you looked at any of his Maryland cases since he's moved to Maryland?
A. I know that at least one case, I am currently looking at a case with him, a recent one.
Q. Is it an Erb's palsy case?
A. No.
Q. Depositions. How many depositions do you think you have done?
A. Over ten years, probably three or four dozen.
Q. Do you remember the names of any of those cases?
A. No, but obviously, some of them were this Jacobson group. I told you Massong was not. Brown, actually New York didn't depose me. It was just a trial testimony, but no.

Q. Have you ever given a deposition in a case from Maryland or DC?
A. I may have, but I don't recall.
Q. How much do you charge for your time?
A. $350 an hour.
Q. Now, if you reviewed ten to twelve cases a year on average, in these files that you get involved in, generally speaking, what is the average amount of hours you spend per file?
A. Usually the initial review is pretty brief, meaning that I am looking at the newborn records and perhaps child records, so it's maybe one or two hours.
Q. If it goes past the initial review, then how many hours do you on average put in?
A. It obviously varies whether I am given deposition testimony to read, because that takes a long time, but the subsequent medical records are real limited. It's whatever depositions are supplied to me, which is not always the case, that adds time, plus my own deposition preparation, such as today.
Q. Let's talk about this case. How many hours have you put into this case since 1991?
A. I can only approximate that it's approximately been I would say about eight to ten total.

Q. What is your charge for going to court?
A. For the time working, either with the lawyer prior to going in or in trial, would be the same fee per hour, and travel time, I have charged like $50 per hour just to get there and back and being away.
Q. Do you charge $50 an hour for the time you're in the other city but not on the stand?
A. No, a typical workday, eight-hour day, so whatever time is not truly devoted to work but just travel of the eight-hour day would be $50 an hour.
Q. What is the largest amount of money you have ever received for acting as an expert witness in a case?
A. I have no idea. I couldn't even begin to guess.
Q. More than a thousand?
A. Oh, yes.
Q. More than two?
A. Yes.
Q. More than five?
A. Yes.
Q. More than 7,500?
A. Possibly, but once again, it's only an approximation.
Q. More than ten?
A. No.

Q. In calendar year, 1993, it being tax day, you may know the answer to this, do you have an estimate for how much you earned as a forensic expert?

A. Yes, approximately 15 to 20 percent.

Q. Of?

A. Of my --

Q. Income?

A. Income.

Q. I sort of wish you didn't give it to me that way. I am more interested in the dollar figure.

A. Sure. About 25,000. That's approximately.

Q. I understand. I am not interested in your tax return. There are a lot of lawyers who are interested in tax returns. I happen to think they're privileged.

You're not going to give any standard of care opinion in this case; correct?

A. No.

Q. No, you're not going to give any standard of care opinion.

A. Excuse me. No, I am not going to give any standard of care opinions in this case.

Q. You haven't made any notes?

A. No.

Q. You haven't done any research?
A. No, I have not.
Q. How did Miss Durbin get your name, or whoever contacted you at the time?
A. Mr. Wesker, Mark Wesker, and I don't recall, it was 1991 that my first correspondence with him was in my file, so I don't remember at all.
Q. Do you usually inquire as to how people get your name before you agree to look at the case?
A. At the time I do, just to make sure it sounds legitimate, but I have never had anything illegitimate. It's usually a colleague. My testimony they have seen in other cases, either in deposition or they have been in trial or been in a case opposite me, that kind of stuff.
Q. And what we have before us is your complete file in this case?
A. Yes.
Q. Have you talked to anybody about this case other than Miss Durbin, Mr. Wesker or maybe Mr. Gately?
A. Not Mr. Gately, but those two other attorneys are the only people I have talked to about this case.
Q. Doctor, for purposes of the record, the medical records that you have reviewed in this case would be

the extract packet, and I would like to mark the index as Deposition Exhibit No. 2. I want a copy of the index attached.

The other records seem to be two other sets of records here, and they both look like they were from Delray School. Are these the same records, or are they different records?

A. They are a duplicate.

Q. And the most recent record in this Delray School packet is what?

A. It's dated 3-1-94.

Q. And other than those records, you have not seen any records on Ryan Bozel; is that correct?

A. That's correct.

MS. DURBIN: Aside from the radiographs.

BY MR. FEDERICO:

Q. We'll get to those. Why don't we do the radiographs now. With regard to the radiographs, first of all, are you board certified in radiology?

A. No.

Q. Do you hold yourself out as an expert in neuroradiology?

A. No.

Q. Customarily, Doctor, do you review your own CAT

scans and ultrasounds on children, or do you rely on the reports as generated by the neuroradiologist?

A. I usually rely on the official report, but I review all scans of my patients myself.

Q. If there was some discrepancy, you would have a tendency to rely on your colleague who specializes in that area, unless you felt they were grossly out of line?

MS. DURBIN: Generally speaking.

THE WITNESS: Generally speaking, that's correct. They don't even have to be grossly out of line, but generally I would rely on their expertise.

BY MR. FEDERICO:

Q. Now, what films have you looked at?

A. I have looked at ultrasounds for Ryan obtained in the newborn period on the 20th and the 24th of February, and March 2nd, I believe. And then I looked at a CT scan obtained in the newborn nursery, and I do forget the date of the CT, but it was just one CT.

Q. I think it was the 26th.

A. That's correct. I believe it was the 26th, now that you mentioned it.

Q. In addition to those records and those films, the

only depositions you have reviewed in this case, as I understand it, are the depositions of Dr. Vanucci.

A. Yes.

Q. Do you know him?

A. Yes, I do.

Q. How do you know him?

A. Professionally, through our society.

Q. Have you ever testified in cases with him before where you both were involved in the case?

A. I may have, and I know we have been opposite each other as well, but there have been a number of times.

Q. A number of times you have all been in the same case?

A. Yes, at least two.

Q. Have you ever given his name to somebody?

A. Offhand, I don't think so.

Q. Do you know if he has ever given your name?

A. I have no idea.

Q. Do you know Dr. Steven Coker?

A. I know of him. I have never met him, really. At the meetings I have seen him, but we don't know each other personally.

Q. You have reviewed his deposition, too.

A. Correct.
Q. John Ross Milley, we have already talked about him. You know him, and you have reviewed his deposition?
A. Yes.
Q. And Henry Starsky?
A. I don't know him, but I have reviewed his deposition.
Q. Do you know any of the other witnesses in this case, other than the ones we have just talked about?
A. And Chutorian's deposition, we talked about Dr. Chutorian.
Q. Right.
A. I know him.
Q. Do you know anybody else who is a witness in this case?
A. No.
Q. Now, these letters, are these all the letters you ever received in this case?
A. Yes.
Q. For the record, we have letters from Miles & Stockbridge dated May 28th, 1991; January 22nd, 1992; March 16th, 1992; March 16th, 1994; April 8th, 1994; and April 12th, 1994. I would like to have these marked collectively as Plaintiff's 3 and

copies attached to the transcript.

Now, Doctor, I want to try to look at the scope of your opinion in this case. Are you going to be testifying as to what the cause of Ryan Bozel's current condition is?

A. Yes.

Q. Generally speaking, Doctor, when you are consulted as a pediatric neurologist, generally speaking, you're not consulted to examine a child within the neonatal time frame; is that fair? You have neonatologists here who usually are called to do that?

A. That's not true. For my purposes, I specifically consult with neonates when they are still neonates.

Q. What percentage of your patient population is neonatal?

A. It depends on the time of the year, as well as the week, but I round, meaning I attend rounds, with the neonatologists every day to ask questions about newborns of concern to them, and that's here at Magee Hospital. There is also a neonatal unit at Children's Hospital.

Q. Do you know a Marc Hermansen?

A. Oh, yes.

Q. Do you regard him as an expert in neonatology?
A. He is boarded in neonatology, and I consider him an expert, as I did Dr. Milley.
Q. Have you ever worked with him?
A. No. I think one time I did review a case that he referred my name to the attorney, on one occasion.
Q. With regard to the number of neonatal patients you see on an annual basis, what percentage of your patient population -- I understand some months you do more, some months you may do less, but on an annual basis, what percentage of your patient population is neonatal in nature?
A. Over 50 percent.
Q. Generally speaking, when you're called in, not as a forensic expert, in your practice, when you're called in to evaluate the cause of neurological problems in a child, generally speaking, you always, I would think, examine the child.
A. Yes.
Q. With regard to the scope of your opinions in this case, other than the issue of causation, what caused Ryan Bozel's injury, are you going to express any opinion as to this child's life expectancy?
A. I was not formally asked to render that opinion,

although I have discussed it with Miss Durbin but in only briefest of terms.

Q. You have never seen Ryan Bozel.

A. Correct.

Q. In terms of medical records, I think the most recent medical record, you have school records dating up until March of '94. The most recent medical record you have seen on this child is that of GBMC, the birth record, really.

A. That's correct.

Q. You don't have an opinion based on reasonable medical certainty, having not seen the child and having not seen any records on the child in the last six years, what the child's current condition is, do you?

MS. DURBIN: Objection.

THE WITNESS: I have some knowledge by asking Miss Durbin, as well as gleaning from the deposition testimony of those who have examined Ryan, Dr. Chutorian's comments, Dr. Coker's comments, but I myself have not looked at records, as you asked.

MS. DURBIN: You're talking medical records, right? You took aside the school records.

MR. FEDERICO: Yes, I took aside the school records.

MS. AYRES: The school records contain PT records and other stuff, quasi-medical records.

BY MR. FEDERICO:

Q. I think they're school records; I don't think they're medical records, but putting that whole issue aside, what I am getting at, Doctor, is you haven't seen any medical records since March of 1988, the birth records in this case; correct?

A. Correct.

MS. DURBIN: Objection.

BY MR. FEDERICO:

Q. And you haven't seen the child; correct? You've never seen this child.

A. Correct.

Q. And in order to form an opinion with specificity as to the child's current neurological condition, *you* would, generally speaking, want to see the child, would you not?

A. Yes.

MS. DURBIN: Phil, he's not going to be rendering an opinion as to future needs of this kid.

MR. FEDERICO: That's what I am getting

at. Good, save me a lot of time. Just so we're clear on the record, because I am trying to narrow down the scope of your opinion so I don't waste time, I'll just concentrate on what the scope is and ask you a lot of detail about that. That's what I'm getting at.

Standard of care is out. This child's future needs, life care plan, is out; is that correct, Sue?

MS. DURBIN: That's correct.

MR. FEDERICO: Life expectancy. Dr. Grossman is involved in this case as an expert for the defendant, I think, on that issue. Is that out, too?

MS. DURBIN: He is not going to be rendering an opinion as far as life expectancy.

MR. FEDERICO: Let me see if there is anything else I can eliminate to save time.

On the issue of this child's current condition with detail, can we agree he's not going to be expressing an opinion on that?

MS. DURBIN: I'm sorry?

MR. FEDERICO: This child's current condition, neurological physical condition, can we

agree he's not going to be expressing an opinion on that? If he is, I will ask him about it.

MS. DURBIN: Well, to the extent that it might relate to any of his causation opinions, but as far as what this kid's future needs are, things like that, he will not be rendering an opinion as to that.

BY MR. FEDERICO:

Q. Can we agree, Doctor, that at this point, having not seen enough medical records and having not seen the child, for example, you don't have an opinion as to whether or not this child will ever walk independently?

A. Correct.

Q. You just don't know one way or the other.

A. I don't know.

Q. And in terms of this child's other physical limitations similar to that, the use of his arms, the use of his hands, the ability to be able to do things, you don't have an opinion one way or the other, since you haven't seen enough records or haven't seen the child. Is that fair?

A. To render an opinion, that's fair, yes, that's correct.

Q. Let's deal with the current cognitive state of the child. Before we do that, with regard to the current physical state of this child, is it fair to say that you can't render a detailed opinion based on reasonable medical certainty, having not seen the child and having not seen current medical records on the child?

A. Correct.

Q. With regard to the child's current cognitive state, having not seen the child and having not seen medical records, can you render an opinion based on reasonable medical certainty as to the child's cognitive status, if you will?

A. Based on only the school records, I would still need more information, so the answer would be no.

Q. So other than causation, what caused Ryan Bozel's injury at birth and the sequelae associated with that injury, whatever the sequelae may be, that is the total scope of your opinion in this case. Is that fair?

A. Yes.

MS. DURBIN: That's fair.

BY MR. FEDERICO:

Q. Then let's concentrate on that. Doctor, have you

ever testified in a case where you were of the opinion that the child suffered a hypoxic ischemic brain injury?

A. Yes.

Q. On how many occasions?

A. Multiple, but I don't know the exact number.

Q. Do you remember the names of any of those cases?

A. No.

Q. Do you remember the names of any of the lawyers you dealt with on any of those cases?

A. Some of them were the lawyers I have already mentioned, but I don't recall any others.

Q. The majority of the times you have been asked to look at a case in the past that involves that issue, and that is fetal distress resulting in hypoxic ischemic brain injury, the majority of the time do you feel that the cause of the child's problem is hypoxia?

A. No.

Q. What percentage of the time over the past ten years looking at ten to twelve cases a year?

A. Let me addend it when I said no. You said hypoxia, but hypoxia ischemia I put together, because 1 don't want to be totally academic about it, but I would

say, I have no idea of percentages.

Q. With regard to hypoxic brain injury, can we agree that in determining whether or not a child has suffered hypoxic brain injury, one of the things you need to look at in terms of causation is what happened during the prenatal course, as well as what happened during labor and delivery?

A. Correct.

Q. And the other thing you need to look at is the child's condition at birth?

A. Correct.

Q. And then you need to look at the child's condition within the first couple days after birth.

A. Correct. I would extend that to first couple of weeks, but that's okay.

Q. Now, with regard to hypoxic ischemic brain injury, what are the signs and/or symptoms you would expect to see during the prenatal course, if any?

A. Your last phrase is accurate, because if any means there are babies who are totally asymptomatic who might have had antepartum, before labor and delivery, injury due to hypoxia and ischemia.

Apart from that silent group, there are children who can have abnormalities of level of

arousal and muscle tone and reflexes in general, and I can go over them in more detail, that reflect more an antepartum problem than an intrapartum problem.

Then there is another group that have depression at birth because they have been stressed during labor and delivery, and I think that's relevant to Ryan Bozel. It's difficult during the immediate birth history to know until the smoke clears what's going on, apart from whether damage was caused.

And then there is a group that are clearly not appearing acutely depressed at birth who have chronic changes on their exam that suggest antepartum. I am just giving you the outline.

Q. I understand. Ryan Bozel wouldn't fall into the last category that you just described.

A. No.

Q. Now, what are the signs or symptoms that you would typically see during labor and delivery in a child who had hypoxic ischemic encephalopathy? What sort of things would you expect to see? Or would you --

A. I'm sorry. Go ahead. Finish your question.

Q. Or would you defer to a obstetrician in that regard?

A. I certainly would like to know the obstetrician's

interpretation of fetal heart rate tracings, which I don't do, and the details of the management of their patient or patients, the mother and child; but my impression would be based on my neurological assessment of the child.

If, indeed, the child appeared decreased in level of arousal, I use the determine depression, which involves that, too, alteration in reflexes of the newborn period, and muscle tone, that potentially involves an acute process. Whether that process ends with my saying that also caused damage, I don't know yet.

Q. With regard to the labor and delivery time frame, can we agree, sir, that a child who is undergoing fetal distress in utero is more likely to develop a hypoxic brain injury than one who is not undergoing fetal distress?

MS. DURBIN: Objection. I am unclear to that. Do you mean at the time of birth or just generally speaking if they have a hypoxic injury occurring during birth, whether at the time of birth, despite anything that might happen?

BY MR. FEDERICO:

Q. If there is fetal distress during labor and

delivery, are those patients more likely to develop hypoxic brain injury than fetuses who are not subject to fetal distress during labor and delivery?

A. No, I don't believe they are more likely to have caused damage, because my response to that is that most children who have had abnormalities during the prelabor period, before labor and delivery, are asymptomatic.

Q. Okay, so is it your testimony that being exposed to fetal distress does not increase the risk of hypoxic brain injury?

A. When you compare it to another group that I believe is a larger group, no.

Q. Just generally speaking, forget about my comparisons. I am not very articulate. Let's keep it real simple. Is it your testimony that fetal distress does not increase the likelihood of hypoxic brain injury?

MS. DURBIN: Objection. Asked and answered.

THE WITNESS: I think I have answered that.

BY MR. FEDERICO:

Q. I don't understand your answer, so you're going to

have to try and explain your answer to me, sir.

A. The premise is based on the total number of kids who have had hypoxic ischemic injury sometime after conception, and you have asked me to state is it more likely that the fetal distress, is it more likely that that group will have damage than those who didn't have distress. I'm rephrasing what you asked.

Q. That's not my question. This is my question. Generally speaking, does fetal distress put a fetus at greater risk for hypoxic brain injury? That's my question.

A. Yes.

Q. Why?

A. Hypothetically or in general, they may have been stressed beyond the reserve they had before they got into their stressful situation.

Q. What do you mean by that?

A. Although it doesn't happen all the time, and not every child who is in distress is going to have damage, how well they respond to it, it's important to know what may have happened before.

Q. When you say stressed beyond their reserve, what is the definition? What is your definition of reserve?

What do you mean by reserve?

A. That's pretty general. What I mean is their energy stores in their brain and their ability to physiologically handle the stressful intrapartum event.

As a hypothetical example, a child who has got completely normal antepartum development will do a lot better than a child who has had an antepartum stress, and that's the crux of my consultations is when is the child symptomatic from an injury or just a dysfunction from something predating labor and delivery.

Q. Essentially what you're talking about, when you say stressed beyond their reserve, you're talking about the child's reserve to be able to deal with exposure to hypoxia, lack of profusion.

A. Yes.

Q. And each child has a different amount of reserve in utero; correct?

A. Yes.

Q. And some have more reserve; some who have been exposed to certain things in the antenatal course may have less reserve to be able to deal with hypoxia; correct?

A. Correct.

Q. Now, what are the signs and symptoms of hypoxic brain injury which you would expect to see at birth the majority of the time?

A. I am going to have to be argumentative in a sense and say injury, because I don't think one can know whether it's dysfunction, which is transitory and resolves, versus injury.

I don't mean to be argumentative, but it's impossible for me to know that unless I have some -- I'll give you an example of an exception. As in Ryan Bozel's case, there was a problem seen structurally. That was this hemorrhagic infarction. I can talk about that in more detail.

Q. We'll get to that. Generally speaking, what are the signs and symptoms of hypoxic brain injury at birth, whether they be transient in nature or permanent in nature?

MS. AYRES: Do you mean chronic hypoxia that could have been gone on earlier in the pregnancy, or do you mean acute hypoxia?

BY MR. FEDERICO:

Q. Let's do this. I want to make this one o'clock flight. If you don't understand my question, tell

me.

A. That's what I said. I would rather use the term dysfunction rather than injury. Then I can answer it.

Q. Dysfunction is fine. Let's use dysfunction.

MS. DURBIN: I am going to state the same objection that Barbara did on the record, because I don't think it's clear from Phil's question whether the distinction between acute and chronic is being made. Go ahead and answer.

BY MR. FEDERICO:

Q. I am not interested. Go ahead, Doctor.

A. Those symptoms and signs I have mentioned in general are depression or alteration in arousal, alteration in muscle tone, alteration in developmental reflexes, the presence of seizures, focal neurologic findings, organ system dysfunction, imaging and physiologic abnormalities on laboratory studies. Those are just general, but that will give you a chance to ask me something more specific.

Q. With regard to Ryan Bozel, was there depression in arousal, muscle tone, reflexes?

A. Initially, yes.

Q. And we can agree that this child experienced

seizures within 12 to 24 hours of birth?

A. The records show five hours, but that's correct.

Q. And this child had focal neurological findings?

A. On neurologic exam, I am not sure that was documented for Ryan.

Q. You're not sure one way or the other?

A. Yeah. If you include the seizures, then yes.

Q. And this child clearly had organ dysfunction, which would include the child's platelet count, renal dysfunction, problem with the liver, decreased urine output?

A. Those features were abnormal in terms of organ system function.

Q. And Ryan also had abnormalities with regard to his imaging and physiological laboratory findings; correct?

A. Well, for imaging he did. I believe his EEG was normal, so in the case of Ryan, no, the one EEG that I have seen a report on was not abnormal, but his ultrasound and CT were abnormal.

Q. The medical records in this case document severe asphyxia with regard to Ryan Bozel. Do you agree with the medical records?

MS. DURBIN: Objection, just to the nature

of the unspecificity. Go ahead, Doctor.

THE WITNESS: I would disagree.

MR. FEDERICO: You would disagree. Can we agree that the people who were there taking care of Ryan Bozel were in a better position to make the determination as to whether or not this child experienced severe asphyxia as opposed to you?

MS. DURBIN: Objection.

THE WITNESS: I would say in general that the treating physicians are usually at an advantage to one who is reading after the fact.

BY MR. FEDERICO:

Q. What signs or symptoms would you typically see in the next couple of days or weeks in a situation where a child is born with hypoxic ischemic dysfunction?

A. I think that's important with regard to Ryan Bozel, but in general, if one is looking at the possibility that the dysfunction is based on something more recent, right before birth, then the child's depression, muscle tone, alteration of muscle tone would be commensurate with decreased function for many days to a week or more; and, conversely, other changes in tone which would increase tone, such as

with Ryan Bozel where there was by the second day an increase in muscle tone, does not follow that profile.

With respect to organ dysfunction, there is a time lag in terms of when the organ first looks to become dysfunctional and the time course of recovery if it's going to recover. That would suggest something more acute versus something more chronic outside of the brain, such as the kidneys.

The imaging findings would show findings of increasing swelling in the brain that would take a finite number of day or two to become visible. The EEG would show a more acute problem earlier in days, and then would resolve.

These are just general answers to the questions, just to be consistent with what I gave you before.

Q. Can we agree that Ryan Bozel experienced fetal distress shortly before birth?

A. Yes.

Q. Can we agree that Ryan Bozel experienced asphyxia at or around the time of birth?

A. Yes.

Q. Can we agree that Ryan Bozel experienced metabolic

acidosis at or around the time of birth?

A. Yes.

Q. Can we agree that Ryan Bozel experienced multi-organ dysfunction which was evident shortly after birth?

A. Yes.

Q. Can we agree that Ryan Bozel experienced abnormally low Apgars?

A. The one minute Apgar I would agree with. The seven at five minutes is not considered abnormally low.

Q. The Apgar of one at one minute is indicative of a child who is near death at the time they are born; correct?

A. That would be correct in a general sense.

Q. And the five minute Apgar here in this case, do you know what he got the points for? Can you find the Apgar?

A. Yeah, I can find, yeah, I'm sure.

Q. The five minute Apgar, the child did not receive a full score for muscle tone or reflex irritability or color; correct?

A. Correct.

Q. And that could be consistent with hypoxia, the effects of hypoxia.

A. Yes.

Q. Now, can we agree, sir, that the seizures at five hours would be consistent with the effects of hypoxia?

A. Hypoxia ischemia, yes.

MS. AYRES: Can I ask you again to clarify whether you're talking about chronic or acute?

BY MR. FEDERICO:

Q. No, you can't. You're not going to take my deposition for me.

Doctor, we can agree, can we not, sir, that this child experienced bradycardia shortly before birth?

A. That is documented, yes.

Q. And that bradycardia is consistent with hypoxia, is it not? Hypoxic ischemic dysfunction?

A. It can be.

Q. And this child had a full fontanel at or around the time of birth; correct?

A. On one entry, that's correct.

Q. What does a full fontanel indicate?

A. It could mean nothing. It could mean --

Q. Let's assume it's something.

A. It could mean cerebral edema.

Q. Cerebral edema would be consistent with hypoxic

injury at or about the time of birth.

A. No, actually, as I mentioned earlier, it takes a certain finite amount of time, several days to actually develop that, so if you saw it at the time of birth, 1 would extrapolate back a day or two.

Q. Were there examinations in this case which did not reveal a full fontanel?

A. Yes, I believe so.

Q. Was there only one reference to the full fontanel?

A. To my recollection, that's correct.

Q. Multiple references to a normal fontanel.

A. Yes.

Q. Was there ever a postnatal reference to a full fontanel, three, four, five, six days?

A. Yes, and I think that's the problem with Ryan Bozel, because he had his hemorrhagic infarction, which I think may have contributed to some of that notation.

Q. If one experiences a hypoxic ischemic brain injury at birth, generally speaking, how long after birth does it take to see a full fontanel if you're going to see a full fontanel?

MS. DURBIN: If the full fontanel is related to the hypoxic event at birth.

BY MR. FEDERICO:

Q. Right.
A. 48 to 72 hours.
Q. Was there a full fontanel in Ryan Bozel during the 48 to 72 hour time frame?
A. I don't remember during that time frame.
Q. Can we agree that IUGR, intrauterine growth retardation, is also referred to by some people as small for gestational age?
A. They're not synonymous, but that's correct. Sometimes it's used interchangeably, and it really shouldn't be.
Q. What is your definition of IUGR?
A. It's less than tenth percentile for growth, somatic growth, which may or may not include the head, but at least somatic growth of length and weight is below the tenth percentile for the child's gestational age.
Q. What is your definition of small for gestational age?
A. A child is below two standard deviations for somatic growth for that age, but it may not be related to a process that's pathologic in the uterus. In other words, it may be genetic or familial.
Q. Do you know the birth weights of the subsequent

Bozel children?

A. Offhand, I don't, no.

Q. Would that be of assistance to you to determine whether or not this child suffered with IUGR?

MS. DURBIN: Objection.

THE WITNESS: No, only because I know the details of Ryan's case, and it's consistent with other features besides somatic retardation in growth parameters.

BY MR. FEDERICO:

Q. Now, pediatric neurologists in general don't mean to suggest that, by virtue of the fact that a child has experienced IUGR, intrauterine growth retardation, that they necessarily are going to be retarded after birth; correct?

A. Not necessarily in all cases, that's correct.

Q.

do not experience mental retardation or cerebral palsy; correct?

A.

Q. As a matter of fact, Doctor, the literature would indicate that less than five percent, maybe less than two percent, depending on who you read, of children who experience intrauterine growth

retardation ever manifest any mental retardation, learning disability or cerebral palsy.

A. I would have to check that literature. I think you're overly low in your estimates. I agree that there are more children that appear normal, but I would be very hesitant to agree in general with what you just said.

Q. Without going and looking at the literature, based on your personal experience, can we agree that the number is probably less than ten percent?

A. Yes.

Q. Now, is there more than one type of intrauterine growth retardation?

A. With respect to cause?

Q. No, not with respect to cause, just in general.

A. Well, then, let me respond by saying, with respect to the infant, there are two types related to whether the brain is growing faster than the length and weight, and that's called unbalanced or asymmetric growth retardation, and the latter where it's balanced, where the head growth, meaning the brain growth, is reduced at the same rate as the height and weight.

Q. We have asymmetrical growth retardation and

symmetrical growth retardation; correct?

A. Correct.

Q. And you have defined both of those for us; correct?

A. Yes.

Q. Now, is a child more likely to experience cerebral palsy if they're asymmetrically growth retarded or symmetrically growth retarded, or does it not really matter?

A. 1 would say, in general, if you're of a symmetrical growth retardation, you're more likely to have a motor disability, such as cerebral palsy.

Q. Why?

A. It implies an earlier, more pervasive deprivation of energy stores or metabolic supply to the fetus during the latter half of the pregnancy, whereas the unbalanced type hypothetically is sparing the brain for a longer period of time during that latter half of the pregnancy.

Q. Is the difference significant? In other words, is an asymmetrically growth retarded child three times, five times more likely to develop cerebral palsy than a symmetrically growth retarded child, or is there not a significant difference?

A. Yes, it is a significant difference, and I don't

know the specific percentage.

Q. Can we agree that intrauterine growth retardation makes a child more susceptible to hypoxic ischemic brain injury?

A. Yes.

Q. And why is that, sir?

A. In general, I mentioned before, they have an organ, the brain being an organ, already stressed with a process that has prevented its optimal growth, and, therefore, if an additional stress is put on it, it will not respond in a favorable manner.

Q. So a child who is diagnosed prenatally with IUGR has less reserve and is more susceptible to hypoxic brain injury.

A. Yes.

Q. Generally speaking, are you ever consulted by obstetricians where they feel they're dealing prenatally with IUGR?

A. Yes.

Q. And generally speaking, is your advice to the obstetrician that, assuming the child is term, assuming there is not a concern with regard to prematurity, is your advice generally to the obstetrician to attempt to deliver the child before

the child experiences fetal distress?

A. That's not my experience clinically. I am not usually asked that question.

Q. If you were asked that question, would that be your advice?

MS. DURBIN: Objection.

BY MR. FEDERICO:

Q. Doesn't it logically follow?

A. It may logically follow. It may not be practical, knowing the situations I have been in where distress has not been anticipated.

Q. I know it's not anticipated, and I don't want to assume that it's anticipated, but if you have a child that is experiencing IUGR and there is a concern with regard to fetal distress, can we agree that you, in fact, as a pediatric neurologist, would recommend delivery as soon as possible --

MS. DURBIN: Objection.

MR. FEDERICO: -- in terms of alerting, if you will, an obstetrician as to the fact that this child has a decreased reserve and is more likely to suffer some sort of hypoxic injury?

MS. DURBIN: Objection.

THE WITNESS: No, I couldn't say that.

BY MR. FEDERICO:

Q. Why not?

A. It's too general, and it doesn't answer the various types of situations in which IUGR may occur, and I am not speaking as an expert in OB. That's the issue.

Q. I understand.

A. And also, my neonatal colleagues are the ones that are usually asked that question more than I am, although I have been involved.

The issue is usually so individualized as to what the obstetrician thinks might be contributing to the IUGR that concerns for optimal growth up to a full-term gestational age, that may have a lot of bearing on when and how to deliver the child.

Q. Let me ask you this. You have told me that you do a lot of neonatal work. If you were consulted by an obstetrician who had a child experiencing IUGR, where there was decreased fetal movement and there was evidence of fetal distress, and they consulted you and asked you, do you think we ought to deliver as soon as possible, given those factors, what would your response be?

MS. DURBIN: Objection.

THE WITNESS: Deliver as soon as possible.

MR. FEDERICO: And can we agree that the longer you delay delivery in that factual scenario, the more likely it is that the child will experience a hypoxic ischemic injury?

MS. DURBIN: Objection.

THE WITNESS: I think it's too hypothetical. I think that the stress is not equivalent to damage, and that's where I have a problem in trying to respond.

BY MR. FEDERICO:

Q. If you have a child who is IUGR, who has experienced decreased fetal movement, who is now experiencing fetal distress, who we know by definition has less reserve, can we agree that the longer they are left in utero in the face of fetal distress, given all those other factors, the more likely it is they will experience hypoxic ischemic dysfunction, which may or may not result in permanent injury?

A. Yes.

Q. Now, on the issue of acute birth asphyxia, what are the signs and symptoms that one generally looks at to determine whether or not there is acute birth

asphyxia? I know we may have touched on some of them.

A Right. Depression of central nervous system function that requires the prolonged use of a ventilator for breathing for the child; depression or decrease in muscle tone that remains decreased for a period of a week with slow improvement after that; the onset of seizures that in a full-term infant will occur in the vast majority by 48 hours of age. We're limiting it to just exam findings?

Q. No, laboratory studies, blood gases.

A. The presence of significant acidosis, and I define that as 7.0; organ system dysfunction that suggests an onset that began at birth and then evolved and got worse over several days to a week of life, such as the kidney function and the liver function.

Q. Can moderate acute birth asphyxia in a child who is more susceptible to birth asphyxia cause permanent hypoxic ischemic brain injury?

MS. DURBIN: Objection to the term moderate.

MR. FEDERICO: In other words, can moderate birth asphyxia put this already compromised IUGR baby, can it push that baby over the edge,

resulting in permanent injury?

MS. AYRES: Objection.

THE WITNESS: I am not sure how I can grade for you mild through severe. Maybe you can help me with what you mean by moderate.

BY MR. FEDERICO:

Q. What is your definition of severe birth asphyxia?

A. A child who has no tone on muscle exam, has a total dependence on a ventilator, has contractible seizures, and has focal neurologic or diminished reflex findings on exam. That would fit in a severe category.

Q. I think you already testified that you disagree with the records in this case and do not believe that this child had severe asphyxia at birth; correct?

A. Well, you're limiting my responses to hypoxic ischemic encephalopathy, which in and of itself is limiting my testimony that I am willing to give here.

This child's neurologic examination was normal, but I don't think it falls under the rubric of post-asphyxial encephalopathy that you're asking me to define in terms of mild, moderate and severe; and I guess I might as well put it in the statement

now so you can respond accordingly.

Q. My question is very simple. I would object and move to strike the prior answer. My question is, you, Doctor, disagree with the medical records in this case which characterize this child's condition at birth as severe asphyxia.

A. As severe, I stated that, that's correct.

Q. Would you agree, Doctor, in your opinion, would you characterize this child's condition at birth as being a moderate asphyxia?

A. Just tell me what --

Q. Using your definition, whatever it is.

A. In terms of the pH, sure. I think that the pH would suggest something less than severe.

Q. I don't mean to quibble with you. I guess I do mean to quibble with you. I want to know if you will agree that this child was moderately asphyxic at birth.

There are three basic categories that I would like to deal with; mild, moderate, severe. We have already dealt out severe in your opinion. Now I am asking you, was this child moderately asphyxic at birth?

A. At the first hour of life or at the 24th hour of

life?

a. At or around the time of birth.

A. Moderately asphyxiated after resuscitation.

Q. Can we agree that the child was severely asphyxiated prior to resuscitation?

A. Yes.

Q. And remained moderately asphyxiated for how long after resuscitation?

A. 24 hours.

Q. Can we agree, Doctor, that a child who is experiencing IUGR and, therefore, likely a decreased reserve, who experiences severe asphyxia around the time of birth with moderate asphyxia for 24 hours thereafter is likely to develop some hypoxic brain injury?

MS. DURBIN: Objection,.

BY MR. FEDERICO:

Q. In other words, what I am really getting at is, the IUGR sets the kid up, but absent asphyxia, it's the asphyxia which pushes the child over the edge, which results in hypoxic ischemic brain injury.

A. No. I disagree.

Q. That can't happen?

A. Hypothetically, it might, but I think we're talking

about Ryan Bozel. I don't think it happened with him. I am more comfortable talking about how I interpreted his clinical profile after birth.

I have been trying to be understanding with your hypothetical questions, but I guess, if we can try to zoom in on Ryan, which I think you are as well. I don't mean to say you're trying to trap me, but when I admitted to severe, he needed resuscitation. He had an Apgar of one.

Q. Right.

A. That is not synonymous with brain damage.

Q. It may or may not be; right?

A. It may or may not be, that's right, but what I want to point out for the record, and I will --

Q. Doctor, there is not a question pending.

MS. DURBIN: Well, Phil --

MR. FEDERICO: Hold it.

MS. DURBIN: He's not done with his answer.

MR. FEDERICO: He is going to tell me wha his opinion is in this case, because he's very afraid that I will leave here and not know where he's coming from. I knew where he was coming from before I got here, which is why I am asking the

questions the way I am.

MS. DURBIN: Doctor, go ahead and finish.

THE WITNESS: No, if you want to rephrase your question again, I will respond to your question.

MR. FEDERICO: Doctor, generally speaking, you can have a situation where you have a child that is experiencing intrauterine growth retardation where at or around the time of birth they experience severe asphyxia, followed by moderate asphyxia, and it's the asphyxia that pushes the child over the edge, depletes the reserve, and causes permanent hypoxic brain injury. That can occur, can't it?

MS. DURBIN: Objection.

THE WITNESS: Hypothetically, it can, but there is no way that any doctor can really judge that, based on the laboratory tools we have.

BY MR. FEDERICO:

Q. If we take a group of children who have IUGR, I think we have agreed that roughly 90 percent of those are going to be born without any permanent neurological brain injury. Is that fair?

A. Yes.

Q. If we take that set of babies with IUGR and expose

half of those babies to severe hypoxia at or around the time of birth, followed by moderate hypoxia for the next 24 hours, and take the other half and expose them to no asphyxia whatsoever, can we agree that the first group is going to be more likely to develop hypoxic brain injury than the second group which was never exposed to any asphyxia?

MS. DURBIN: Objection. You can answer.

THE WITNESS: Yes.

BY MR. FEDERICO:

Q. Can you give me a percentage how many of those patients will suffer some permanent hypoxic injury?

A. No.

Q. Can we agree that Ryan Bozel's injury, generally speaking, is global in nature as opposed to just focal?

A. Correct.

Q. And can we agree that global brain injury is more consistent with hypoxic ischemic brain injury than focal injury?

A. No.

Q. So whether a child has global brain injury or focal brain injury doesn't help you one way or the other to determine whether or not the brain injury is

secondary to a hypoxic ischemic event.

A. Correct.

Q. And this child really has features both of global and focal brain injury; correct?

A. Correct.

Q. And with regard to focal brain injury, we can agree that a cerebral infarction as a type of focal brain injury can occur as a result of hypoxic ischemic brain injury.

A. Yes.

a. Physiologically, as I understand it, what happens is decreased profusion can result in either vasospasm of the cerebral vessel or actual lack of blood flow into the vessel such that the vessel dies, and after the vessel dies, there is a significant bleed. It's very layman-like, I know, but is that an accurate understanding?

A. Not the vessel.

MS. DURBIN: Were you done with your question?

MR. FEDERICO: Yes. I was just going to say, if I'm not accurate, explain to me physiologically how this works.

MS. DURBIN: We're talking generally

speaking.

MR. FEDERICO: Yes.

THE WITNESS: The time course over which an injury may occur after a lack of oxygen, lack of blood flow, it first involves a deprivation or reduction, either partially or total, of blood flow, which may irreversibly damage the brain, and even with reprofusion after that deprivation of both the blood and the oxygen carried in the blood, there may be damage to brain tissue, not blood vessels; but the blood vessels themselves lack a certain integrity because of that, and they may leak, but there are situations in which ischemia may be more chronic versus more acute.

In the case of Ryan Bozel, we're dealing with a bone marrow that was suppressed over a long period of time, suggesting many months of ischemia hypoxia that was perhaps intermittent but nonetheless deprived of the brain of energy stores and secondarily affected the bone marrow, and the child's clotting abilities were compromised.

So the need to alter blood flow to the brain during a time of stress after birth, because the child was, as I have told you, not normal,

required increasing flow, which these blood vessels couldn't handle, and there was a hemorrhage.

Q. Can we agree, first of all, can we agree that, I know it's your opinion that Ryan Bozel suffered intermittent ischemia prior to labor and delivery; correct?

A. Correct.

Q. When did this intermittent ischemia first begin, based on reasonable medical certainty?

A. Sometime in the latter half of the pregnancy.

Q. Now, children with TUGR experience intermittent ischemia all the time which never manifests itself in permanent brain injury. That happens at least 90 plus percent of the time; correct?

A. Correct.

Q. And Ryan Bozel during labor and delivery experienced fetal distress; correct?

A. Yes.

Q. Ryan Bozel at birth was severely asphyxic; correct?

A. Yes.

Q. You can't tell me, based on reasonable medical certainty, if we took Ryan Bozel and delivered him two days before, where he had not experienced any fetal distress, and I want to you assume

physiologically he was not hypoxic at all at birth If that was the case, can you say with reasonable medical certainty that Ryan Bozel will have permanent brain injury today?

A Yes. I can say that he would have permanent brain injury today.

Q On what are you basing that opinion?

A The previous statement I told you that he has a balanced IUGR that's affected his brain growth from very early on. And that during this seemingly unremarkable pregnancy. I can't point to hypoxia during the antepartum period that definitively says what caused the growth retardation. I have no evidence of placental disease

We have talked only about the hypoxia that's at birth. Which I don't think is central to the child's brain injury I think it's central to the child's symptomatology as a newborn in the first day. But I have trouble finding an etiologic cause for why he is the way he is. And I guess you have limited me to hypoxia ischemia. And I'm not sure I know what's caused his brain damage. But certainly if you deliver him before he became distressed. I will repeat. He will have been just as brain

damaged.

Q. Just so I'm clear, you don't have an opinion based on reasonable medical certainty as to the cause of Ryan Bozel's brain injury. Is that fair?

MS. DURBIN: He stated his opinion.

MR. FEDERICO: Let him state it.

THE WITNESS: I will state it. I can only speculate and give a possibility based on historical fact that mother had a viral infection at a time when a symmetrical IUGR could have ensued. That seems a reasonable time course, but there are no viral cultures I admit to, nothing definitive to talk about an ongoing viral infection.

MR. FEDERICO: You can't say with reasonable medical certainty, I know there are a number of certain possibilities, but you can't say based on reasonable medical certainty in Ryan Bozel what caused his brain injury; correct?

MS. DURBIN: Objection. He stated it's a symmetrical growth retardation --

MR. FEDERICO: No.

MS. DURBIN: You're misconstruing his testimony.

MR. FEDERICO: He will correct me.

THE WITNESS: Timing I have told you. Cause I can't. I think that's what you're asking me.

BY MR. FEDERICO:

Q. Yes.

A. Etiology, I don't have an etiology that I can say beyond a shadow of a doubt, you know, medical, legal certainty, but it's clearly much, much earlier than the immediate intrapartum period.

Q. Let's talk about that. If you have IUGR that is going to retard the growth of the brain early on, is that more likely to result in permanent brain injury at birth?

A. Yes. We talked about that in another question.

Q. As I understand it, because I have been doing these depositions for a number of years, if the brain stops growing in utero midway through the pregnancy, then generally speaking, the majority of time at birth, you're going to have a small head. You're going to have a microcephaly; correct?

A. Maybe.

Q. The majority of the time.

A. No, no, not the majority of the time. Maybe. You can't say majority of the time. We're talking about

balanced decreased growth. If you want to say on top of that microcephaly, I would say no, not the majority of the time in IUGR kids who have balanced. They wouldn't be balanced. They would be asymmetric the other way with a smaller head.

Q. Does this child have symmetric or asymmetric growth retardation, in your opinion?

A. Symmetric.

Q. You don't have an opinion based on reasonable medical certainty what caused the IUGR; correct?

A. Beyond certainty, medical certainty, no.

Q. With regard to the onset of IUGR --

A. Yes.

Q. -- since you don't know what caused it, you can't say based on reasonable medical certainty when this IUGR began; correct?

A. I already stated I can. I said the timing is the latter half of the pregnancy and more likely than not involved the second trimester.

Q. On what do you base your opinion that it was the second trimester as opposed to the third if you don't know what caused it?

A. Because of the growth of the brain being equal to the height and weight in terms of reduction in

dimension.

Q. If we have a child who has not experienced IUGR, isn't the brain normally the same as the growth of the rest of the body in comparison, just in a normal child?

A. Be more specific. I am sorry.

Q. I am trying to be.

MS. AYRES: I think you just asked him whether a normal child is normal.

BY MR. FEDERICO:

Q. That's not what I meant to ask. What is the difference between a normal child, and I keep forgetting if this -- is this symmetric or asymmetric?

A. Symmetric.

Q. Now I got that. I've got to write that down. I've got a memory like a sieve. Symmetric growth retardation. What is the difference between the symmetrically growth retarded child at birth and the normal?

A. Well, the normal child will have by term portionally a larger head in terms of its rate of growth that last trimester than the height and weight.

Actually, the volume on size of the brain

is four-fold increased the last trimester, so as a body part, the head is doing a lot more comparative growth than the height and weight.

To see that lack of a bigger head tells me I got to go back. I got to go back even before the third trimester to put some time line on something I can only see as a viral infection in the mom very early.

Q. If the child is symmetrically growth retarded at birth, that in and of itself doesn't tell you that if there is permanent brain injury, it happened during the second trimester.

You can have a symmetrically growth retarded child who experiences something during labor and delivery, a ruptured cord, if you will, and they can have brain injury from what occurred during labor and delivery as opposed to what happened during the second trimester; correct?

MS. DURBIN: Objection.

THE WITNESS: That's one possibility.

MR. FEDERICO: You don't mean to suggest to me that just because this child has symmetric growth retardation, it had to begin in the second trimester because of the size of the child's brain

at birth; correct?

MS. AYRES: It meaning the IUGR?

THE WITNESS: That alone is a piece of the puzzle. We have not gotten to other issues that I think add to that argument.

MR. FEDERICO: And we will get to those. Symmetric growth retardation, the size of this kid's head at birth in and of itself doesn't place the injury in the second trimester; correct?

MS. DURBIN: Objection.

THE WITNESS: No, I have said it does.

BY MR. FEDERICO:

Q. But how does the size of this child's head -- we can agree that you can have symmetrically growth retarded children 90 percent of the time which have no injury; correct?

A Well, that's hypothetically what you asked me to consider as true, and I was willing to say that.

Q And the fact that a child has a small head, how does that put it in the second trimester as opposed to the third trimester, as opposed to during labor and delivery if there is a permanent injury?

MS. DURBIN: Can we go off the record?

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(Whereupon, there was a discussion off the record.)

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MR. FEDERICO: Symmetrical growth retardation in and of itself in Ryan Bozel does not permit to you say that the injury occurred during the second trimester; correct?

MS. DURBIN: Objection.

THE WITNESS: No. That's wrong. I have already answered that. I think it did start as early as the middle of the second trimester.

BY MR. FEDERICO:

Q. How does the symmetrical growth retardation in and of itself permit you to say, based on reasonable medical certainty, that this injury began in the second trimester, as opposed to transient ischemia, which was not causing brain injury?

A. Because the unbalanced or the asymmetric form tells you that the brain has gone through that third trimester, at least a portion of it, to jump ahead of height and weight in terms of rate of growth. The fact that that did not occur with Ryan dates it back earlier.

That last trimester is a tremendous amount

of explosion, if you will, of elements that increase that volume of the brain, and if you have growth retardation below the tenth percentile, including the head, then some process has taken up that that whole third trimester and probably before, knowing my knowledge of embryology, which compromised that brain.

Q. By your definition, Doctor, shouldn't every symmetrically growth retarded child at birth have permanent brain injury which began in the second trimester?

A. I can't say that. You asked me whether I would be more likely to think that a symmetric growth retarded baby would be more likely than a non-symmetric, and I admitted that. I can't say every. I can't say every, no.

Q. What you're saying is, you're saying that if a child is symmetrically growth retarded that, by definition, by, I guess, your medical analysis, that they would necessarily be experiencing brain injury beginning in the second trimester, which is why the brain is so small when they're born.

A. That's right.

Q. So they all should be brain injured.

A. No, not all.
Q. The majority of them.
A. Yes.
Q. So it's your testimony that the majority of all symmetrically growth retarded children should be brain injured. Is that your testimony?
A. No. I am willing to keep with what I stated before. If you compare it to the unsymmetric group, the unbalanced group, they are more likely.
Q. Let me ask you this. Is it your testimony, let's just take symmetric growth retarded children. First of all, let's talk about the number of cases of IUGR you have seen in your practice. How many do you see a year?
A. I have no idea. It's a fair number, but I don't have a number.
Q. More than ten, less than ten?
A. More than ten.
Q. More than 50, less than 50?
A. More than 50.
Q. More than 100, less than 100?
A. In a year, probably not.
Q. Somewhere between 50 and 100?
A. I am giving you a rough estimate, sure.

Q. I don't know.
A. I don't either.
Q. Is a fair estimate between 50 and 100 in your practice on an annual basis?
A. Yes.
Q. Of those IUGR babies, what percentage of those go on to have permanent brain injury?
A. I don't know. I'll tell you why I don't know. Because many of them have problems similar to Ryan, which I will admit to right up front, but they have all sorts of other situations that are antepartum as well, including placental disease or chromosomal disease or viral disease that makes it difficult for me -- I have never done a study to really give you a tabulation.
Q. Have you ever seen an IUGR baby get exposed to birth asphyxia and then subsequently experience permanent brain injury as a result?
A. As I would define a severe post-asphyxia syndrome, which we haven't gotten to. We have kind of touched and danced around it, but asphyxia is one thing. To see what in the child clinically is emerging over the next week is another.

In that situation, I have been unable to

tell the clinicians which is more predominant, the IUGR before and/or an acute complicated picture of an abruptio placenta with a major blood loss, for instance.

Q. You can agree that the IUGR makes the child more susceptible to hypoxic brain injury.

A. I have said that.

Q. And can we agree that sometimes it's difficult for you as a pediatric neurologist to tell whether or not the IUGR, absent the hypoxia, would have caused any brain injury?

A. Hypothetically, without discussing Ryan Bozel, yes. With Ryan Bozel, I have no problems in giving you my opinion.

Q. That's why you're here.

A. Right.

Q. Now, with regard to the symmetric growth retardation, in what percentage of those children who have permanent brain injury related to symmetric growth retardation does the permanent injury begin in the second trimester versus the third trimester versus during labor and delivery?

A. The vast majority are during the second trimester, by virtue of the lack of growth of that brain.

MR. FEDERICO: Now, the films in this case, is the doctor going to put these films up at the time of trial and talk about them?

MS. DURBIN: I haven't decided that yet.

THE WITNESS: If asked, I would be glad to.

MR. FEDERICO: I don't know whether or not to go through that exercise at this point in time.

THE WITNESS: Maybe to help, I would say I don't find any major disagreements with the official interpretations on the chart, and therefore, you can make your decision whether you need to ask me the questions.

BY MR FEDERICO:

Q Let me ask you this. Are your opinions in this case with regard to the films that you looked at different from any of the official reports?

A No.

Q Do the films in this case permit you to say, based on reasonable medical certainty, just the films alone, when the permanent brain injury in the child began?

A One focal area of injury began after birth during the neonatal period.

Q. Right.
A. And that's the hemorrhagic infarction that was documented on the second ultrasound and then the CT.
Q. Right.
A. That answers your question.
Q. Putting that aside, do the films or the reports form the basis for your opinion that this child had some brain injury prior to birth?
A. No.
Q. Now, with regard to the films, let's talk about that focal injury that you just testified occurred after birth. Can we agree that it's more likely than not that asphyxia or hypoxic ischemic injury contributed to that?
A. I guess as long as you understand, I think, from the antepartum period, not from the intrapartum period, because I think the bone marrow suppression was of chronic import that lasted weeks in utero.
Q. Generally speaking, if you have hypoxic ischemic injury that results in a cerebral infarction, I think you will agree, sir, will you not, that from the time of the actual deprivation of blood flow to the brain until the time that it manifests radiographically, generally speaking, it's about

to 48 hours. Isn't that true?

A. Yes, that's true.

Q. And if we look at this particular case, Doctor, and look at the ultrasound that was done I think the day of delivery or within 24 hours of delivery, it was normal; correct?

A. Correct.

Q. And then we look at the next ultrasound that was done, I believe it was two or three days later, was clearly abnormal; correct?

A. Correct.

Q. And that would suggest, would it not, that the hypoxic ischemic event which causes focal brain injury had occurred within 24 to 48 hours or 48 to 72 hours of the positive sonogram that was done?

A. No, you can't say that.

Q. More likely than not you can say that, can't you?

MS. DURBIN: Objection.

BY MR. FEDERICO:

Q. In other words, Doctor, this is my point. If you had permanent brain injury, a hypoxic ischemic brain injury in the second trimester which was going to cause a cerebral infarction, that when you did your first ultrasound, more likely than not you would see

evidence of some abnormality with regard to the infarction or the focal injury.

A. That's correct.

Q. And in this particular case, Doctor, when they did the first ultrasound, it was normal; correct?

A. Correct.

Q. And what would be more consistent with the radiographic findings in this case would be hypoxic ischemic injury at the time of birth where within 24 hours there was a normal ultrasound and thereafter there was an abnormal ultrasound; correct?

MS. DURBIN: You're saying just based on the films alone.

MR. FEDERICO: Based on the films alone.

MS. DURBIN: Without any clinical history.

BY MR. FEDERICO:

Q. Just based on the films alone regarding that one area of brain injury in this child, that would be a more consistent scenario.

A. Hypothetically, that would be a more consistent scenario if it matched with the clinical history, which it does not.

Q. The clinical history, Doctor, can we have more than one area of brain injury in Ryan Bozel?

A. Yes.

Q. Can we agree that, while the clinical history may not match up with the radiological findings with regard to that focal brain injury, the radiographic findings would suggest a focal injury that occurred around the time of birth?

MS. DURBIN: Objection.

BY MR. FEDERICO:

a. You can answer.

A. No. The only thing we can say is there was some sort of hemorrhagic event that occurred in the first several days of life. I don't know whether the event that caused that was at birth. Clearly at birth the child had an abnormal bone marrow profile that suggested clotting ability was compromised in this child.

Q. Can we agree that this child at birth, it was clear, was more susceptible to the effects of hypoxic ischemic injury than the average child?

MS. DURBIN: Objection.

THE WITNESS: Hypothetically, but Ryan didn't reflect a persistent severe profile, as 1 said, that would make that tenable. In fact, this child, paradoxically, increased his tone by the

second day and rapidly came off the ventilator and didn't have major multi-organ system involvement of involvement of an acute nature.

This kid does not fit into that profile that makes me comfortable saying that, that we're seeing a delay, and as you're asking me, asphyxia around the time of birth, which only occurred later. This child got into problems because of the bone marrow that was suppressed for many weeks.

BY MR. FEDERICO:

Q. This injury that's evident radiographically is objective evidence of a brain injury; correct?

A. Yes.

Q. And that objective evidence, if that brain injury that we see on these films occurred during the second trimester, more likely than not the first ultrasound in this case would have been abnormal; correct?

A. You're talking about the bleed itself?

Q. Yes.

A. Yes, sure.

Q. So more likely than not, the brain injury that we see on these films occurred at the time of birth or shortly thereafter.

A. No, I think, you keep trying to limit me to discuss an acute asphyxial event, and I see a different process here that stressed this brain in a number of different ways.

One was growth delay over a long period of time. Two was other organs that were compromised, the bone marrow, which then led after birth when this kid was sick to a further complication in the neonatal period, which was a hemorrhage in the right parietal area.

Q. The hemorrhage in the right parietal area, the abnormality that we see on the ultrasound and the CAT scan, we can agree that brain injury that we see on the films more likely than not occurred at or shortly after the time of birth.

A. In general, yes, but I have chosen after. I don't think at, because it's not consistent with the clinical history, the clinical exam of this kid.

Q. If this child was going to have severe hypoxic ischemic brain injury in the second trimester which was going to manifest itself in long-term, permanent brain injury, can we agree that, at the time of birth, more likely than not, the ultrasound should have been abnormal?

A. If it was hypoxic ischemic injury, which I told you I am not sure we have an etiology. Would it be more abnormal? Not necessarily. It could be a symmetric decrease in brain size which looks morphologically normal on sonogram.

Q. Let me ask you this. The majority of the time, if you have a symmetrically growth retarded child whose injury has occurred during the second trimester and you do an ultrasound at birth within 24 hours, the majority of the time is that cranial ultrasound going to be abnormal?

A. No.

Q. Is it your testimony that the majority of the time it's going to be normal?

A. Yes.

Q. If the brain injury is secondary to -- hypoxic ischemic brain injury. In other words, symmetrical growth retardation which you believe occurred during this second trimester in terms of brain injury --

A. Onset, yes.

Q. Onset, and that the brain injury is secondary to a hypoxic ischemic event during that time frame, at birth is it more likely than not within 24 hours the ultrasound will be abnormal?

A. Yes. No, no, no. It will be normal, will more likely be normal.

Q. Even if the injury is hypoxic?

A. Yes, because irrespective of timing, the most likely cause, the likely type of injury to the brain is a neuronal dropout or neuronal necrosis, which is diffuse, and therefore, looking at the scan itself would not be very helpful, because it morphologically would show you the structures you are expecting to see.

Q. This child had a normal head circumstance at the time of birth?

A. Normal? No. It was symmetrical to its body weight and height but below the tenth percentile. That's not normal.

Q. Would you describe this child as microcephalic at birth?

A. For a full-term infant, yes.

Q. For this child.

A. No.

Q. Can we agree that IUGR babies who are microcephalic are more likely to have permanent brain injury than those who are not microcephalic, absent asphyxia?

A. Yes.

Q. Can we agree that the vast majority of symmetrical IUGR babies at birth who are not microcephalic do not develop brain injury?

A. In comparison, yes. In comparison to the microcephalic group, yes.

Q. Can we agree that if you had a situation where you have IUGR, decreased fetal movement, and fetal distress, and you were asked by an obstetrician as to whether or not to employ the use of Pitocin or Oxytocin, that if you were asked, you would not agree with that?

MS. DURBIN: Objection.

THE WITNESS: No, I wouldn't even render an opinion, because that's not my expertise.

MR. FEDERICO: What effect does the utilization of Oxytocin or Pitocin have on the fetus in utero?

MS. DURBIN: Objection.

THE WITNESS: I don't know.

MR. FEDERICO: Doesn't Oxytocin increase the forces of labor? Increase contractions, thereby increasing the forces of labor?

MS. DURBIN: Objection.

THE WITNESS: Once again, I have told you

at the outset that I would rather not discuss it as an expert in OB/GYN, because I am not.

MR. FEDERICO: I'm not asking you as an expert. In terms of causation, can we agree that increased contractions and the increased strength of contractions from a causation standpoint result in decreased profusion, generally speaking, to the fetus?

MS. DURBIN: Objection.

THE WITNESS: It does.

MR. FEDERICO: And can we agree that if you have a child who in utero is IUGR, who has decreased fetal movement, who is experiencing fetal distress, by giving that mother Oxytocin, it will more likely than not decrease profusion?

MS. DURBIN: Objection. Are you going to tell him how much was given, what the effect of it was, things like that?

MR. FEDERICO: You can answer.

THE WITNESS: I can't answer that.

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(Whereupon, there was a brief pause in the proceedings.)

- - - -

BY MR. FEDERICO:

Q. Doctor, I know you have been waiting for this. What is your opinion as to what caused Ryan Bozel's brain injury?

A. The process that caused his brain injury is related to, to my reading, a still undefined etiology that began during the second trimester which intermittently but persistently affected brain development, ultimately affecting other organs.

By the time it became apparent to treating physicians, the obstetrician, the injury had occurred.

The subsequent behavior of Ryan as a fetus and then as a newborn, in my opinion, is not related to a further injury but is simply a reflection of previous injury. In fact, by the presence of decreased fetal movements and by variability being decreased, it's my opinion that the damage had already occurred; but in looking at the child, not only the symmetrical growth retardation but the responses of his bone marrow and kidney function suggested a more chronic stress, and then on top of that, a focal injury ensued after birth because of the bone marrow suppression and clotting

abnormalities, which caused a hemorrhage in the right brain.

The profile of the child at birth, during the first five minutes, perhaps, suggested acute depression and then subsequently during the next hour or so suggested a child who was certainly asphyxiated, and I have no question about that.

Looking at the response of this child over the next 48 hours to needing a ventilator, other organ system function, and neurologic examination suggested something other than post-asphyxial encephalopathy syndrome.

Q. Is it your opinion that the asphyxia at or around the time of birth or shortly thereafter, be it severe, as the chart says, or moderate, as you say, is it your opinion that that asphyxia in no way caused or contributed to any brain injury Ryan Bozel suffered?

A. Yes, that's my opinion.

Q. So if he was delivered absent any asphyxia, you would have the same child we have today.

MS. DURBTN: Asked and answered. You can answer.

THE WITNESS: Yes, including the risk for

an injury due to the hemorrhage afterwards because of the previous bone marrow suppression and clotting abnormalities.

BY MR. FEDERICO:

Q. Doctor, they corrected the platelet problem. They diagnosed it within 24 hours of birth.

A. Yes.

Q. And began correcting it immediately; correct?

A. Yes.

Q. Now, let's talk about growth retardation in the antenatal period. Generally speaking, one of the parameters you look at when you as a pediatric neurologist look back is you look at the growth, based on the antenatal record, which often is reflected in a comparison of the height of the uterus versus gestational age; correct?

A. Correct.

Q. Now, looking at this case, Doctor, when did the second trimester end and the third trimester begin? Do you know?

A. I would say approximately October of '87.

Q. Was the beginning of the third trimester?

A. Yes.

Q. When was the due date?

A. I forget the EDC. The EDC was 2-22-88.
Q. And roughly 13 weeks to a trimester?
A. Yes.
Q. And if we back up 13 weeks from 2-22, do you know where that takes us?
A. To November.
Q. When in November?
A. The third week of November, second week of November.
Q. So can we agree that the third trimester began in the second to third week in November?
A. Probably, yes.
Q. And can we agree that from those antenatal records what we see is a normal growth rate from those records?
A. Yes.
Q. Can we agree, Doctor, that we have a normal growth rate from those records until we get to around February, around February 4th, end of January, beginning of February we have a normal growth rate?
A. Yes.
Q. And as of the end of January, beginning of February, there is an obvious plateau in growth rate with regard to the height of the uterus, and, for that matter, the amount of weight she is putting on.

MS. DURBIN: Objection,

THE WITNESS: Correct.

BY MR. FEDERICO:

Q. And that would be suggestive to you of the presence of intrauterine growth retardation?

A. Yes, knowing the limitations of fundal height, reflecting the trajectory of intrauterine growth retardation.

Q. Looking back at the prenatal record, that's what you look at, as well as the amount of weight the patient is gaining; correct?

A. I also know with high-risk perinatologists, they look at other things more than this.

Q. What do you look at?

A. I don't look at anything, because I don't make the diagnosis.

Q. What do they look at?

A. They look at the ultrasound. They look at serial ultrasounds weekly. If they have a mother they are suspecting is having an IUGR, the problem with this mom is that there was no reason to consider her high risk, and I don't think they were sonogramming more than two or three times, if I remember. You would have to ask an expert in OB. I would rather let

them discuss with you fundal height versus other measures.

Q. But I am asking you as a pediatric neurologist causation expert talking about when this IUGR began, certainly one of the things you're going to look at is the antenatal record.

A. Sure.

Q. And this antenatal record indicates that, in terms of objective evidence of growth retardation, from this record it suggests that there is no such evidence until the middle of the third trimester or towards the end of the third trimester.

A. Based on fundal height and mother's weight gain, that's correct.

Q. Are there any other antenatal factors that you look at, other than what is contained in the one-page antenatal record, to decide when the growth retardation started in this child?

A. I have answered the sonogram if it's available.

Q. It's not available in this case.

A. Then I have only the Monday morning quarterbacking of symmetrical growth retardation to then date back earlier than even the fundal height suggests a compromise in growth.

Q. You can have symmetrical growth retardation where the onset is during the third trimester, can you not?

A. Probably, yes.

Q. You can't say with reasonable medical certainty what percentage of symmetrical growth retardation children at birth have an onset during the second trimester as opposed to during the third trimester.

A. No. My bias is also, although without reasonable certainty, that a viral infection may have had something to do with it, because it's a time point for this mom that I can't ignore.

She got sick. So many mothers get sick but yet have normal children, I understand. This mother didn't have a normal child, so dating it back to the middle of the second trimester is a tractable although not probable cause.

Q. I understand. Have I covered the scope of your opinion as you anticipate you will be expressing it at the time of trial in this case, based on your review of the records and your prior discussions, if any, with counsel?

MS. AYRES: Objection.

THE WITNESS: Yes.

MR. FEDERICO: Sir, I thank you for your time. You have been very helpful.

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(Whereupon, the proceedings were concluded at 12:05 p.m.)

- - - -

COMMONWEALTH OF PENNSYLVANIA) CERTIFICATE

COUNTY OF ALLEGHENY) SS:

I, Marla Frankenberg, a Notary Public in and for the Commonwealth of Pennsylvania, do hereby certify that the witness, MARK STEVEN SCHER, M.D., was by me first duly sworn to testify to the truth, the whole truth, and nothing but the truth; that the foregoing deposition was taken at the time and place stated herein; and that the said deposition was recorded stenographically by me and then reduced to printing under my direction, and constitutes a true record of the testimony given by said witness.

I further certify that the inspection, reading and signing of said deposition were not waived by counsel for the respective parties and by the witness.

I further certify that I am not a relative, employee or attorney of any of the parties, or a relative or employee of either counsel, and that I am in no way interested directly or indirectly in this action.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal of office this 21st day of April, 1994.

Marla Frankenberg

Notary Public

Notarial Seal
Marla Frankenberg, Notary Public
Pittsburgh, Allegheny County
My Commission Expires Sept. 1, 1997
Member, Pennsylvania Association of Notaries

COMMONWEALTH OF PENNSYLVANIA)
COUNTY OF ALLEGHENY)

E R R A T A
S H E E T

I, MARK STEVEN SCHER, M.D., have read the foregoing pages of my deposition given on April 15, **1994**, and wish to make the following, if any, amendments, additions, deletions or corrections:

Pg. No. Line No. Change and reason for change:

In all other respects the transcript is true and correct.

_____
MARK STEVEN SCHER, M.D.

Subscribed and sworn to before me this
_____ day of _____, **1994.**

_____
Notary Public

(MF)

AUL, KARLOVITS & FULESDAY, INC.
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April 20, 1994

TO: Mark Steven Scher, M.D.
Developmental Neurophysiology Laboratory
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RE: DEPOSITION OF MARK STEVEN SCHER, M.D.

NOTICE OF NON-WAIVER OF SIGNATURE

Please read your deposition transcript. All corrections are to be noted on the preceding Errata Sheet.

Upon completion of the above, you must affix your signature on the Errata Sheet, and it is to then be notarized.

Please forward the signed original of the Errata Sheet to Mr. Federico for attachment to the original transcript, which is in his possession. Send a copy of same to Ms. Durbin and Ms. Ayres, and also a copy to me.

Please return the completed Errata Sheet within thirty (30) days of receipt hereof.

Marla Frankenberg
Court Reporter