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CIVIL DISTRICT COURT FOR THE: PARISH OF ORLEANS

STATE OF LOUISIANA

DIVISION "A"

HUEY P. NAQUIN, Individually and as Administrator of the Estate of His Minor Child, ROSS A. NAQUIN, and DENISE NAQUIN, Plaintiffs, vs. DR. JAMES MOORMAN, et al., Defendants.	CIVIL ACTION NUMBER 84-5817

The testimony of ELIAS CHALHUB, M.D., was taken at the offices of Charles A. Howard & Associates, Registered Professional Reporters, Riverview Plaza Tower, Suite 710, Mobile, Alabama, on the 5th day of November 1985, commencing at approximately 10:05 a.m.

APPEARANCES

POR THE PLAINTIFFS:

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BY: LAWRENCE S. KULLMAN, ESQUIRE

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DEBRA *AMOS* ISBELL, R.P.R.
COURT REPORTER

S T I P U L A T I O N

It is stipulated and agreed by and between the parties hereto, through their respective counsel, that the deposition of ELIAS CHALAUB, M.D., may be taken before Debra Amos Isbell, Notary Public for the State at Large, at the offices of Charles A. Howard & Associates, Mobile, Alabama, on November 5, 1985.

It is further stipulated and agreed that this deposition is taken pursuant to the Louisiana Rules of Civil Procedure. The provisions dealing with waiver of errors and irregularities as to the taking of the deposition apply fully to this deposition.

Notice of the deposition and any errors or irregularities therein and any objections to the qualifications of the officer before whom this deposition is taken are waived.

.The submission of the deposition to the witness for reading to or by him and the signing of the deposition by him is not waived.

Notice of filing of the deposition is waived. Filing of the original of the transcript of this deposition is waived.

Any other technicality or defect in the taking of this deposition not otherwise covered by the terms of this stipulation is waived.

* * * * * * * *

I, Debra Amos Isbell, Commissioner and Court Reporter, certify that on this date, as provided by the Louisiana Rules of Civil Procedure and the foregoing stipulation of counsel, there came before me at the offices of Charles A. Howard & Associates, Mobile, Alabama, OR the 5th day of November 1985, commencing at 10:05 a.m., ELXAS CHALHUB, M.D., witness in the above cause, for oral examination, whereupon the following proceedings were had:

ELIAS CHANDLER

the witness, after having first been duly sworn to tell the truth, the whole truth, and nothing but the truth, was examined and testified as follows:

EXAMINATION

BY MR. KULLMAN:

Q Dr. Chalhub, would you please give me your full name?

A Elias George Chalhub.

Q And where do you live, sir?

A Mobile, Alabama.

Q What is your occupation?

A I'm a physician.

Q Dr. Chalhub, I had asked your attorney, Mr. Penick, if you would bring your file with you to this deposition. Did you bring that with you today?

MR. PENICK:

He has notes of his examination.

A I brought the notes of my exam. And he said that the depositions I received from the records, either one of you would have. So I didn't bring those to duplicate those.

MR. KULLMAN:

Q Excuse me?

A I asked Mr. Penick if the hospital records and the depositions that I reviewed would be available. And he said they would. So I didn't bring another set.

Q What about your records of billing? Did you bring those with you?

A No. That's done separately, I usually don't keep that in a fila.

Q Do you have that at your office?

A No, probably not.

Q Where do you keep those records?

A Some of them are at home. Some of them are at the office. It depends on how it's done.

Q Did you check your office to see if you had records there?

A Well, I wasn't asked to bring any billing records..

MR. KULLMAN:

Mr. Penick?

MR. PENICK:

..I didn't ask him.

MR. KULLMAN:

Can we get those before we leave today?

MR. PENICK:

I'm not sure. I have to see where they are and what's available.

MR. KULLMAN:

Q Can we check with your office?

MR. PENICK:

I don't think that's relevant, frankly.

MR. KULLMAN:

I think it's discoverable, Whether it's relevant or not, I don't know,

Q Can you call your office and check and see what you have there, sir?

A I can.

MR. KULLMAN:

Can we do that now?

MR. PENICK:

.Yeah. That's all right, Go ahead.

(A DISCUSSION WAS HELD OFP THE RECORD.)

A They don't have the records there. Some of them I keep at home, Some of them I keep there. I'll be glad to tell you what I charge. Mr. Penick can tell you what's been charged in this case if you want.

MR. KULLMANr

Q Do you know what's been charged in this case?

A No, I don't, It's been a long time.

Q When did you first become involved in the case?

A I believe approximately six months to a year ago. Somewhere around there.

Q Sometime in 1984?

A 1985, I don't believe it was in 1984.

Q Beginning of '85?

A Probably the spring. I'm not trying to be vague. It's been relatively recent, within the past year.

Q Would the billing records reflect that?

A Probably not,

Q Who did you first meet with about this case?

A Mr. Penick,

Q Had you had discussions with anyone else before Hr. Penick?

A No.

Q Did you know Mr. Penick before you met him in connection with thie case?

A No, I didn't,

Q Do you know how Mr. Penick got your name?

Q Rad you ever worked on any cases, Dr. Chalhub, for any other attorneys of Mr. Penick's firm?

A No.

Q What about Dr. James Hoorman? Do you know Dr. Moorman?

A No, I don't.

Q Bad you ever heard of Dr. Hoorman before this case?

A No.

cases with St. Paul previously?

A I had worked with attorneys that I think represent St. Paul,

Q What about claims representatives?

A There have been some over the years.

Q What about in 19847

A I honestly don't know whether there have been any claims representatives. I think there was one, yes. --

Q What was his name?

A Archie -- he's here an Mobile. I can't

remember his last name, His first name is Archie.
Q What did thio Archie ask you to do7
A There was a child that I had treated from Jackson, Alabama, I believe, that had retained an attorney and had filed a malpractice case and asked me if I would review the case from a causation standpoint:
Q Were there allegations of obstetrical malpractice in that care?
A I don't know what the allegations were. I didn't see a copy of the complaint so I don't know.
Q Were there allegations of malpractice in that case?
A Obviously, yes, if it was filed.
Q Do you know who the plaintiff's attorney was in that case?
A No, I don't.
Q Did you give a deposition testimony in that cane?
A No.
Q Did you give a written report in that case?
A Yes.
Q Did you look at any other cases for St. Paul?
A As I told you, usually I don't look at cases

for St. Paul. I usually, when I do look at cases, it's an attorney who contacts me, So I look at the case for the attorney. Sometimes we don't even know who the insurance company is.

Q Did you consult with St. Paul through a claims representative in any other cases in 1984 and 1985?

A I may have. I just can't recall.

Q Have you ever consulted with any other claims representatives of St. Paul other than thie Archie man whose name you don't recall?

A As I said, occasionally a claims representative will call and send a case to look at. And that's happened over the past three or four years. That's very infrequent,

Q How many times do you think that occurred in 1984 from St. Paul?

A Maybe once or twice just like with this case.

Q When you say this case, which one are you referring?

A The one that you asked me about in Jackson, Alabama,.

Q What was the name of that child?

A It's been six months. I really don't know.

Q That's a child you treated?
A Yes.
Q What about in 19857 Have you been contacted by St. Paul claims representatives with respect to any cases?
A No. Thio was the case in 1985.
Q Any other cases in 1985 about which *you* have been contacted by St. Paul claims representatives?
A Again, it's hard for me to look at those, I just don't know. Xt may be an additional case. It's not very frequent,
Q What about in 1984? Were you contacted by St. Paul claims representatives in 1984?
A I think again, I've just answered it. It may have been one or two cases. But *it's* hard to be specific.
Q Do you know a claims representative named Bill Myers?
A No, not to my knowledge.
Q Do you know the names of any claims representatives of St. Paul in New Orleans?
A No.
Q Are you sure?

Well, if I do, I don't know them now. I mean, I don't know who the claims representatives are in New Orleans.

Q Do you know the names of any claims representatives in Mobile other than Archie?

A That's the only one I know of.

Q Where were you born, Dr. Chslhub?

A Boston, Massachusetts.

Q Did you go to school8 there?

A No. I moved from Boston when I was a year of age to West Palm Beach, Florida.

Q Mow long did you live there?

A Till I went to college.

Q Did you graduate from high school there7

A Yes, I did.

Q What high school?

A .Palm Beach High School.

Q Approximately what was your rank in your class when you graduated from high school?

A The top 20 percent. Again, it's a long time ago.

Q Where did you go to college?

A Emory University,

Q Did you graduate from Esory?
A Yes, I did.
Q In what year?
A 1965.
Q You started in '61?
A Yes.
Q And approximately what vas your rank in your graduating class from Emory?
A Again, somewhere in the top 20 percent. I don't recall.
Q Do you have any academic honors?
A You mean in terms of cum laude?
Q (Nodding affirmatively.)
A 1'11 have to look at the diploma. I don't remember.
Q Any other academic distinctions you recall?
A No.
Q What did your dad do, Dr. Chalhub?
A He was A businessman.
Q What kind of business?
A In the entertainment business.
Q What about your mom?
A She was unemployed.

Q She didn't work outside of the home?
A That's correct.
Q Any doctors in your family?
A What do you mean by family?
Q Cousins, uncles, brothers.
A Yes.
Q How many?
A We have a big family. So it depends on how far you want *to* go. Do you want first, second, third, fourth cousins?
Q Sure.
A I don't know whether I can remember -- I have a cousin who's a cardiovascular surgeon in Miami.
Q What's his name?
A Dr. Tradd, T-R-A-D-D.
MR. PENICX:
.Is this really relevant?
MR. KULLMAN:
I don't know.
MR. PENICKr
..I don't think it is.
MR. XULLMAN:
Q Any othero?

A There's one in Washington, D.C.
Q What's his name?
A Maloof, M-A-L-O-O-F.
Q M-A-L-O-O --
A 0 - 0 - Fa
Q What's his first name?
A I don't know.
Q What kind of doctor is he?
A It's an ophthamologist.
Q Any others you can think of?
A There's some others. I just can't think of how far away they are right now.

THE WITNESS:

Off the record just a mlnute.

(A DISCUSSION WAS HELD OFF THE RECORD .)

HR. KULLMAN:

Q Dr. Chalhub, when did you decide to go to medical school?
A Somewhere in my sophomore, junior year.
Q ..Of college?
A Uh-huh (positive response.)
Q When did you go to medical school?

A In 1965.
Q Where?
A At Emory University,
Q And when did you graduate?
A In 1969,
Q Were there any academic distinctions that you recall?
A No, not that I recall.
Q What did you decide to do after that?
A Well, I decided to get some training,
Q Where?
A Well, I went first to the University of North Carolina in Chapel Hill.
Q Why did you go there?
A Well, because I thought it was a good training program. An area of interest of mine was infectious diseases. And the chairman of the department of pediatrics there was a well recognized individual in training in that area.
Q That was a residency or a fellowship?
A No. That was an internship.
Q How long was the internahip for?
A One year.

Q Did you complete it?
A Yes.
Q What did you decide to do after that?
A Then I went to the National Institutes of Health in Btthesda, Maryland.
Q What was the purpose of that?
A To get further training in infectious diseases.
Q And what was the length -- wan it a fellowship, a residency?
A It's called a special research associate position, And it's with the National Institute of Allergy and Infectious Disease,
Q And how long was that to last?
A Two years.
Q Did you complete it?
A Yes, I did.
Q And what year did you complete that?
A I guess '71.
Q As of 1971, had you been involved in the privata-practice of medicine at all?
A No.
Q As of 1971, were you Board certified in any

specialty?

A NO.

Q What did you decide to do after that?

A I then went to Washington University in St. Louis,

Q For what purpose?

A To do a pediatric residency.

Q Why did you decide to do that?

A Well, because I thought it was the best pediatric residency at that time.

Q How long was it supposed to last?

A A year.

Q Did you complete it?

A Yes, I did.

Q Was that in '72?

A Yes.

Q And what did you decide to do after that?

A Then I did a year of adult neurology at Washington University at Barnes Hospital.

Q Why did you decide to do that?

A Because I wanted to become a neurologist.

Q Did you complete that?

A Yes.

Q In what year?
A I guess 1973.
Q As of 1973 were you Board certified in any fields?
A No.
Q What did you decide to do after that?
A Then I did two years of pediatric neurology,
Q And why did you decide to do that?
A Because I wanted to be a pediatric neurologist.
Q Where did you do it?
A At St. Louis.
Q Who was in charge of that program?
A Dr. Philip Dodge.
Q He's with Washington University?
A Yes.
Q Was he the person directly responsible for your training or was there someone else?
A He's the one that's directly responsible.
Q Were there others involved, too?
A Well, they have 21 neurologists on the staff. So yes.
Q And when did you complete that?

A I believe in 1975.

Q And what did you decide to do after that?

A Then I went to the University of Arkansas and taught on the full-time faculty in charge of child neurology.

Q Why did you decide to do that?

A Because I thought it was a good place to go, it was a reasonable offer and it was a challenging experience.

Q How long did you do that for?

A Two years.

Q Did you when leave there?

A Yes, I did.

Q Why did you leave?

A Because I wanted to live on the Gulf Coast.

Q Were you having any problems at the University of Arkansas when you left?

A In terms of what?

Q Your professional relations with anyone there?

A No. When I left, we had talked about expanding the department of neurology and pediatric neurology and that was'n in the plan of the dean. So I wanted to live on the Gulf Coast and it was the time

to move. I had no other problems.
Q What was the dean's name?
A He's since resigned. I can't recall his name.
Q Did you have any other disagreements with the dean that you recall?
A No.
Q When did you leave the University of Arkansas?
A I believe 1978.
Q And where did you go?
A I came to Mobile.
Q And what did you do?
A I did pediatric neurology. I was on the staff at the University of South Alabama and also in private practice.
Q Were you in private practice on your own or with a group?
A No. I was basically on my own. I shared an office with in adult neurologist.
Q What was his name?
A Dr. Green.
Q What's his first name?
A Robert.
Q How long did you have that arrangement?

A Approximately a year, I think, give or take a few months.

Q Did you all take calls for each other?

A Yes.

Q When did that cease?

A Somewhere after a year.

Q What did you do then?

A I joined two other neurologists here,

Q Are they in the Neurologic Center?

A Yes.

Q And what year was that?

A I guess somewhere in '79, '80. Somewhere around that time.

Q Have you been with the Neurology Center ever since?

A Yes, I have.

Q Have you had any absences from the Neurology Center?

A I don't understand what you mean.

Q Hive you taken a leave of absence or taken time of€-for any reason other than vacations?

A They won't let me.

Q Prior to 1980, Dr. Chalhub, had you done any

consultation work for defendants in medical negligence cases?

A It's hard to remember that far back. There may have been an occasional case, but I just can't say. There may have been one or two cases, but certainly I don't believe that I was involved.

Q Approximately how many cases do you think that you've offered testimony in or given expert opinions in, Dr. Chalhub, in which there were claims of obstetrical negligence?

A You mean as a defense expert or as a plaintiff's expert?

Q Either way.

A Again, I'd just have to give you a ballpark figure. Because it's hard to -- it gets difficult because we do child abuse and there are other cases which you get involved with, DPS and so forth. So sometimes it's hard to separate those. And I can't in my mind keep those different. But I usually give about anywhere from three to five depositions a year. And maybe half of those are obstetrical case?. So that's about the closest I could come.

Q Two to three depositions a year in

obstetrical?

A Yeah, two to three, probably. Again, I don't know. And again, let me clarify it, I don't give expert testimony in obstetrical cases, I give it in neurological problems.

Q What does that mean?

A It means just what I said.

MR, PENICK:

He's not an expert in OB.

MR. KULLMAN:

I appreciate your testimony, Mr. Pcnick.

A Yeah; that's exactly right, I'm not an obstetrician. So I don't testify as an obstetrician.

MR. KULLMAN:

Q Is it your testimony, Dr. Chalhub, that you have never offered testimony or expert opinion as to the standard of care of an obstetrician?

A To the best of my knowledge. Certainly I think that sne makes comments concerning certain procedures and things dona in the total reflection of a case. But no, I've never testified as an obstetrical expert.

Q Isn't it true, Dr. Chalhub, that you have

testified or offered expert opinion in cases v
obstetrician has deviated from the standard of care?
A Oh, yes. But I have not testified as an
obstetrician.
Q As a neurologist, you've testified that in
your opinion, an obstetrician has deviated from the
standard of care; isn't that correct, sir?
A Oh, yes.
Q How often?
A Once.
Q Only once?
A That an obstetrician has deviated from the
standard of care? I believe so.
Q Do you recall the name of the child involved
in that case?
A No, not right now.
Q Do you recall the name of the attorney with
whom you were consulting in that case?
A Yes. Mr. McMath.
Q He was the plaintiff's attorney?
A Yes.
Q Did you give a report in that case?
A I don't remember. I don't think so.

Q Did you give a deposition in that case?
A Yes, I did.
Q Did you testify at trial?
A No. It's not gone to trial.
Q At the deposition, did you testify that it was your opinion that the obstetrician deviated from the standard of care?
A This was three or four years ago, I'd have to go back and look at it. A8 I recall, I usually don't get out of my area of expertise. So I would probably have testified on causation,
Q Isn't it true that you testified that the obstetrician deviated from the standard of care7
A I'd have to go back and look at it. I just don't know.
Q Wasn't that your opinion?
MR. PENICK!
I think he's answered that.
A I've tried to tell you that I can't tell you exactly. I'd have to go back and look at the deposition. My opinion was that the problem at birth in that child vas caused as a result of the delivery.
XR. KULLMAN:

Q Do you recall that your opinion was that the obstetrician had deviated from the standard of care?

A I don't recall. If you'll give me the deposition, I'll be glad to look at it.

Q Do you recall any other cases where you've offered opinions as to the standard of care rendered by an obstetrician?

A You mean that they deviated?

Q Or they didn't.

A Yeah. I think that I've testified, an I said, several times per year in terms of causation. I'm sorry. Maybe I didn't understand the question. Can you read the question again for me?

(REQUESTED PORTION OF RECORD READ.)

A No. As I said -- I'm sorry, I didn't understand the question. I usually don't testify in terms of the standard of care of an obstetrician. Mainly as a pediatric neurologist in terms of causation.

MR. KULLMAN:

Q ..But do you recall other cases where you have offered the opinion with respect to the standard of care of the obstetrician?

A No, not right now,

Q Do you know an attorney named Quiggle?

A Yes. Okay, There was an additional case.

Q Who was Hr. Quiggle?

A He's an attorney I think from North Little Rock.

Q Do you know Mr. Quiggle?

A No.

Q Have you consulted with Mr. Quiggle?

A By telephone,

Q What was that case about?

A That was an obstetrical case that he asked me to review. And I told him that I did not think that the problems at birth were related to the child's problems.

Q Did you offer opinions with respect to the standard of care of the obatetrfcian?

A Again, that's a long time ago. I don't recall. But as I recall, to the best of my knowledge, I had told him that I did not feel that the problems that the child had were a result of the birth,

Q Bid you offer an opinion wfth respect to the standard of care of the obstetrician?

A I don't know.

Q Any other cases that you recall where you expressed an opinion with respect to the standard of care of an obstetrician?

MR. PENICR:

Object to the use of the word 'other. in the question mince Dr. Chalhub has testified he does not recall in either of those other *two* cases whether or not he testified about obstetrical standards of care.

A Not that I can recall right now. I just forgot About Mr. Quiggle. Because I think that was the case that I told him I didn't think there was any relationship between the baby's problems and the problems at birth.

MR. KULLMANt

Q What about an attorney named Belli? Did you ever do any consultation for him?

A Yes.

Q What kind of case?

A It was a child that I treated here in Mobile. The name-of the baby is Amanda Arrington.

Q Does that involve claims of obstetrical negligence?

A I don't think so.

Q Do you know a plaintiff's attorney named Tom Davis?

A No.

Q Did you do any consultation work for attorneys in Jackson, Mississippi?

A Yes. Certain defense attorneys.

Q Can you name them for me?

A George Evans and Jimmy Reynolds.

Q In the last year, have you offered testimony on behalf of either of those attorneys in cases involving brain damaged babies?

A Yes, I believe. I do 'c know whether the case with Mr. Ewans was i 1985 or '84. I don'c recall.

Q In either of those cases, id you offer testimony with respect to the standard of care of the obstetrician involved?

A The case with Mr. Evans wasn't a case against an obstetrician. It was a baby that had a cardiac arrest in the nursery. So the answer is no.

Q Did you offer testimony with respect to the standard of care of the physicians involved in that case?

A Yes.

Q Were they neurologists?

A No.

Q What was their specialty?

A They were neonatologists.

Q Did you offer testimony with respect to whether or not they deviated from the standard of care?

A Again, I'd have to go back and look at the deposition. As I recall, again, it was mostly in terms of causation as to whether the cardiac arrest was related to the child's problems.

Q Didn't you also testify that in your opinion, the physicians had not deviated from the standard of care?

A I don't know. I'd have to get the deposition and see exactly what I stated so that we could be accurate,

Q What about Mr. Reynolds?

A Well, I have reviewed a case for him that I've not given a deposition in nor testified,

Q ,Have you given an opinion as to the standard of care of the doctor involved?

A Not in terms of the doctor. In terms of

causation.

Q My question is with respect to the doctor. Is the doctor an obstetrician?

A *Yes*, Re *is*.

Q And have you given him an opinion as to whether or not the doctor deviated from the standard of care?

A As I told you before, I usually don't testify in terms of whether an obstetricfan does his job appropriately. And what I usually review is whether the problem that the child had is related to the insult or the allegations of insult,

Q Is it your testimony, Dr. Chalhub, that you don't offer opinions as to the standard of care of obstetricians or neonatologists?

A No, I didn't nay that. I raid of obstetricians, I don't testify as to whether an obstetrician delivers a baby appropriately. Now, there arc certain areas, as I am a pediatrician and take care of babies, that I think I am able to state in terms of a standard of care of certain care rendered by neonatologists. And when that's the case and I feel that I have the ability to do that, I do it.

Q You've testified with respect to the standard of care of infant resuscitation?

A Yes, I believe so.

Q Did that case involve a neurologist?

A I don't know. I think the only case that I can recall right now is the case with Mr. Evans, I don't think a neurologist was involved.

Q Have you ever testified for the plaintiff that in your opinion, the physicians rendering an infant resuscitation had deviated from the standard of care?

A I just don't recall. I mean, I may have,

Q Isn't it true, Dr. Chalhub, that when you've been contacted by claims representatives for St. Paul Insurance Company, you have given them opinions as to whether or not the physician involved had deviated from the standard of care?

A As I said, usually that's not the case. Usually I will testify on my knowledge and area of expertise. And that's usually in causation.

Q Isn't it true that you have offered to claims representatives of St. Paul the opinion that a physician involved in a case in which they are involved hao deviated fros the standard of care?

A Certainly in other physicians where I feel like I'm able, as I've told you, to comment on that, surely. But as I've told you again, I don't usually review cases for claims representatives, It's usually for attorneys.

Q Haven't you commented on the standard of care in this case?

A I don't understand what you mean by the question.

Q Haven't you commented on the standard of care rendered by Dr. Moorman in this case?

A I haven't commented before at all.

Q You have never commented to anyone any opinion as to the standard of care rendered by Dr. Moorman in this case; is that your testimony?

A I have stated in this case in terms of what I think in terms of causation of this child's problem.

Q I understand that, Is it your testimony that you have never commented on the standard of care rendered by Rr. Moorman in this case to anyone?

A Not to my knowledge.

Q Since being asked to consult in this case, Dr. Chalhub, has Mr. Penick or other members of his firm

asked you to look at any other cases?

A I have looked at a case with Mr. Penick and another attorney. And I don't know whether it was before this case or after this case. It was approximately the same time.

Q What did that other case involve?

A I'll have to think. I believe it was a newborn, but I just can't remember the specifics. I think the name of the case was Blackwell.

Q Did you testify in that case?

A No, I didn't.

Q Did you give Mr. Penick a report in that case?

A A verbal report.

Q Did you give him a verbal report as to causation?

A I believe I did.

Q And what was your report?

A Well, I can't remember the case so I can't tell you.

Q Did you give him a verbal report with respect to the standard of care?

A I don't believe so.

Q Have you ever given an opinion as to the

standard of care rendered by a neurosurgeon?

A Yes, I have.

Q You're not a neurosurgeon, are you?

A No.

Q Have you ever consulted in any cases in which the plaintiffs' law firm of Cunningham, Bounds has been involved in Mobile?

A I don't understand what you mean by consulted.

Q Have you ever given opinions in medical negligence cases in which that firm has been involved?

A Yes, I have.

Q Can you recall the last one?

A Yes, I do,

Q What did that involve?

A That vas a child that had pyloric stenosis ab age four to six weeks, I believe, and had a cardiac arrest.

Q Did you offer testimony as to the standard of care rendered by the physicians in that case?

A Again, I think it was mostly in terms of vhat caused the cardias arrest. I can't recall. I'd have to get the testimony out to see exactly whether I made that statement. That was a good while ago.

Q Did you have an opinion as to the standard of care rendered by the physicians in that case?

A I did. I can't remember whether they had asked me that question specifically.

Q Did you offer that opinion to the attorney who consulted you?

A Yes, I did.

Q Any other cases that you recall involving that firm?

A Again, right now just to name them -- if you have them in mind, I'd be glad to comment on them. But they're the biggest firm in this town. So there may have been other cases. And most of those have been my patients that I take care of. So I can't really tell you. So I don't want to be inaccurate. But if you have the names, I'll be glad to try to recall them for you.

Q No, I don't have any names, sir.

A I think that's the only case that I have testified with that firm, to my knowledge. Now, there could be others. But right now that's the one that's been most recent.

Q Have you ever reviewed fatal heart monitor

tracings €or an attorney?

A No.

Q Arc you sure of that?

A Yes. I mean, I'm not an expert in fetal monitoring. So I don't review them,

Q Have you received training a8 a neuropathologist?

A *Yes.*

Q How much?

A Four months,

Q Where?

A At Washington University,

Q Bo you feel that you're qualified as an expert in neuropathology?

A No, I'm not a neuropathologist. But as a neurologist and individual that deals with looking at pathology in various disease states, one ha5 a certain amount of expertise. And it depends on that particular disease that you're involved in. And in some of those instances, I feel quits competent to look at pathology and make-comments. It's the same way with neurosurgical procedures. If you're involved in them and you know them, then you are able to comment on

certain standards within that area.

Q What about neuroradiology? Have you received training in neuroradiology?

A Yes. You receive training all through your neurological residency in neuroradiology.

Q Do you consider yourself an expert in neuroradiology?

A Well, I'm not a neuroradiologist. But I have a great daal of expertise within that area.

Q Do you have any greater training in neuroradiology than anyone else who's ever gone through a fellowship in neurology and pediatric neurology?

A I can't comment on that because I don't know what you're comparing it to.

Q Have you had any additional training in the field of neuroradiology that one would not expect any other pediatric neurologist to have had?

A Every training program is different. So I can't answer that question. I don't know what every other pediatric neurologist has ever had.

Q Have you had any additional training in the field of neuroradiology since you completed your training in pediatric neurology?

A Yes. It's a continuing education process. One goes to conferences. One attends conferences. One continues to take training in those areas.

Q Rave you received any certificates or any other indication of any completion of any other courses in the field of ncuroradiology since you completed your pediatric neurology fellowship?

A Yes, I have.

Q In what?

A They're just reviews of neuroradiology,

Q What certificates have you received?

A That's since 1971. I just can't tell you that right now.

Q When was the last time you received such a certificate?

A I don't know.

Q In 1985, Dr. Chalhub, can you tell me how many times you have reviewed cases involving brain damaged babies?

A There's no way for me to tell you that,

Q Other than this case, can you think of any other cases that you've reviewed?

A Yeah. I mean, there are other cases. You

know, again, the specifics are hard to relate unless I have the cases there.

Q Well, do you recall any of them that you reviewed?

MR, PENICK:

In 1985?

NR, KULLMAN:

Yes.

A And you're talking about just brain damaged newborns or such as in the Cane of Mr. Evans?

Q Either one.

A Well, I recall that case, as we've already talked about. I recall the case of the Cunninghan firm.

Q What case was that?

A The case you had asked me about,

Q What was the name of tha patient?

A Hinkle,

Q Hinkle. H-I-N-K-L-E?

A That's correct.

Q Any other.?

A There are others. I can't just give you those names. I don't keep a record.

Q Do you know anything about fetal heart monitor tracings?

MR. PENICK!

I don't know what you mean by anything. That's a very vague question. I object to the form of the question. If you can answer it, Doctor, go ahead.

A No, I can't answer the question.

MR, KULLMAN:

Q Do you know something about fetal heart monitor tracings?

MR. PENICK:

Same objection,

A What do you mean by something?

MR. KULLHAN:

Q What do you know about them?

MR. PENICK:

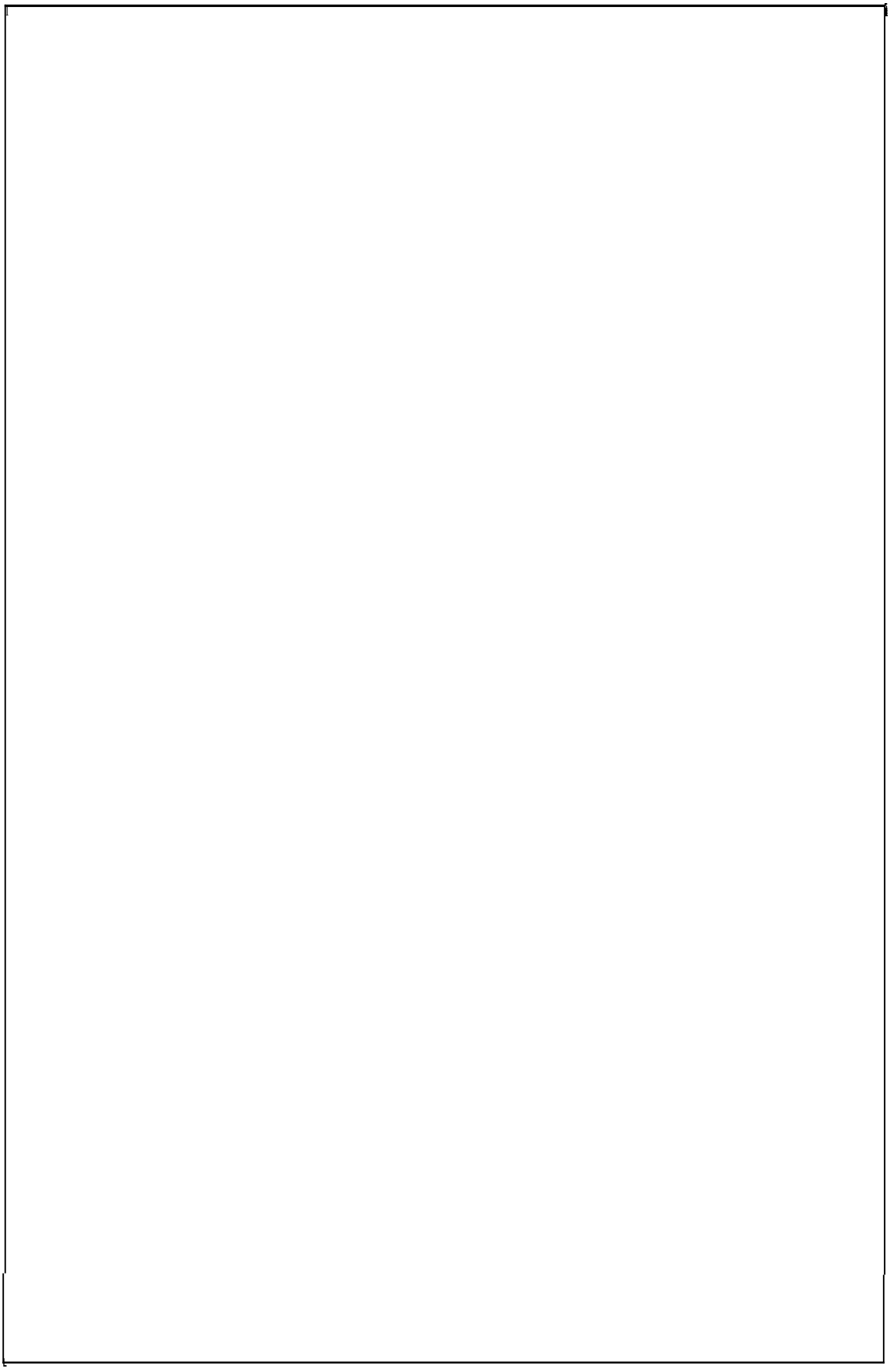
I can't let him answer that question. If you could be more specific, I'll let him answer.

MR. KULLMAN:

Q Do you know what fetal heart monitoring is meant to demonstrate7

A Yes.

Q What is that?



or particular question, ask him, I object and I'm instructing this witness not to answer the question.

MR, KULLMAN:

Q Dr. Chalhub, are you aware of some commonly described fetal heart patterns?

A Which ones9

Q Any.

MR. PENICK:

I make the name objection, Doctor, if you can answer that question --

A I can't answer it.

MR. KULLMAN:

Q That's fine. What types of pathologic change can hypoxia in the perinatal period cause in the fetal brain?

MR. PENICK:

Let me object to the form of the question. Because I need to know and I think the doctor does, too, one, whet do you mean by perinatal period? two, at what stage of gestation; and three, any other factors about the pregnancy or about the fetus that might be unusual or abnormal.

MR, KULLMAN:

Would you read back my question to Dr, Chalhub?

(REQUESTED PORTION OF RECORD READ,)

MR. PENICK:

Doctor, if you can answer that question as stated --

A No, I can't answer it as stated. Because there are too many variables. And one has to know the gestation of the fnfant, One has to know the type of birth process and the problems causing the hypoxia. One has to know the relative degree of hypoxia or ischemia, whether ischemia is involved. There are just too many variables. If you want to be specific, then we can talk in terms of a type of infant in a given situation with a given set of facts.

HR. RULLXAN:

Q .Would you agree that hypoxia occurring in the perinatal period causes three basic types of pathologic change in the fetal brain?

A What are the three basic things that you're talking about? I can't agree if I don't know what they are.

Q Do you agree with the statement?

A NO.

THE WITNESS:

Let's take a short break.

(A DISCUSSION WAS BELD OPF THE RECORD.)

MR, KULLMAN:

Q Dr. Chalhub, have you ever been involved in an investigation by the District Attorney's office here?

A Yes.

Q What was that about?

A What are you referring to?

Q Well, hov many investigations have you been involved in?

A Well, I don't even know whether it was an investigation. There was a case in which I te'stified in that I believe one of the witnesses stated that they felt that in some way I had inhibited his testimony, which of course was totally untrue. In fact, I never talked to the witness.

Q Was the witness a physician?

A Yes.

Q What was the physician's name?

A Dr. Chartrand.

Q What's his first name?
A I don't remember.
Q How do you spell his last name?
A C-H-A-R-T-R-A-N-D.
Q Where does Dr. Chartrand practice?
A He practices here in Mobile,
Q What kind of physician is he?
A He's a pediatrician.
Q Did you testify in a case in which Dr. Chartrand also testified?
A Yes.
Q Is that a case we've talked about previously?
A I don't remember whether we did or not.
Q What did that case involve?
A It was a child that came to an emergency room that had pneumonia and subsequently developed meningitis sepsis and shock and died.
Q Were you consulted in that case?
A I was asked to review the file, yes.
Q By whom?
A By Mr, Reeves.
Q Is he a defense attorney?
A Yes.

Q Did you testify in that case?
A Three times.
Q Did you offer an opinion as to the standard of care rendered by the physicians in that case?
A Yes. I did.
Q What physician83
A The emergency room physician.
Q Are you Board certified in emergency room medicine?
A No. But I'm Board certified in neurology and pediatrics and quite competent to speak on the area of baterial meningitis since that's my area of research.
Q What was the name of the plaintiff in that case?
A I don't recall now.
Q And why was the District Attorney involved?
A I really don't know. I believe that Dr. Chartrand had felt that in some way he was inhibited with his testimony. But he testified three times and didn't appear to be inhibited one way.
Q Did you watch him testify?
A No.
Q How do you know whether he appeared to be

inhibited or not?

A Well, I read his testimony,

Q Were you contacted by the District Attorney's office?

A No.

Q How do you know the District Attorney was involved?

A Because he wan at the time of the trial.

Q What happened?

A Well, the District Attorney asked me if I had talked with Dr. Chartrand about this case, which I had not, And if I had inhibited or intimidated him in any way, which I had not, And that was all there was to it.

Q So the District Attorney spoke to you about the case?

A .No. It wasn't the District Attorney. It was one of the assistants in his office,

Q I'm sorry. Did you say earlier you had not been contacted by the District Attorney's office about this case?

A You didn't ask me that until now. But I wasn't. This wan in court at the request of the judge.

And they asked a few questions, And that vas all there was to it. And there was no more to-do about it.

Q Have you been contacted by the District Attorney's office in any other casts?

A NO.

Q Have you been contacted by the U.S. Attorney in any other cases?

A Not that I'm aware of.

Q In the past three years, Dr. Chalhub, have you been a participant in any seminars as a speaker or moderator or author?

A You mean just in general?

Q Yes, sir.

A Oh, surely,

Q How many?

A You know, I teach at the University of South Alabama and previously was on more of a full-time basis, And I'm active as a child neurologist. I can't tell you. We do it all the time. I give conferences and lectures periodically, As well as to a number of lay groups and other continuing medical education groups,

Q Have you ever been a participant in any

conference involving insurance companies?

A No.

Q Rave you ever been a participant in Any conference or seminar involving defense attorneys?

A No.

Q Have you ever been to St. Paul, Minnesota?

A Yes.

Q When?

A When I looked for an internship.

Q Where were you looking?

A The University of Minnesota. I guess it's in St. Paul.

Q Have you ever been there since?

A I may have been to one conference, but I can't remember, in child neurology there I believe in St. Paul. But it just escaper ma right ROW.

Q .Did you ever speak to any representatives of St. Paul Insurance Company in St. Paul?

A No.

Q Have you been to Nev Orleans in connection with this case?

A Yes, I have.

Q How many times?

A Once.

Q When?

A To talk with Mr. Penick.

Q When was that?

A Somewhere around five or six months ago.

Q Was that the first time you had talked to Mr. Penick about this case?

A I may have talked with him over the phone before that. I can't recall right now.

Q Was that your only reason for going to New Orleans that time?

A No. I had discussed the other case that Mr. Penick was involved with at the same time.

Q Has your only reason to go to New Orleans that time to meet with Mr. Penick?

A No. I went also to go shopping and to have some entertainment.

Q Are you married?

A Yes.

Q Is this your first, second marriage?

A It's the first one.

Q Good. When you met with Mr. Penick about this case, were any other people present?

A No.
Q And this was sometime in the spring of '85?
A To the best of my knowledge, yes. It may have been the early summer. Really right now I can't recall.
Q Had you reviewed records involving this case before meeting with Mr. Penick at that time?
A Yes.
Q What records had you reviewed?
A Again, since the case has been evolving, to be perfectly accurate, I can't tell you what I've reviewed at each time. But I think at that time I had reviewed basically just the hospital records of the birth of the child and I believe Southern Baptist and several subsequent hospital admissions. And I may or may not have reviewed Dr. Moorman's deposition at that time. I don't know whether that vas at that time. I assume it was.
Q Had you reviewed the nurse's deposition?
A No.
Q Had you been advised of the conclusions of a medical review panel at that time?
A Yes.

Q What were you told?

A Again, I can't remember specifically. I could ask Mr. Penick and he could tell you what he told me.

Q What do you recall?

A I recall that the medical review panel had reviewed it and found that thera were problems with the cast in terns of the obstetrician involved.

Q What do you mean by problems with the case?

A Again, I don't know how the terminology was. I'm not familiar with the medical review panel function in Louisiana,

Q Did you understand that a panel had determined. that Dr. Moorman had deviated from the standard of care?

A I think they had given an opinion to that, yes.

Q You understood that?

A Yes.

Q Were you gfven information as to the basis of their opinion?

A No.

Q Did you ask for it?

A I've seen other review panel reports. And

basically there's very little basis. They either make a statement or they don't make a statement.

MR, KULLMAN:

Would you read back my question, please?

(REQUESTED PORTION OF RECORD READ.)

A No, not at that time, Generally speaking, when somebody asks for an opinion, I try to review the records unbiasedly And very objectively, And at that time I reviewed the records and made my ovn decision.

Q You made your own decision about the standard of care of Dr. Moorman?

A No, I didn't say that, I made my own decision in terms of causation.

Q Dr. Chalhub, we can take a break while you look through what you have here.

A No, we can go on.

Q I thought you wanted to look at that.

A No, Go ahead. We can continue.

Q Did you have the fetal heart monitor tracing?

A I think I had a portion of it at that time.

Q Did you ask for the whole thing?

A Yes,

Q Did you get it?

A I believe so.

Q Did you review it?

A Yes.

Q Had you reviewed it before you met with Hr. Penick?

A I think the portion that was sent to me in the records.

Q But not tha whole thing?

A Again, I don't know, to be accurate. I've reviewed it myself since that time.

MR. PENICK:

Xncidentally -- could we go off the record just a minute?

MR. KULLMAN:

Sure.

(A DISCUSSION WAS HELD OFF THE RECORD.)

XR. KULLMAN:

Q The first time you spoke with Mr. Penick about this case, Dr. Chalhub, had you reviewed the records at *that* time?

A As I raid, the records that I told you that I had available. And again, I can't recall exactly what

there was at that point in time, Except the birth records, the Baptist records that were available, And obviously those were not complete, And I believe Dr. Hoorman's deposition,

Q Have you spoken with Dr. Moorman about *this* case?

A No, I haven't,

Q Other than Mr. Penick, have you spoken with anyone else about the case?

A I'm sure that I have in terms *of* portions of the case with certain of my colleagues about the X-rays and so forth. But again, nobody in any detail about total aspects of the case.

Q What colleague did you speak to about X-rays?

A Well, we have a lot of colleagues. And again, there are radiologists that I may have shown the X-rays to. And right now I can't recall who that was.

MR. PENICK:

Larry, while you're hesitating here, let me ark you A question. And this is off the record,

(A DISCUSSION WAS RELD OFF THE RECORD.)

MR. PENICX:

During a break there was some discussion off the record about the records from Southern Baptist Hospital. And the record for the baby's admission there of 11/4/83 was produced by plaintiff's counsel. And there vas some discussion about the number of CAT scans that had been taken of this child, We are presently aware of A CAT scan that was taken at Baptist Hospital during the baby's first admission there in September of 1983. We're aware of a CAT scan that was run on the baby at Children'. Hospital in the spring of 1984 and a CAT scan that was run in Chattanooga on the baby in September of 1985. Let me just ask Dr, Chalhub, are you aware of any other CAT scans?

THE WITNESS:

No, I don't have any other CAT scans.

MR. KULLMANt

Q .The neuroradiologist you spoke to about this case, what did you show him?

A I showed him the CAT scan from Chattanooga, Tennessee,

Q .Any others?

A No. I didn't have them at the time,

Q Have you shown him those since?

A No.
Q And when did you do that?
A Sometime after it was obtained when I came back to Mobile.
Q Where did you show him those?
A It had to be at one of the hospitals. There are three neuroradiologists in town.
Q What are their names?
A Dr. Dempsey, Dr. Powell Williams and Dr. Hungerford.
Q How do you spell Hungerford?
A I don't know.
Q Do you recall which one of those three you showed these films to?
A Not right now, no, I don't.
Q Would you have any records to reflect that?
A No. This is just in passing. We exchange films all the time in cases, It was nothing formal,
Q Have you apoken to any claims representatives of St. Paul Insurance Company with respect to this case?
A Not to my knowledge.
Q Have you spoken to any obstetricians about

this case?

A I'm just trying to think. No.

Q Have you ever asked Mr. Penick the basis of the medical review panel opinion that Dr. Moorman had been negligent?

A I'm sure I have.

Q And what were you told?

A You know, I just can't recall. Why don't you ask Mr. Penick?

Q Did you consider what he told you in formulating your opinions in this case?

A No. I think, as I've already stated I based my opinion on an objective and impartial review of all of the records. I'm not here to represent Mr. Moorman nor the plaintiffs. I was asked to review this and give an opinion as to causation.

Q Have you sought the opinion of any obstetrician or perinatologist with respect to the fetal heart monitor tracings?

A No. I think that there are adequate experts who have testified extensively on the fetal heart monitor.

Q Is that the reason you have not sought the

opinion of an obstetrician or perinatologist as to the fetal heart monitor tracings?

A Well, I mean, I don't know all of the reasons. It's hard to go through all that, But I mean, basically that's an area in which I am not an expert. I certainly have looked at it. I look at them all the time. And you have adequate testimony in both sides in that area. And I accept that.

Q Do you look at fetal heart monitor tracings all the time?

A Certainly. Whenever I review babies.

Q Why do you review them?

A Just so I can say that I have seen then and they're of interest to me.

Q Why?

MR. PENICKt

I'm not sure that's relevant to this case. He's already covered that in his testimony.

MR. KULLMAN:

Q Uhy?

A Well, it's part of the record.

Q Is it significant?

A It depends on the situation,

Q That's why you review it?
A Certainly. I try to review every single piece of information of any patient I take care of.
Q Do you think you know when it's significant or not?
A I don't know how to answer that.
Q Well, do you think when you review a fetal heart monitor tracing that you can tall in your own mind whether you think it's significant?
A I usually have to rely on people who read them a11 the time and interpret them.
Q That's what you usually do?
A Uh-huh (positive response.)
Q who do you usually rely on7
A People that read them all the time like the obstetricians.
Q Who specifically do you rely on?
A Well, I mean, there are a lot of obstetricians.
Q Who?
A Well, I can't give you all the names of the obstetricians in Mobile.
Q Give me two who you have relied upon?

A In terms of what situation? I mean, I don't understand. You mean in terms of the cases -- you know, I practice full time. You mean in the children I taka care of or vhat?

Q Dr. Chalhub, a minute ago you told me you review fetal heart monitor tracings all the time.

A I review them, as I said, when I take care of babies and are looking at the particular child involved. And it's just like any other part of the record, the X-ray, the laboratory results, the fetal monitor, If it's available, I look at it.

Q But you don't feel that you're competent to tell whether it's significant or not?

A Oh, I didn't say that.

Q well, do you or don't you?

A Well, it depends on the situation. In terms of giving you an expert opinion and in terms of a fetal monitor, no, I'm not an expert in fetal monitor.

Q Do you always consult an obstetrician about fetal heart monitor tracings?

A In terms of what situation?

Q In terms of interpreting them to see if they're rignificant to you.

A For what situation?
Q In your treatment of children.
A I can't say that always, no.
Q Sometimes you just interpret them yourself; right?
A Well, X look at them. Okay? And that's part of, again? looking at any part of the record. And if I feel that X need additional information, then I usually ask for additional information.
Q Who have you asked?
A In terms of what? Asked about what?
Q Obstetricians About fetal heart monitor tracings?
A I'm sure at one time or another in the past eight years, I've probably asked every obstetrician in this town.
Q Name me two.
A Dr. Stephens, Dr. Koch.
Q How do you spell Koch?
A K-O-C-H.
Q How do you spell Stephens?
A Just like it sounds, S-T-E-P-H-E-H-S.
Q What is your opinion in this case after

reviewing the fetal heart monitor tracing as to what it shows?

A Well, it was a difficult tracing and I didn't feel like that I could make a valid opinion on that fetal monitor. So I had to rely on the other experts.

Q You never formed an opinion about it?

A No.

Q Why do you say it was a difficult tracing?

A Well, as I told you before, I'm not an expert in interpreting fetal monitor, There stems to be a lot of difference of opinion.

Q Why do you say that?

A Well, Dr. Giles has one opinion, Dr, Morrison has another opinion.

Q Do you have an opinion as to which one is tight?

A At least the testimony -- and again, usually when one looka at a fetal monitor -- at least I do -- I look for fetal well-being, And there's evidence of fetal well-being.

Q Do you have an opinion as to which of these two doctors is right in their interpretation of the fetal heart monitor tracing?

A Yes. I think that based on the whole clinical picture which is the way that one evaluates a child -- you don't take one single piece of evidence -- but based on this child's presentation, his problem, his subsequent evaluation, then I would have to say that I believe that Dr. Morrison's interpretation is more accurate.

Q Why?

A What do you mean why? Why what?

Q Why do you feel that Dr. Morrison's interpretation is more accurate?

A Because it's more consistent with this child's problen,

Q Why?

A Why what?

Q Why is it more consistent with the child's problem?

A The child has a problem which is related to a chronic intrauterine difficulty and is born with a significant neurological deficit and is unrelated to any problems in the immediate prenatal period, And therefore, the decelerations that were noted I did not think were of significance in this child's problem.

Q Did you note decelerations?

A As I told you, I have to rely on their interpretation.

Q You didn't note decelerations when you reviewed it?

A I didn't make a formal review,

MR. PENICK:

Larry, I think you're beating a dead horse. And I'm going to stop you shortly, I'll give you fair varning, I don't know how many more questions like this you're going to ask him. But he has indicated he's not an expert in the field of fetal monitoring.

MR. XULLMAN:

Q Isn't it true, Dr. Chalhub, that in other cases you have looked at fetal heart monitor tracings and offered the opinion that they showed signs of fetal distress?

A I don't know what cases you're talking about. If you'll tell me that, I'll be glad to comment on it,

Q I'm asking isn't it true that you have expressed that opinion in other cases?

A I can't answer that question unless I know what you're talking about,

Q If you can't answer the question, just tell me you can't answer it.
A I can't answer the question.
Q Dr. Chalhub, when you saw Ross Naquin in Chattanooga, you had certain tests performed; is that correct3
A That's correct.
Q What were those?
A I'll have to refer to my notes here. A CT brain scan, a chromosomal analysis, thyroid function studies and blood amino acids.
Q Were all those rtudfas completed?
A I don't have the report on the blood amino acids, But the thyroid function studies, the chromosome analysis and the CT brain scan are completed.
Q ,Where were those tests conpleted?
A Excuse me?
Q Where *were* the *tests* done?
A In Chattanooga, Tennessee.
Q ·At what facility?
A The Erlanger Medical Center.
Q Do you have the test results?

A Yes.

Q Can I see them?

A Sure.

MR. KULLMAN:

Let the record reflect that Dr. Chalhub has handed me a report of chromosomal analysis signed by Dr. Robert L. Summitt, M.D., and a second page which seams to be titled Erlanger Medical Center, Chattanooga, Tennessee, specimen report,

Q What does the second page refer to?

A Can I see it? This is a report of the thyroid function studies.

Q What does it show?

A I'll read you the result, It says the T3 uptake is 30 percent. The FTX is 2.6. The T4 is 8.5.

Q Is that of any significance to you in this case?

A No.

Q Are those normal or abnormal findings?

A It depends on the age and they don't have the age related, Certainly the T4 is normal and the T3 uptake and the PTI with these standards are slightly out of the range of normal. But I don't think that

they're significant. I don't think it has anything to do with this case.

Q What was the purpose of running the test?

A Children that have motor and intellectual problems can sometimes be hypothyroid. And the reason was to do these studies and see if this child was significantly hypothyroid.

Q Is the child hypothyroid?

A NO.

Q Is the child hyperthyroid?

A No.

Q If the child had been hypothyroid, what significance would that have been?

A There's just a whole lot of factors. In terms of what? What do you mean what significance?

Q What significance would it have been to you?

A I would have to look a whole lot closer as to whether it was related to the other insult that the child had.

Q You don't have the blood amino acid study?

A They have not been sent to me, no.

Q Do you know the results?

A No.

Q They were done at the hospital, also?
A Yes, they were.
Q What about the CT scan?
A The CT ocan I have with me today.
Q Was that done at the hospital, too?
A Yes, it was.
Q Was there a report on that?
A They did not send me a report. I assume that there is a report. I think any X-ray that's done in a hospital has a report. So I don't know what the report said.
Q Have you called them about the blood amino acid study?
A No, I haven't.
Q Do you intend to?
A Yes. If I don't get it before the time this case cones to trial.
Q What does the chromosome study indicate?
A It indicates the number and character of the chromosomes.
Q In this case is the chromosome study normal?
A Yes, it io.
Q Is that of significance to you in connection

with your opinions in this case?

A Well, it's of significance that they're normal.

Q Why is that?

A Your opinion why is it that it's of significance that they are normal?

Q Yes.

A It means that he doesn't have a recognizeable chromosomal abnormality.

Q You saw Jose Naquin on September 6th, 1985; is that correct?

A That's correct.

Q And how long were you with the child that day?

A Approximately an hour to an hour and a half, as I recall.

Q Dr. Colhoun, referring to your report of September 18th, 1985, to Mr. Penick, in the second paragraph of it, is that information information that you yourself observed or is that information that was provided to you by the parents?

A Could I see what you're reading from and make sure it's the same thing I'm looking at?

Q Yes.

A I'm reading from a report that I sent to Mr, Penick on September the 18th, 1985. There is a cover letter and then there is a hintory and physical.

Q Do you have a copy of that before you, Doctor?

A Yeah, I just want to make sure it's the same one.

Q How many did you send Mr. Penick?

A I just aent him thin one.

Q Did you ever change it?

A No.

Q Can I keep my copy, then?

A Okay. I just wanted to make sure it's the same one.

Q Mow many did you send him?

A I just sent him this one. But, you know, I've had experience where I didn't get the same report handed me before. So I just would like to make sure it's the same one, Is there any problem with that?

Q I just need to follow you,

A Okay. That's all.

Q Do you have the report before you?

A Okay. What is your question?

Q The second paragraph, is the information in

the second paragraph information that you obtained from the parents?

A Yea.

Q Is it information that you confirmed by your examination?

A I'll have to read it and see. Well, the first sentence I could not confirm. That's a historical statement. The second sentence -- do you want me to go through it?

Q Please.

A Yes, I do confirm that. The third sentence I confirmed. The fourth sentence, I believe that he did recognize his mother and father. The fifth sentence I did confirm, The sixth sentence I did confirm. I don't know whether I offered him a bottle. That was a historical statement in the following sentence. He certainly did not suck or swallow. He did drool excessively. And I don't know whether his first tooth was about to be present or not. And his only other medication included multivitamins was what she told me.

Q So you did confirm that he would not follow commands?

A Yes.

Q And you confirmed that he could not sit?
A Yes,
Q Did the child have a tracheostomy when you examined him?
A Yes, he did.
Q Did he have a gastrostomy when you examined him?
A Yes, he did.
Q With respect to the other history provided you by the parents, Dr. Chalhub, do you have any reason to believe that any of it is inaccurate or untrue?
A Do you have a specific statement in mind?
Q NO.
A No. I think that these were very sincere caring individuals who gave me answers to the questions that I asked.
Q You found that the baby's head was 47 centimeters in diameter?
A Yes.
Q I said diameter. Is that diameter or circumference?
A Circumference, Excuse me.
Q Was that of significance to you?

A I think it was slightly small for the age. I don't have my growth chart with me right now to go back and be absolutely certain,

Q Did you plot it?

A I did, But I don't have that with me right now.

Q Is there anything else you've done with respect to this case that you don't have with you now?

A No.

Q Just the growth plotting curve?

A That's all. I just looked on the head circumference sheet. We usually do that.

Q Was the head circumference of significance to you in formulating your opinions in this case?

A No, not this one.

Q Were any other head circumferences significant to you?

A The head circumference at birth was significant.

Q In what sense?

A Well, it was 31.5 centimeters which was appropriate for that gestational age.

Q It was not abnormal?

A No.
Q It was normal?
A Well, it was normal for a child of that gestation,
Q It was appropriate for the gestational age?
A Yes,
Q What about his length? Was that significant to you?
MR. PENICK:
At the time of his examination?
MR. KULLMAN:
Yes.
A . Again, I don't have that where it plots that en the chart. But in terms of the causation and problem, no, it was not significant.
Q You say in your report that the child's skull was enlarged in the anterior/posterior diameter. Was that significant to you?
A It's commonly seen in prematory infants. That's the observation,
Q I'm sorry. What kind of infants?
A Prematory infants.
Q What is that?

A What's a prematory infant?

MR. PENICK:

Premature.

A It's the same thing as a premature.

HR. KULLMAN:

Q Was it significant to you in formulating your opinions on causation in this case?

A It confirmed that the child had an exam consistent with a prematory child.

Q You found prominent veins over the temporal area and the parietal area, is that correct?

A That's correct.

Q Was that significant to you in formulating your opinions?

A Let me just clarify it. Obviously we're going to go through this all the way. Are *you* saying is that significant in relation to my opinions in terms of causation at birth? Is that what you're referring to so we don't have to do it each time?

Q Yes, air.

A NO.

Q What do you believe those findings are due to?

A Well, they can be due to several things.

Usually in fair-skinned, fair-haired babies, oftentimes you see prominent veins, Sometimes they can be a reflection of increased intracranial pressure if there are other symptoms that go along with it. And sometimes they can be seen with certain systemic diseases such as renal disease and liver disease.

Q In this case, do you believe that it is due to any systemic diatase?

A No. As I told you, I didn't think it was significant in this particular child'. problem.

Q Xn this case do you believe it is due to intracranial pressure?

A I think I've answered the question, No.

Q I'm sorry, Doctor. You'll have *to* bear with me because I'm not a doctor.

A I understand that, But I've already said tha I don't think it's significant.

Q What about your findings with respect to the hair? What did they indicate?

A The hair vas long, slightly thin and sparse in certain areas, which is often seen in babies that are delayed.

Q What is often seen in babies that are delayed?

A I don't know how I can say it any other way. It's often seen in babies that are delayed,

Q Let me try to be more precise, Do babies that are delayed often have long hair?

A Yes.

Q As opposed to babies that are not delayed?

A Well, it's also dependent on whether it's cut or not. But this was sparse and thin, And usually babies that are delayed lie on one side, the side of the head or back of the head, And oftentimes it's sparse or thin,

Q Is that the reason you feel that this baby's hair *is* sparse and thin?

A Yes,

Q What does that indicate?

A Well, it indicates just again what I said; that it's just a finding that is Been in infants that have delayed motor and intellectual development.

Q Why does that occur?

A Because they lie on the back of their head or the side of their head and they don t move very much.

Q You say there was mild to moderate frontal bossing, What does that mean?

A Frontal bossing is an increase in the size of the frontal areas of the skull.

Q Is that something you measured?

A That's an observation.

Q Is that of significance to you in this case?

A It's often seen in ptcmatory infants.

Q Is it of significance to you in this case?

A Again, only to confirm the fact that the child was premature.

Q What is that due to?

A Usually it's due to the anterior/posterior diameter of the head being elongated in prematory infants. It's often called scaphocephaly. And again, it's basfcally due to positioning vhere the child will lie on one side more than the other.

Q That's after birth?

A Yes.

Q Is that also consistent with your findings of significant motor and intellectual delay?

A No. As I told you, it was a finding that's seen in prenatory infants. You can have a normal development and still have frontal bossing and scaphocephaly.

MR. KULLMAN:

Off the record.

(A DISCUSSION WAS HELD OFF THE RECORD.)

(LUNCH RECESS.)

MR, XULLMAN:

Q Dr. Chalhub, we're talking about a report that you sent Mr. Penick on September 18th, 1985. Was this the first written report you had given Mr. Penick?

A Concerning the physical examination?

Q Concerning anything.

A Well, I don't know the date. I think you ha e some other reports. I don't know the date of the other ones. But this is one of them,

Q Before sending Mr. Penick the report of your physical examination, had you sent him any other written reports?

A As I said, I don't have those with me because I think I rent him the only copies. And I think you have them in your file, But if the date is before or after, I just can't remember,

Q What other written reports have you given Mr. Pcnick?

A I think there was a report on what my thoughts were concerning the case.

Q On causation?

A Uh-huh (positive response.)

Q So there would be two reports?

A That's correct.

Q Other than those two reports, do you recall sending Mr. Penick anything else in writing about this case?

A I don't recall.

Q Did you write anyone else about this case?

A No.

Q Going back to your report of September 18th or rather that is attached to your letter of September 18th, you say that the fontanelle were closed. What does that mean?

A The fontanelles, That should be plural. The fontanelle io the opening over the top and the back of the head. And there's an anterior and posterior fontanelle. And usually in infants, the skull closes between 12 and 18 months of age.

Q So is this a normal finding?

A Yes.

Q Did you feel it was significant in formulating your opinions?

A No. It's just a description.

Q You said you did not feel any particular ridges to the sutures). What does that mean?

A It means what it says.

Q What do the sutures refer to?

A It's the way the skull is put together, in pieces.

Q And was that a normal or an abnormal finding?

A It depends on the situation. Sometimes it may be abnormal, Sometimes it may be normal.

Q In this case did you feel it was normal or abnormal.7

A I did not attach any significance to it.

Q Did you examine the tracheostomy?

A Just to look at it.

Q Did you examine the gastrostomy?

A The what, now?

Q The gastrostomy?

A Just to look at it.

Q Did you examine the child's chest?

A Yes.

Q What did you do?
A I auscultated it and percussed it.
Q What did you find?
A So fat as I could tell, it was clear,
Q You ray he had a midline scar over the abdomen. What did you think that was due to?
A I don't recall now.
Q Was that related to the gastrostomy?
A I believe, Right now I've just drawn a blank in terms of what that might be related to. I can't remember another operation.
Q Did you attach any significance to it?
A No.
Q You say he had a dark spot over one of his buttocks?
A No, I didn't say that.
Q Cafe-au-lait opot?
A Yes, that's what I said,
Q What does that mean?
A Again, that means that there's a cafe-au-lait spot over his buttocks.
Q What does cafe-au-lait mean?
A It means coffee with milk.

Q Did he have coffee on his buttocks?
A He had a cafe-au-lait spot, It's a descriptive term in medicine.
Q Did he have coffee on his buttocks?
A No.
Q He didn't have coffee with milk on his buttocks, either, did he?
A NO.
Q What is the term meant to describe?
A It's a pigmented area usually one to three centimeters which may be seen in isolation or in association with other disease stater,
Q Did you feel it was significant in this case?
A Significant in terms of what?
Q In what we've been speaking about.
A You mean in terms of the causation?
Q .Yes.
A No.
Q Did you think it was indicative of any disease process?
A ..Not in this constellation ob findings, no.
Q Did his eyes appear normal?
A A8 I said, they showed no external

abnormalities.

Q Did you do an eye examination?

A I looked at his eyes, looked at his discs and looked at the extraocular muscle function.

Q Was the external appearance of his eyes of significance to you in formulating your opinions in this case?

A It s an observation. They looked to be normal to me.

Q What about the shape of the child's mouth?

A It was an almond shaped.

Q What is the significance of that to you?

A It can be seen in certain chromosomal abnormalities or dysmorphic syndromes.

Q Do you feel in this child it is reflective of a chromosomal abnormality?

A No. We know that the chromosomes are normal But at that time I did not know that.

Q Do you attach any significance to the shape of the mouth at this time?

A Well, other than it's almond shaped. It can be seen in certain dysmorphic syndromes.

Q Do you believe this child has any dysmorphic

syndrome?

A Well, he has some dysmorphic features. But again I've stated that's not my opinion as to what the child's problem is.

Q You don't feel this child has a dysmorphic syndrome?

A I think he has dysmorphic features.

Q My question is do you feel he has a dysmorphic syndrome?

A Not that I can recognize.

Q What about the condition of the child's gums?

A They were large and puffy.

Q What do you think that is due to in this case?

A I don't know.

Q Is that of significance to you in formulating your opinions?

A No.

Q What about the size of the child's mandible?

A It's very small in comparison to the head. And at that time I felt that it could possibly again be another dysmorphic feature associated with the mouth. But as we know, the chromosomes are normal and I don't think that there are enough total dysmorphic features

to put it to that area. But it may again also contribute to the child's difficulty with opening the mouth, swallowing and sucking.

Q Do you believe it's possibly a sign of atrophy?

A No.

Q Why not?

A Well, your jaw doesn't atrophy.

Q You say there are no epicanthal folds. What are those?

A Those are folds in the inner aspects of the eye.

Q Is that a normal or abnormal finding?

A Well, it can be either,

Q In this case?

A There weren't any so there's really no relationship.

Q Well, the fact that there weren't any, do you consider that an abnormal or a normal finding?

A I consider that of no significance.

Q ..What were your findings with respect to his extremities?

A They did not have any abnormal creases. There

was no syndactyly.

Q What does that mean?

A Fusion of toes or fingers,

Q His genitalia were normal?

A As far as I could tell, yes.

Q When you did your eye examination, you found that his discs were slightly pale?

A Yes,

Q What does that mean?

A That means they're slightly pale.

Q Is that significant?

A Well, it can be seen with optic atrophy. It can be seen with impairment of vision, But they were not small and atrophic.

Q What are the discs?

A Of the optic nerves.

Q -What do you think the cause of the atrophy -- of the slightly pale color of the optic nerve is in this case?

A I didn't understand that. You said atrophy. There is no atrophy.

Q I'm sorry. Let me restate the question. What do you feel that the cause of the slightly pale color

of the optic nerve is in this case?

A I don't know, Sometimes just in blond fair-haired babies -- or fair-skinned. Excuse me. Complected babies, the disc can be slightly pale.

Q What are the possible causes of that?

A As I said, you can often see it in optic atrophy, multiple sclerosis, certain hereditary diseases.

Q Can lack of oxygen cause optic atrophy?

A Wait a minute. Is that totally unrelated to this case? Because this child doesn't have optic atrophy.

Q I understand that.

A Yes.

Q Can lack of oxygen cause paleness of the optic nerve?

A Hereagain, we're talking about hypothetically unrelated to this case in, what, a newborn or a 20-week old or what?

Q Newborn.

A Yes.

Q You say there was no retinal pigsentation. Is that normal?

A Again, it depends on the age, the gestation, the race.
Q In this case.
A Yeah. I think that the fact there was no retinal pigmentation was significant.
Q Why?
A Wall, that it was a normal finding.
Q Does that indicate any impairment of the child's vision?
A No.
Q When you say that the child's face demonstrated bilateral decreased facial movement, what do you mean?
A That it was weak.
Q How do you determine that?
A Well, if you cannot smile fully or when you cry there's not enough facial expression and you don't close your eyes, well, there's facial weakness.
Q Did you think that was significant in this case?
A Yes, I did,
Q Why?
A Because it indicated that there was

involvement of the seventh cranial nerve bilaterally.
Q What about the child's blinking? Was that significant?
A Yes.
Q Why?
A Well, it also indicated that there was facial weakness in the orbicularis oculi.
Q Is that the seventh cranial nerve?
A No. That's a muscle.
Q What did you think the weakness of that muscle indicated?
A That it was an impairment of the seventh cranial nerve.
Q Were there any other significant findings with respect to the child's face that you can recall?
A He drooled excessively.
Q What is that due to?
A It usually means that they can't handle their secretions and have weakness of the cranial nerve five, or the masseters.
Q What about the child's pallet?
A It did not elevate at all.
Q What does that mean?

A It means he's got profound involvement of cranial nerves nine an ten.

Q What does it mean to elevate a pallet?

A It means when you talk or swallow or do anything, your pallet elevates automatically. It's due to cranial nerve function related to the vagus nerve. And when it doesn't, it's quite abnormal.

Q What is a gag response?

A Again, it's a sensory response to the posterior portion of the throat. In other words, when you stick your finger in your mouth, people usually gag. When that's not present, then there's an impairment in sensation.

Q Why do you think this child did not have a gag response?

A Because he's had significant lower brain stem involvement.

Q What about the child's tongue? What did you note about it?

A I could not get him to protrude his tongue. And there more than likely is weakness in his tongue, also.

Q What is that due to?

A It's due to involvement of cranial nerve twelve.

Q You say he did not have facial sensation to pinprick?

A No. I said he did have facial sensation to pinprick,

Q What dots that indicate?

A That indicates that the sensory portion of the trigeminal nerve io intact.

Q What about the motor portion?

A I already said that's weak.

Q Did you examine the child's motor function?

A Yen, I did.

Q How?

A By observing him, by stimulating him and then assessing his quality of his movements.

Q And what did you determine?

A That he had a spastic quadriparesis, slightly greater on the right than the left.

Q What is spastic quadriparesis mean?

A It means pretty much what it says. You have spasticity and paresis in *four* extremities.

Q What does paresis mean?

A Weakness.
Q How would you rate the weakness?
A It's difficult at times in infants to do that. But on a scale of 1 to 10, 10 being -- I'm sorry. On a scale of 1 to 5, 5 being normal, his would be a 3.
Q Do you think that's going to be a permanent condition?
A Yes, I do.
Q What were your findings with respect to muscle tone?
A He had increased tone in his lower extremities as compared to the upper extremities.
Q Was that significant to you?
A It went along with the involvement of the brain stem and the quadriplegia. It was consistent.
Q What was the quadriparesis due to?
A In my feeling, it's due to brain stem involvement.
Q What are the other possible causes?
A Well, you have to decide in ev luating a patient as to where something is located with the nervous system, whether it's located at the muscle level, the peripheral nerve, the spinal cord, the brain

stem, the upper pathways in terms of cerebral cortex,

Q The damage to the upper cortex could cause quadriparesir?

A Yes,

Q Were the child's reflexes normal or abnormal?

A They were probably normal. I mean, they were normal,

Q Is that significant?

A I vould have expected them to be a little bit brisker in a child with a spastic quadriparesis. But I think becauee the child had significant brain stem involvement and possibly some cerebellar involvement, that that probably is the reason that they vere 2 plus as opposed to 3 or 4 plus. And you know, since I feel strongly that this child has profound lower brain stem and midbrain stem involvement, I think it's consistent.

Q What are the child's plantar responses?

A That's a response which is elicited by stroking the lateral aspect of the foot and then stroking laterally to medially. And an abnormal response is when the large toe is in extensor.

Q How did this child respond?

A I couldn't tell. It vas difficult to evaluate

due to withdrawal.

Q What does that mean?

A That means when I stroked the bottom of the foot, he didn't like it.

Q So you couldn't tell if he had a normal or abnormal response?

A Right. One would expect with a spastic quadriparesio to be in oxtensor, But sometimes due to the withdrawal of individuals, it's just difficult to be certain, So rather than give an unreliable response, you state that you cannot adequately evaluate it at that time. It could be done at another time.

Q You say he had definite head lag uhen upright?

A Yes.

Q What docs that mean?

A It means that his neck muscles are weak.

Q What is the significance of that?

A That the neck muscles are weak.

Q What do you think that is due to?

A That means that he has had a central nervous system insult,

Q Where?

A Well, going along with the rest of him

findings, probably in the brain stem and to a lesser extent the cortex,

Q So you think he has central nervous system damage to both the brain stem and the cortex?

A Yes. But to a lesser extent the cortex profoundly involving the lower brain stem,

Q Do you think the weakness of the neck muscles is a permanent thing?

A Yes,

Q What about thia scissoring you mentioned, Doctor? What does that mean?

A That's a sign of spasticity,

Q That's an abnormal finding?

A Yes, it is.

Q And what is that due to?

A It's due to involvement of the upper motor neuron pathways,

Q What are the upper motor neuron pathvays?

A Anything above the anterior horn cell to the brain.

Q .-Could the child sit unassisted?

A I said he couldn't sit unassisted,

Q Is that normal or abnormal for that age?

A I think that's abnormal,
Q What is that due to?
A It's due to motor impairment.
Q Which is due to what?
A Well, which is due to the insult this child received in utero.
Q This is due to central nervous system damage?
A Yes.
Q Where?
A Well, again, it's difficult to be absolutely 100 percent certain. But based on his other physical findings, with the profound involvement of the lower cranial nerves, that that's moot likely the place.
Q It could be also the result of damage to the upper cortex3
A Yes. But that doesn't go along with the rest: of his findings.
Q You've said you think there's damage both to the upper cortex and the brain stem'?
A I said predominately and profoundly the lower brain stem, To a lesser extent the cortex.
Q The, damage to the cortex could account for this?

A Not solely, no. Not unless it was profound,

Q What about the fact that the child could roll from side to side?

A He could roll from side to side,

Q Is that normal or abnormal?

A I think it's normal,

Q What did that indicate to you?

A That he could roll from side to aide.

Q Was that significant?

A No. It just was another observation that you put together vith everything else, You can't take all of these things in isolation,

Q Do you have an opinion as to the child's vision?

A Hy opinion is as'stated, He fixed and would infrequently follow.

Q .What does that mean?

A Which means that he has some vision, the quality of which I cannot assess.

Q Do you question the quality *of* the child's vision?.

A I don't understand the question,

Q Do you think this child has normal vision?

A No, I don't think he has normal vision.
Q And what is the basis of that opinion?
A Well, that he did not follow regularly, But that could also be due to intellectual impairment and inability to attend to certain tasks. But he clearly sees,
Q Is it your opinion, Dr. Chalhub, that this child is intellectually and motor delayed; is that correct?
A Yes; that's correct.
Q Would you characterize this child's delay as profound?
A I'd characterize him as functioning below his stated age.
Q Do you think it's severe or profound delay?
A Severe,
Q Both intellectually and motor?
A I really can't tell totally intellectually. Because I did not really do a Denver Developmental or some other type of more informative examination of his intellectual function, But clearly he ha8 not reached his milestones that a two-year-old child should do. But again, he has a tracheostomy and a gastrostomy. So

all of those factors have to go in to evaluate it. I think the best thing that could be said is that one needs to wait and see what development occurs over the next several years to speak more accurately about intellectual development. There's no question that he's severally involved in terms of his motor development.

Q Do you think that involvement -- that is, his severe motor involvement -- is permanent?

A Yes, I do.

Q Do you think that the intellectual involvement is permanent?

A As soon as we can quantitate it. He is going to have a certain amount of intellectual impairment, yes.

(A DISCUSSION WAS HELD OFF THE RECORD.)

MR. KULLMAN:

Q Do you feel that this child is mentally retarded, Dr. Chalhub?

A He's delayed intellectually for his chronological age. I don't like to use the vord 'mentally retarded" until I have some objective

psychometric studies to base that on normal standards.

mentally retarded?

A I think he is going to have some mental

Q Let's talk about that,

A I would not expect him to survive past five to

Q Why is that?

A That's just based upon a study to be published by the HIE on children with trachs and profound motor

will ever be gainfully employed?

A No, I don't.

Q Or will have a normal life ever?

A That's true,

Q What's going to kill this child?

A Probably an infection.

Q Is that a consequence of his brain injury?

A No.

Q Is the fact that he's going to not be able to survive a brain injury (sic) going to be a result of his brain injury?

A I'm sorry. That question didn't make sense.

Q Let me ask you this: Do you think the reduction in his life expectancy is due to his brain injury?

A Qh, yes. It's due to his lower cranial nerve involvement and his inability to suck, swallow and his decreased motor function,

Q What kind of care will this child require?

A In terms of what aspects, do you mean?

Q Well, if you were treating this child, Doctor, what would you recommend in terms of hi8 supervision and care?

MR. PENXCX:

You mean for right now?

MR. KULLMAN:

Right.

A Just really pretty much what he's getting. He's got very sensitive concerned parents that are doing a good job in taking care of him.

Q Would you recommend nursing assistance for the family?

A I think I asked her. She thought that she was able to care for his needs at the present time. They're pretty adept at doing all the things that anybody would do.

Q Would you recommend that for this family?

A No.

Q How often should this child be seen by a doctor?

A What type of doctor?

Q Any doctor.

A Well, the child should have routine pediatric Care. If the child has infections, then those should be treated appropriately. If he has other problems related to the trach or the gastrostomy, then those should be seen. I don't think you can put a number of visits on it. It will depend on how the child is doing, how well he's cared for.

Q What about special therapy?

A I would think that based on this child's involvement, that the family could do range of motion exercises and physical thsrapy as they are doing.

Q You wouldn't recommend other special therapy by specialists?

A On a reasonable basis. Perhaps once a month to assess what kind of development he's making and the progress and that the parents arc doing everything that they've been instructed.

Q What kind of person would you recommend seeing him on a once-a-month basis?

A A physical therapist.

Q Any other kind of therapist?

A I think that has to be dictated on the progress and the things that develop.

Q .Is spastic quadriparesis a type of cerebral palsy?

A No.

Q Does this child have cerebral palsy?

A .I don't use the term "cerebral palsy.'

Q As the term is normally used, does this child have cerebral palsy?

A We don't use it normally, so I can't answer that question, If you wanted to ask me what the definition of cerebral palsy is, then I would be glad to do that.

Q You don't think the child has cerebral palsy?

A No, I didn't say that,

Q What did you say?

A I said I don't use the term "cerebral palsy.' It's an archaic outdated term.

Q Are you familiar with an NIH study on prenatal and perinatal factors in brain damage?

MR. PENICK:

Which one specifically?

MR. KULLMANt

Q This one (indicating)?

A Yes, I am.

Q Have you read *it?*

A Yes.

Q When was it published?

A I'll have to look. Just recently in the spring, I believe, of *'85.*

Q Is that a fairly current study?

A It's a study that's been, as I said, in the

spring of '85.

Q Does that study use the term "cerebral palsy"?

A Yes.

Q Dr. Chalhub, did you review the hospital record with respect to the birth of this child?

A Yes, I did.

Q And what is your understanding of the child's gestational age at the time of birth?

A It was approximately 35 weeks.

Q What is your understanding with respect to the child's sire in relationship to his gestational age?

A That it vas appropriate for gestational age.

Q What is your understanding about the child's Apgar scores at birth?

A You mean what were they?

Q Yes, sir.

A 2 at one minute and 4 at five minutes.

MR. PENICK:

Doctor, let me interject here that you are free to look at any of the records if you need to.

MR. KULLMAN:

Q With respect to the first score, what did you understand that it showed in this child or reflected?

A I don't understand what you mean.
Q Well, what is a normal Apgar?
A An Apgar that's considered to have no prognostic significance in terms of abnormalities is an Apgar 7 to 10.
Q What's the highest Apgar?
A 10.
Q What are we ranking here or grading?
A There are five things that individuals look at that was developed by Virginia Apgar in trying to access a newborn's well-being.
Q What are those five things?
MR. PENICX:
Let's go off the record for just a minute,
(A DISCUSSION WAS HELD OFF THE RECORD.)
(REQUESTED PORTION OF RECORD READ,)
A Respiratory rata, heart rate, reflex irritability, tone and color.
MR. KULLMAN:
Q Do you know what the two points given to this child indicated?
A If you could find it for me in the record -- I

can't remember exactly what they took off the points for.

Q I can't find it in the record,

A We'll have to find it. Because I can't remember exactly what they were.

Q Is that significant in formulating your opinions?

MR. PENICK:

What is that?

A You mean to the Apgar of 2 significant?

MR. RULLMAN:

Q Yes,

A Yes, it is significant.

Q Is it significant in formulating your opinions what the scores were given for?

A In certain situations. In this case, I mean obviously the baby is depressed at birth with low Apgars. I mean, that's the significance.

Q Do you know if the child was given any points for cardiac function?

A Again, if we could just find it, I'll be glad to look at it. I just can't recall the subscores because I don't have that in front of me. Let me see

if we can find it so we won't be guessing here.

Okay. Here it is right here. No, That's the anesthetic chart. I'm sorry.

Well, I can't seem to find it.

Q Did you make an assumption as to what the 2 was given for in this case?

A Well, I can't find it right now. And it may not even be there. But I mean, the Apgar of 2 fa a very low Apgar. There's no question about that.

Q Did you assume in formulating your opinions the child had a heart rate at birth?

A Yes.

Q Did you assume that the two points were given for heart rate?

A I have to go back and look at it and see. I just can't recall at this point.

Q I understand you can't recall. But is that an assumption you made?

A I'd like to see it, Right now I can't -- my recollection is that the Apgars were low. They were significant that the child was depressed at birth. And I don't have any argument with that.

Q Did you assume that the two points were given

for cardiac function?
A No, I can't remember now without seeing it what that was.
Q So if the cardiac function was zero at birth, that wouldn't alter your opinions?
A No, The Apgar was extremely low and consistent with a significantly depresaed baby.
Q And if the heart rate were 1 at birth, that would not alter your opinions?
A No.
Q And if the heart rate were 2, that would not alter your opinions?
A No.
Q Dr. Chalhub, I assume you also do not know what the score of 4 was given for at five minutes?
A You mean what the Subtotals were?
Q Yes.
A No, not right now I can't. If you could just provide it for me, I'd be glad to comment on it.
Q Would it alter your opinions in any way if the child's cardiac function was 2 At five minutes?
A It says here that the heart rate at the tine of intubation was 30 to 40. No, it wouldn't alter my

opinion,

Q You assume that the heart rate was not normal at five minutes?

A I don't know what's normal,

Q What is normal for an infant?

A You're the one asking the question. What are you asking me is normal?

Q At five minutes at birth, what should a normal child's heart rate be?

A It depends on the situation the child is in.

Q If the child is healthy.

A It can range anywhere from 100 to 200.

Q Is 30 normal?

A No, it's not normal.

Q Is that a significant bradycardia?

A Yes, it is.

Q Is it a severe bradycardia?

A Again, what do you mean by significant and severe? In terms of vhat situation?

Q In terms of the child's life.

A I don't understand that question.

Q Well, is that bradycardia at the time of intubation life threatening?

A Well, if it persists beyond an extended period of time, then it certainly can be, yes.

Q An extended period of time being what?

A I don't know, It depends on a number of factors,

Q It can range from what to what?

A What can range from what to what?

Q The bradycardia before it's life threatening.

A Well, I mean zero is life threatening. But again, it depends on whether the baby is oxygenated at the time it has the bradycardia, whether there's cerebral blood flow. And I don't know those variables.

Q Why is a bradycardia significant?

A You mean hypothetically?

Q Yeah.

A And unrelated to this case?

Q Yes.

A It depends. It could represent cardiac arrhythmia. It could represent an infection. It could represent an injury to the heart, It's an abnormal rate that is decreased and may affect the cardiac output.

Q In an infant like this, Dr. Chalhub, is a

bradycardia significant when the child is also insufficiently oxygenated?

A Why do you mean by insufficiently oxygenated?

Q That the child is asphyxiated?

A From when, now?

Q For a period of a half an hour.

A What are you referring to?

Q I'm asking you if bradycardia is a significant additional insult to an asphyxiated child?

A You mean hypothetically and unrelated to this situation?

Q Yes.

A Yes.

Q Why?

A Why what?

Q Why is it significant?

A Well, if you already have an asphyxiated child and you have bradycardia, then one can certainly compound the existing asphyxia.

Q How does that happen?

A Well, again, hypothetically and unrelated to this case, it decreases possibly cardiac output, possibly oxygenation of the blood.

Q And?
A And what?
Q What is the cause to the brain?
A Well, it depends again on the gestation of the infant, whether it's a full term or premature, whether the baby has had an in utero asphyxial event a period of time before the delivery. A whole host of things. Whether the baby has lower cranial nerve function at the time of birth. All of those are important factors, I can't answer you question as you've stated it unless you want to give me those variables.
Q Isn't it true, Dr. Chalhub, that a normal child with no other problems who suffers asphyxia for as much as a half hour and significant bradycardia in the range of 30 for as little as two minutes can suffer severe and permanent brain damage?
A No, that's not true.
Q Isn't it true, Dr. Chalhub, that a child who has been asphyxiated for about a half hour and suffers bradycardia in the range of 30 can suffer a hypoxic ischemic insult to their central nervous system?
A Again, you're talking in very vague terms and have not given any significant -- I can't answer your

question.

Q Isn't that true?

A No, I can't answer your question.

Q Isn't it true that you've testified previously, Dr. Chalhub, that in a small infant who is asphyxiated who suffers severe bradycardia, that you would expect to have a severe ischemic hypoxic insult to the brain if it lasted anywhere from two minutes to twenty minutes?

A Well, you'll have to show me. I don't think the situation is the same. Are you talking about a newborn infant a5 the one we're describing or a child that's at three to four months of age that has a cardiac arrest?

Q I'm talking about a newborn infant.

A No. I'd have to see if I've stated that.

Q Is that your opinion?

A Uhat?

Q That it can cause a severe hypoxic ischemic insult,

A No, not in two minutes. Not in a prenatory infant that's a newborn.

Q I said two minutes to twenty minutes.

MR, PENXCK:

Wait. State the question again. What are you talking about now?

MR. KULLMANt

Q I said isn't it your opinion, sir, that a premature infant who was asphyxiated who suffers bradycardia can suffer a severe hypoxic ischemic insult if this persists for anywhere from two minutes to twenty minutes?

A Again, you knov, I would have to see exactly what tha situation is and what the gestation is, the other problems surrounding the infant, It makes a great deal of difference. But generally speaking, babies that are premature, that are born, can sustain a period of hypoxia for a prolonged period of time, The best set of experimental data is that by Duffey in nitrogen-given to animals in that they can sustain a period of 45 minutes if they are newborn. If they are older or an adult, it's a considerably less period of time. So again, the factors are *very* important. The variables are very important. The other existing conditions are very important. So if you want to give me those specifically and itemize them, then I could

perhaps make a comment.

Q Dr. Chalhub, isn't it your opinion, sir, that if a newborn infant who is premature suffers from bradycardia and asphyxia for a two- to twenty-minute period of time, he can sustain a severe hypoxic ischemic insult?

A I can't answer that question without the other variables.

Q What is ischemia caused by?

A You mean just ischemia? In what situation? In an adult, a newborn, a rat or what?

Q A newborn.

A What kind of ischemia?

Q Ischemia of the brain.

A It's usually as a result of decreased cardiac output.

Q What does that result from?

A It's just a whole host of factors, Mr, Kullman.

Q Is decreased heart rate one of them?

A Again, if there are other factors involved, it's possible, But anything is possible.

Q Dr. Chalhub, I'd like to talk to you about

your letter of October 16th, 1905, to Mr. Penick, The second sentence says: I've made my conclusions --

A I don't have a copy of that. Can I look -- is this a copy of it right here?

Q I believe so. -- that this premature infant suffered predominately a hypoxic episode on a chronic intrauterine basis. What does that mean, sir?

A It means that either on a single episode or repeated episodes in utero, this infant, in my opinion, suffered hypoxia.

Q What does chronic mean?

A Well, as I said, on either a single or repeated basis at some time during the child's in utero period.

Q Was that a common useage of the word "chronic"?

A Yes. As opposed to acute.

Q And what does acute mean?

A That means right away.

Q Like when?

A It depends on again the clinical situation you're talking about.

Q In this Cast.

A You know, there's acute bacterial endocarditis and subacute and chronic.

Q In this case.

A In what case?

Q In this case, the Naquin case.

A Yes. My opinion is that this child did not suffer significant acute intrauterine asphyxia. The predominant cause of this child's problems, based on the physical examination, the pathology, the CT scan and the subsequent course, is that of a chronic hypoxic insult,

Q Do you believe this child suffered some acute intrauterine hypoxia?

A It is possible. But the probability is that the majority of the insult occurred on a prior chronic basis.

Q -Why do you state that it's possible that this child suffered an acute intrauterine hypoxia?

A Well, I think anything is possible, And the child had an acute abruption. And it's possible that was in some way related. But the factors in this child's history, physical and subsequent laboratory studies are contradicted and don't support that. It

supports the pathological entity of a chronic either single or repeated intrauterine insult. Because this child has an unusual set of physical findings which one sees in a certain clinical situation, And that is of a child who is breech, is premature, has low Apgars, who has no meconium, has a profound lower cranial nerve involvement at the time of birth, early seizures and goes on to have a clinical picture consistent with what we're looking at.

Q What is the evidence of an acute abruption?

A The pathology report.

Q What other evidence?

A That's the only evidence that I recall.

Q Is there evidence of the acute abruption in the fetal heart monitor tracing?

A I don't know how to read acute abruption on a fetal heart monitor.

Q Do you know how to interpret the agonal phases of fetal distress on a fetal heart monitoring?

A No. I told you I was not an *expert* in fetal heart monitoring.

Q I know you're not an expert. But do you know how to interpret the agonal phases of fetal distress on

a fetal heart monitor tracing?

A No.

Q What other evidence is there here of acute intrauterine hypoxia?

A I'm sorry. I don't really find any other evidence.

Q It's your testimony that other than the pathology report with respect to an acute abruption, that you find no other evidence in this record to suggest acute intrauterine hypoxia; is that correct, sir?

A Let ma see if I can --

Q You can explain --

A Let me answer the question first,

Q Dr. Chalhub, I'm asking you for a yes or no answer and then you --

A -And then I can explain? I have the right to do that?

Q Yes, you do.

A Now, would you'rcstate your question?

MR. PENICK:

Doctor, let me tell you this: That you do not have to give a yes or no answer. If it does not fit

into one of those categories, you answer it as best you can.

(REQUESTED PORTION OF RECORD READ.)

A The answer to that is no, Now, let me explain my answer.

MR. KULLMAN:

Q First let me just understand that no, Does that mean you find no other evidence or you do find other evidence?

A No. I'd like *to* explain my answer.

Q Please go ahead.

A You have to take a case with all of its factors which are common. You have to take every physical finding, every laboratory finding. And since we have the ability now to go back over time to place it at a situation which we can adequately give an assessment of a child's problems. The child individually and selectively has features which can be consistent with acute asphyxia. Collectively it does not go along with that. And based on the child's examination, the child's course, the child's profound neurological involvement in the lower brain stem -- which has not been previously documented by other

experts in the evaluations that I've seen and make it difficult for me to understand how one can base opinions on an inadequate examination. But based on this child's findings of a premature breech child who clearly has selective neuronal necrosis in the lower brain stem in a significant profound basis early on, has early on seizures, has no meconium and goes on and has an examination such as I had the opportunity to do is totally consistent with a child that has a chronic hypoxic insult either on a single or repeated basis.

Q What are the single factors which suggest acute intrauterine hypoxia in this case?

A When you're talking about acute? it could be anywhere from ten hours to twelve hours, any time in the labor period. That could be low Apgars, it could be difficulty at birth, it could be acidosis at the, tine of birth on an umbilical cord specinen, not at one hour of age.

Q I'm talking about in this case.

A I'm talking about in this case.

Q What else?

A That's about all I can see.

Q So the factors which are suggestive of acute

intrauterine hypoxia singularly by themselves in isolation are the acute abruption, the low Apgars, the difficulties this child had at birth and the acidosis; is that correct?

A That's Correct. Again, let me elaborate. You don't taka things singularly. You take them collectively based on the pathological findings, based on the examination and based on the laboratory test.

Q What about the fetal monitor tracing? Is that consistent with acute intrauterine hypoxia?

A It could be consistent with a whole host of things. The --

Q Well, is it consistent with acute --

MR. PENICX!

Wait a minute. He wasn't finished with his answer.

A .But again, as I told you, I will reserve comment on the fetal monitoring. You have experts to do that and I think that's best done by those experts.

MR. KULLMAN:

Q Do you have an opinion as to whether this fetal monitor tracing is also a factor which is consistent with acute intrauterine hypoxia?

A No. The fetal heart monitor has evidence of fetal well-being. Normal babies are born oftentimes with many abnormalities on the fetal monitor. So that has to be individually assessed.

Q What is the evidence of fetal well-being in this fetal heart monitor tracing?

A As has been testified and again --

Q I'm talking about your opinion, sir.

A I'm saying that I'm not going to comment because I am not an expert in fetal monitoring.

Q You just told me, sir, that you felt that this fetal heart monitor tracing had evidence of fetal well-being?

A I'm telling you I've read the testimony and the testimony is that there were fetal accelerations, there was recovery from the decelerations, all of which point to fetal well-being.

Q Do you have an opinion based upon your reading of the fetal heart monitor tracing whether or not it shows any evidence of fetal well-being?

A My opinion based on the testimony is that it shows fetal well-being.

Q I object to the responsiveness of the

question, Doctor.

A Well, I'm answering the question.

Q I understand you've read other people's testimony. I want to know if you have an opinion based upon your observations of the fetal heart monitor tracing whether it shows evidence of fetal well-being?

A No.

Q Do you have an opinion based upon your observations of the fetal heart monitor tracing whether it shows evidence of acute fetal distress?

A No.

Q Do you have an opinion based upon your observations of the fetal heart monitor tracing whether it shows the agonal phases of fetal distress?

A No.

Q In formulating your opinions with respect to this case, then you've relied solely upon the opinions of others with respect to the significance of the fetal heart monitor tracing?

A I have relied on the testimony of others but in constellation with a11 the other clinical findings, as I tried to point out to you, it's merely another tool just like the hematocrit, the hemoglobin, the

blood gases, the chest X-ray, the CT scan, the physical findings, the subsequent course. All of whose are important. You just do not isolate one single factor. And the reasons, as I've already stated, is what babies can be born with what's quoted as severe changes on a fetal monitor and be absolutely normal. They can also have a normal fetal monitor and have significant problems. It is a tool what's used in conjunction with other information.

Q Isn't it the most important tool that doctors have developed in the last decade to assess fetal well-being?

A Is what?

Q The fetal heart monitor.

A Fetal well-being, yes. It's helpful, certainly.

Q As a pediatrician, you're familiar with it?

A Yes, I am. I think I've already stated that.

Q And as a pediatrician, you're aware that late deceleration on a fetal heart monitor tracing is an ominous sign of fetal distress; isn't that correct?

A No.

Q What are you aware of the significance of a

late deceleration?

A You know, again, you have to take that in conjunction. And I'm going to again tell you that I am not an expert in this area. I've tried to tell you that on numerous occasions, The late decelerations have to be taken in conjunction with gestation, the clinical situation, what is going on and the evidence of other means of fetal well-being. And certainly babies are born all the time will late decelerations that are normal and obstetricians will let that go to term if they are convinced that there is evidence of fetal well-being. That's an assessment that has to be made by the person interpreting the fetal monitor at that time.

Q Are the findings that you've identified in your letter of October 16th, 1985, with the number 6 -- that is, neonatal neurological syndrome which you've said i.e., resuscitation, intubation, hypotonia, respiratory distress, poor suck and swallow -- are those signs also consistent with acute intrauterine hypoxia7

A No, not in this clinical situation.

Q Just hypothetically in isolation?

A Yow usually don't see poor swck and swallow at birwh or wexw shortly after whaw. It uswally wakes a period of timc to develow afwerwards.

Q Isn't it consistent, possibly consistent with acwwe inwrawteric hypoxia?

A No. I alrcady said no. Now ic this clinical situawiom.

Q I'm walking about hypowhewically?

A I mean anything is poosiblc.

Q So it is possible?

A Yeah. Bwt I said anywhing and wnrelatew to this case is possible. But again, yow keew ignoring the fact whwt you have to interpret w c symptoms and the signs and laworatory wests in this clinical sitwation.

Q Let's assume for the moment -- let's talk awout for the moment your owinion what this child suffered a single intrauterine insult. When do you whink whaw insulw occurrew?

MR. PENICK:

Lew me object to the form of whe quess ion. He said --

MR. KULMAN:

He said single or multiple,

MR, PENICK:

-- it could be single or repeated episodes,

MR. KULLMAN:

I understand that. I'll ask him to clarify it.

Q Let's assume for the moment it vas single. When do you think that that occurred?

A Again, and the answer to your question is we're assuming that I've already stated that it's single or multiple.

Q Exactly,

A Again, it's hard to be absolutely certain, But based OR the clinical findings of this child at birth and the history of a bleeding at nine to ten days before delivery, that would be a reasonable period of time because of the child's other clinical findings and the child's problems at birth. Now, it could have been two weeks. Zt could have been five days before, And it could have been multiple episodes.

Q Do I understand that it's your opinion that it probably occurred at the time of this episode of bleeding some nine to ten days before delivery?

A I said that's within the realm of possibility in this case -- these cases. Now, you have to understand that we're dealing with a significant clinical situation in which a premature breech has profound lower cranial nerve involvement. That is seen almost universely on a chronic basis, not an acute basis. And so it may have been nine days. It may have been ten days. It may have been five days. And it may have been on repeated intervals.

Q Your use of the word "chronic. confuses me, Doctor, De you mean to suggest by your testimony that you believe that the child became hypoxic nine or ten days before delivery and remained severely hypoxic from then to birth?

A No. You assumed wrong. I did not state that,

Q What do you mean by the use of the tern "chronic"?

A Chronic means that it occurred in the past. It may have occurred on repeated occasions. But I don't think it was sustained in this particular child.

Q Is that useage of chronic somewhat unusual, Doctor? Doesn't chronic mean sustained?

A No, not in my terminology.

Q You always use it as a synonym for past?
A Yes.
Q Was this past event an acute event?
A I think any event that occurs at that time is an acute event,
Q So the chronic event you're describing is a past acute event?
A Well, I suppose that's one way of having some redundancy in the answer. But yes. I mean certainly that has to occur at a time, And if you want to say it occurs at that time and that's acute, I have no problem with that.
Q Do you think that the event continued?
A I don't know. Certainly we don't know enough about this particular situation for me to tell you that.
Q .What do you think happened nine or ten days before birth?
A I think the infant suffered a hypoxic insult at nine or ten days before or two weeks before or five days before resulting in profound involvement. And the reason that this occurs is the nature of the substrate or the nature of the child or the infant, A prematory

A It could have been related to the abruption. It could have been related to the eccentrically placed umbilical cord, the short umbilical cord, It could be a whole host of factors. It may have been nothing related to that. It could have been just vascular spasm.

Q Do you have an opinion as to vhat was the cause of the hypoxia nine or ten days before birth?

A Again, I've told you what it could be, I don't that there is anybody anywhere that can tell you the specific insult, We do know -- and what we do know -- do I not get to complete my answer?

Q You can do it, sir. But Mr. Penick has accused me of delaying this.

A I'm not delaying it. I'm trying to make this perfectly clear so that when we come back and *you* want to ask me what my opinion was at the tine of the deposition --

Q Please go ahead, sir. I'm really not trying to rush you at all,

THE WITNESS:

Can *you* read back what I said? He's changed my train of thought,

(REQUESTED PORTION OF RECORD READ.)

MR, KULLMANr

Q Let me just say for the record I'm really just objecting to the responsiveness of the answer. I understand you've told me that you don't know. I'm asking you if you have an opinion as to what was the cause of the hypoxia nine or ten days before in this case?

A I think I've given you the possibilities.

Q What are those possibilities?

A The abruption, the eccentrically placed umbilical cord, the short umbilical cord. It could have been some type of trauma to the abdomen. It could have been some type of hypotensive episode, Just any type of insult that could have caused hypoxia. And the reason I use hypoxia in distinction to ischemia is that we feel that this type of insult is due to a hypoxic insult, not an ischemic insult, because of the nature and the uniform injury to the brain stem which is extremely vulnerable in a prematory infant.

Q Vulnerable to hypoxia?

A Yes.

Q And this infant was just as vulnerable to

hypoxia nine days later?

A I don't understand the question.

Q Wasn't this premature infant vulnerable to hypoxia nine days later when he was born?

A Yes. But you don't have the clinical findings that this child had and the profound involvement as a result of an acute insult two hours before birth. It doesn't happen,

Q Why do you say this occurred nine or ten days before birth?

A I'm just trying to give you an example, You asked me when I thought the event occurred. The event occurred -- well, because you have a child that has developed significant neurological impairment which would go along with a nine- or ten-day interval. It could have been five days. It could have been fourteen days.

Q It could have been twenty days?

A Possible.

Q Why do you hesitate?

A I don't know. I'm just kind of going on the basis -- not kind of. I am going on the basis of the child's exasination and then subsequent development and

the studies at that time.

Q Could it have occurred thirty days before birth7

A No, I don't think so.

Q Why not?

A Because I would! have -- I would think we would have seen more involvement of the cortex and other structures if it occurred at thirty days and was significant enough to cause this type of problem.

Q Why?

A Well, it just would have.

Q Why?

A I guess only God knows why. I don't know why.

Q Well, there must be some reason you expressed that opinion. Why would you express more involvement of the cortex thirty days before Dr. Chalhub?

A Okay. I see. I'm sorry. I thought you meant just why some things occur. You mean why that's my opinion that it couldn't have occurred --

Q Yes.

A I would have expected that the head -- if it occurred thirty days before and it was significant and affected both the brain stem and the cortex, that the

child perhaps would have had a smaller head circumference, the child would have had more neurological involvement at birth than it did at this time and in a different type of distribution.

Q Like where?

A Well, the cortex and brain stem. This is really pretty much a tremendous insult to the lower brain stem.

Q You say you see this in breech cases?

A Yes.

Q How does that happen?

A Breech prernatures,

Q How docs that happen?

A How does what happen?

Q That you see this pattern of neuronal necrosis in the delivery of breech babies?

A I don't think that the delivery has anything to do with it, It probably is the presentation of the infant. And whether there's something wrong with the infant that it's breech and ha8 this problem and then it's superimposed by another insult or which is the cart before the horse, we don't know. Any child that's breech has a significant chance of having one or more

congenital malformations and more problems at birth, be it a premature or be it a term infant, That's well known, well recognized,

Q Do I understand correctly, Dr. Chalhub, that the pattern of neuronal necrosis you see here is consistent with the pattern that you would see with a premature breech vaginal delivery of a child who's born with respiratory disease?

A I said premature breach, I didn't say vaginal delivery. It's seen with a C section as well as a vaginal delivery,

Q You see them both ways?

A Yes.

Q When you see this pattern, if the child suffered severe hypoxia during a vaginal delivery, that is a breech presentation child?

A No, I don't think so. Not on an acute basis, And incidentally, doing a C section on this child at the time of delivery would have made no difference in the deficit. The child would have had the sane amount of neurological deficit.

Q That's because of your opinion that it all occurred nine or ten days before?

A No. That's also because of the way this child presented. The cervix was fully dilated, there was no evidence of head trauma, there was no evidence of body trauma, there was no evidence of trauma to the baby or molding of the head which usually is the reason that the children in breech deliveries suffer the problems.

Q Now, Doctor, I think you were going to explain to me the reasons why you think it occurred nine or ten days before delivery. That is, as I understand it, because the child's head circumference was normal size, because the child was not small for gestational age?

A I didn't say that.

Q Is that also consistent?

A It's consistent.

Q What other reasons do you have for believing that it occurred nine or ten days before birth?

A .And the nature of the neurological deficit at the time of birth.

Q Do you only see this neurological damage when the brain damage occurs nine or ten days before birth?

A I didn't say nine or ten days. We're estimating that because of the history of the abruption or bleeding at that particular tine. Now, whether

something occurred two weeks or something occurred five days or it was on repeated occasions, there's no way to tell.

Q Well, do you see this pattern of neuronal necrosis in children -- in infants where there is no event nine or ten days before birth?

A There has to be some event. Or else you wouldn't see the neuronal necrosis.

Q Can you see this pattern, neuronal necrosis, just from hypoxia occurring at birth?

A Give me all the specifics. I want to know the mother. I want to know all those things because I can't tell you as you ask that question.

Q Dr. Chalhub, what do you base your opinion on that this pattern of neuronal necrosis is consistent with an insult in this child nine or ten days before birth? And when I say that, do you have any studies on which you rely?

A In terms of what?

Q Of your opinion.

A That it's nine or ten days?

Q Yeah.

A That, you know? is a reflection of my 15 years in pediatric neurology, my command of the literature, my examination of multiple babies in similar situations, my review of the records, my review of the CT scans and my examination of the infant,

Q I understand that.

A Which incidentally has not been done by anybody else,

Q Dr. Chalhub, are you aware of any reports in the literature or studies which would state your hypothesis in this case: that is, that this particular type of neuronal necrosis and brain insult is generally seen because of a chronic hypoxic insult?

A There are many articles fn the literature.

Q Would you name me some of them?

A I can't give you those right now. I didn't come prepared to do that. But I'll be glad to furnish them to Mr. Penick In the future.

Q How long would it take you to do that?

A I'd have to go through a whole lot of files. Most of the tine this is a command that people have all of the time that practice in this area. So I'll have to get those for you.

Q Are you aware of any references or pediatric neurological texts that make this point that you're making?

A I'm sure there are. I don't generally refer to a pediatric neurology text,

Q Which ones do you have?

A In what area7

Q Just textbooks in pediatric neurology,

A I have Swaimen & Wright's textbook, Pediatric Practice in Neurology. Fennichel's book, Menkes' book. I have a large library. I can't give you all the names of them.

Q Do you have any others?

A Yeah, I have a lot of others. But I just can't sit down and give you -- if you like -- no, that's not going to be practical, either.

Q I'll be glad to go over there and look,

A No. I don't want you to come to my house. But I have an extensive library.

(A SHORT RECESS WAS TAKEN.)

M3. KULLMAN:

Q Dr. Chalhub, I think we've gotten to the second sentence. Do I understand correctly that this

hypoxic episode which you believe the child suffered some days before delivery may have either been acute or sustained?

MR. PENICK:

Let me object to the form of that question, the use of the word "acute." That's your word and not hie.

MR. KULLMAN:

He used it earlier, Bill.

HR. PENICK:

I think it's very confusing,

HR. KULLMAN:

Q Do you understand the question?

A I don't think I used it the way you used it being acute nine days before.

Q I thought we talked about chronic means to you passed acute?

A That's not a terminology. That's your terminology. I said I suppose if that's the way you want to put it. But that's not the way I phrased it.

Q How do you define chronic? He haven't gotten as far as I thought we had.

A Occurring in the past and either singularly or

on a repeated basis.

Q What does singularly mean?

A At one time.

Q For a short time or a long time?

A It depends on the type of insult and it depends on what you're talking about.

Q In this case.

A It would have had to occur long enough to cause the damage that the baby has.

Q How long is that?

A I don't know that. I don't think anybody can tell *you* exactly that. There are multiple factors that it is depending on, what regional cerebral blood flow at that time, what oxygen concentration, There's no way to measure that.

Q What would you say the range of time would be?

A .Excuse me?

Q What would *you* say the range of time would be if it happened as a single event?

A You know, I don't think I can tell you that,

Q Let's say it happened as a sustained event. Bow long would it take?

A What do you mean by sustained event?

Q Well, you said it either happened on a single or repeated basis. What do you mean by repeated?
A Okay, One day, then the next day, then the following day.
Q Do you have evidence that that happened?
A No, The evidence is pretty firm that the baby has profound lower cranial nerve involvement. Now, we do know that when babies have this at birth in babies that have been examined pathologically, those have been old insults by the amount of microglia proliferation, the fibrillary astrocytosis and the amount of necrosis, meaning that it's not an acute event, meaning it does not surround the time the baby is born, it happens at some time in the past. I can't tell you exactly at what time in the past, My best bet -- best estimation and professional expert opinion in this particular situation is that because of the vaginal bleeding nine to ten days before in the abnormal placenta, that in all probability, that's when the event occurred. It could have been two weeks, it could have been five days, it could have been seven days. And it could have been on multiple occasions.
Q Do you feel, Doctor, that if this child had

been delivered six days before it was delivered, that it would have been just as brain damaged as it is today7

A I don't know how to answer that.

Q Do you have an opinion?

A I said no. I can't answer it,

Q Do you feel that if this child had been delivered shortly after it suffered this past insult before delivery ..-

A Which past insult?

Q The past insult you were postulating occurred, that it would have been just as brain damaged as it is today?

A I don't know how to make that assumption.

Q Do you have an opinion on that?

A No.

Q Isn't it true, Doctor, that you often see abruptions of the placenta without there being any neurological damage to the fetus?

A I don't know what you mean by often.

Q Don't you know that that occurs?

A Yeah. But it doesn't oftenly occur.

Q It does occur?

A Certainly. But it doesn't occur in situations such as this where that baby has these clinical findings, this examination, these laboratory studies.

Q Well, with respect to your item number 2, abnormalities of the placenta, Doctor, vhat abnormalities are you referring to?

A A short umbilical cord that's eccentrically placed and two evidences of abruption.

Q Now, with respect to the size of the umbilical cord, do you feel that that caused this baby's brain damage?

A I think I've already commented on what I have felt that's occurred in this infant. And I cannot tell you -- and I don't think anybody can tell you -- that one single thing in relation to this baby caused the problem. What we do know is that it's extremely unusual in a premature breech infant with the neurologic examination that this child has to have the problem on an acute basis, acute meaning within the labor period and within the delivery period. It has to be a previous insult of some sort at some time within a reasonable period of time.

Q It can occur as an acute basis?

A I just said that it didn't.
Q You say it's unusual. Do you say that it can occur?
A I suppose anything is possible. But I'm not aware of it occurring on an acute basis. If the baby is a full term, that changes things.
Q In this baby, it's your testimony that it's possible that his brain damage is a result of an acute episode of hypoxia?
A Acute meaning what?
Q Acute meaning in the hour before birth.
A No, I said that it's my opinion that it is not possible and it is probable that it occurred at a previous time.
Q Are you saying it's not possible?
A I said exactly that this situation, in my estimation vfth the findings in this child -- and I'll be happy to repeat them one more time -- that this event did not occur one hour or two hours prior to birth.
Q 'Why is that not possible?
A Because of the examination, the pathologic findings, the prtmatory infant, the lack of meconium,

the history of the abruption, the abnormalities with the cord. All of these things.

Q Let's go through them one by one time. What makes it impossible? Does the fact that the baby is premature make it impossible?

A Does it make what impossible?

Q That this baby's brain damage could not result from an acute hypoxic episode.

A What are you defining now as an acute hypoxic episode? Because I think I may have some misunderstanding.

Q Occurring shortly before birth.

A What type of hypoxic episode?

Q What type of hypoxic episode have you been talking about?

A I'm talking about an episode that occurred in the past during predominantly lack of oxygen.

Q Describe it for me?

A I just did. I said lack of oxygen.

Q I'm talking about a lack of oxygen shortly before birth?

A Shortly meaning what?

Q One to two hours.

A I've already stated that I do not think it is possible for that to occur in this particular clinical situation,

Q No, Does the fact that this baby was premature eliminate the possibility that an acute hypoxic event such as we've just defined could cause this baby's pattern of brain damage?

MR. PENICK:

You mean does that factor alone?

WR, KULLMANt

Yes.

A No.

Q Does the fact that this lady had an episode of bleeding nine or ten days before make that impossible?

MR, PENICKr

In all of these questions that you're talking about, that factor alone?

MR. KULLMAN:

Alone; right,

A I can answer those all collectively; that those single factors, I can't make that assessment based on a single factor,

Q May I just ask the question, sir?

A Okay.

Q Does the fact that the mother had an episode of bleeding nine or ten days before make that impossible?

MR. PENICK:

If you can answer that.

A I can't answer the question.

MR. KULLMAN:

Q What about the fact that the baby had low Apgars at birth? Does that make that impossible?

A Again, I can't answer your question as an individual basis. You have to take medicine collectively with all the clinical findings to make a conclusion. So I can't answer that. I'm not trying to be difficult. But you cannot practice medicine based on single Factors.

Q I'm just asking questions, Doctor. What about the fact that the baby had neonatal neurological syndrome? Does that make it impossible that this baby's brain damage is a result of an acute hypoxic episode?

A It makes it impossible on the basis of this child's history, clinical findings, examination and

subsequent development.

Q What about the early onset of seizures? In and of itself, does that make it impossible that this child's brain damage was a result of an acute hypoxic

A To the contrary. That's considerably more consistent with a previous episode occurring at some time in the past.

Q Hell, do you say that that makes it impossible that this baby's brain damage was a result of acute hypoxia?

A Taken together with everything else, it makes it impossible.

Q Just by itself, sir,

A I can't answer that question.

Q What about the CT scan? Do you say that the CT scan is inconsistent vith an acute hypoxic episode in and of itself?

A When?

Q The CT scans that you have examined.

A Taken together collectively with all of the other findings and the baby's -- I have to answer the question the way I can answer it.

Q If you can't answer the question, answer it that way.

A I cannot answer it that way,

Q What about this child's profound lower cranial nerve involvement? Does that fact in and of itself make it imposeible that this child's brain damage is a result of an acute hypoxic episode?

A You know, again, it's extremely unlikely. And you'd have to base it on what is known. And I don't know in my personal experience of a case with such profound neurological involvement that ha3 occurred at the time of delivery in a prematory infant.

Q Does that make it impossible?

A I suppose anything is possible. But an terms of what we know in medicine and what we have to take collectively, I just don't see it,

Q That's your opinion?

A That is my opinion,

Q Other people might have different opinions?

A No, I don't think other people do have --

MR. PENICK:

Anything is possible.

A Anything is possible, The published

literature in my experience is that this is what occurs.

MR. KULLMAN:

Q You don't think other pediatric neurologists might have different opinions about thia?

MS. PENICK:

You don't have to answer that question.

MR. XULLMAN:

Q What was your answer?

A Oh, sure, I think anybody can. But they have to have examined the infant and looked over the clinical material,

Q The next sentence, you say: This particular pattern of selective neuronal necrosis is almost always seen in a premature infant due to hypoxic metabolic danage and possibly subsequent hyperoxia and mitigates strongly against an acute event occurring shortly before bfrth, What do you mean by pattern of selective neuronal necrosis?

A Well, that's what we've been talking about for an hour, And that is, in the prematory fnfant, they have selective vulnerability of the lower brain stem as opposed to the cortex. And the reason for that, it is

thought, is because they have a high metabolic rate within their brain stem and are extremely sensitive to decreases in oxygen concentration. It's also not in a vascular distribution such as one sees with a middle cerebral artery infarct or a vertebral vascular infarct. It's in a diffuse pattern within the brain stem. And because it is a prematory infant, that selectivity and that vulnerability in that portion of the nervous system is particularly striking.

Q What is periventricular leukomalacia?

A It's decreased densities in the periventricular area.

Q Does this child have that?

A No.

Q Does this child have evidence of subarachnoid hemorrhage?

A When?

Q Ever.

A Yeah. It had a lumbar puncture at birth. Now, whether that was a traumatic lumbar puncture or not, I can't really be sure because they didn't describe it.

Q What about subependymal hemorrhage?

A Subependymal hemorrhage? Bas no evidence of that.

Q What about intraventricular hemorrhage?

A Be has no evidence of intraventricular

Q

A *The* child does have loss of cortical neurons.

Q Diffuse or focal?

A What do you mean by diffuse or focal? In what area.

A It's focal in the temporal lobes and the sylvian fissures.

Q Where else?

A That's all I can see.

Q And where is it diffuse?

A Over the entire cortex because the sulci are slightly larger. But again, this child has suffered a postnatai insult, too, and postnatal asphyxial insult. And how much of that has contributed to the child's problems is again difficult to be certain. The child

had repeated apneic spells, repreated bradycardia spells, received albumin and volume expanders before transfer to the Baptist Hospital. So those are all factors which would go into possibly a cortical insult.

Q What do you think those postbirth events did in this case?

A I'm sure it contributed to the child's problems. But that's something that nobody can do anything about.

Q Do you think they caused additional brain damage?

A I think it's possible, yes.

Q Do you think they caused additional damage to the brain stem?

A I don't know hov to answer that.

Q Doctor, this past insult that you say occurred nine or ten days before birth, how would you have expected that to affect the fetal movement in this case?

A Probably Wouldn't have altered it at all.

Q Why is thnt?

A You know, unless it's going to -- it takes time for those lesions to develop and time for that

weakness and paralysis to be permanent. And again, it's hard for sometimes mothers to notice decreases in fetal movement.

Q How long do you think it would have taken this insult to have had its effect on the child?

A I don't know, I mean, it's a different environment. The uterus and the amniotic fluid and problems that are occurring in utero, it's difficult to be certain,

Q How would you have expected this mother to describe the fetal movement after this insult?

A I would have expected her not to notice any change.

Q Well, would you have expected there to have been fetal movement?

A Yes, absolutely.

Q What if there was no fetal movement?

A Well, then, I would have thought that there was something quite abnormal with the baby, more than just a hypoxic episode.

Q Why?

A well, usually when you have cessation of fetal movement, the infant is about to die or has severe

neuromuscular disease. Neither one of those occurred in this situation.

Q Pardon me if I've asked this before,. Doctor. But thio past insult, what do you think it did to the baby's brain?

MR. PENICK:

You're right, You did ask that about seven tines before.

MR. KULLMAN:

Maybe this will be the last time.

A State your question again,

Q What do you think this past hypoxic insult did to the baby's brain?

A Well, I've tried to explain that €or the past two hour8 in terms of the lower cranial nerve involvement.

Q What does that mean?

A That means that the child's cranial nerves five, seven, nine and ten are profoundly involved and the child has a spastic quadriparesis. And this comes as a selective involvement of the lower cranial nerves, the lower brain stem,. the pons and the medulla in a prematory infant. The reasons again are because the

prematory infant has a high vulnerability in that area because of the high metabolic rate, the lack of adequate blood flow as compared to the full term which is directly the opposite. The full term infant has a selective vulnerability to the watershed area or the cortex whereas opposed to the prematory infant which is well vascularized docs not have that ability. So when you see a chronic insult in a child, particularly a prematory infant, and €or some reason particularly prematory breeches such as this child, you have the clinical picture. And let's make no mistake. This is not a common picture. And you don't have a child that has diffuse damage. This child has profound, I mean remarkable damage in the lower brain stem. So it's not just a run of the mill acute insult occurring before birth. It's a complicated case. The child also has postnatal evidence of problems in the neonatal period which are difficult to take care of when you already have a damaged baby that's born. So when you have repeated episode6 of apnea, bradycardia, shock, that obviously has to take its toll.

Q Dr. Chalhub, what docs the hypoxia do? Why does it harm the baby's brain?

A Because it kills neurons.

Q Because they require oxygen?

A Well, you know, they require high energy stores which are as a consequence of the oxygen,

Q So if they don't have oxygen, they die?

A What do you mean? We're talking hypothetically and unrelated, neurons in general or what?

Q This case.

A Yes. What I'm talking about is a neuronal necrosis which is a direct insult due to lack ob oxygen, Now, there are some individuals that feel that this type of injury is due to, quote, "hyperoxia." In other words, after the infant is born, the fact that you have to give high concentrations of oxygen to support respiration may cause further damage and it nay also contribute to that, I don't think anybody knows the answer to that, It's something that deserves further study.

Q So lack of oxygen kills neurons selectively; is that correct?

A As a general statement unrelated to anything specifically unless you want to define specifics, yes.

Q In this case, *you* believe that the lack of oxygen killed neurons in this baby's brain selectively?
A On a chronic basis.
Q And by chronic you mean sometime before birth?
A That's correct.
Q And the reason lack of oxygen killed neurons selectively in your opinion is because the baby was premature?
A No. That's the reason that you see the distribution of neuronal loss *is* because the baby is prenature as opposed to a full term.
Q Would a full-term baby have had a different selective death of neurons?
A Yes.
Q So this baby's pattern of selective neuron death was a result of the fact that it was premature?
A That's correct. As well as we can understand. I mean, certainly there are probably other factors.
Q And the pattern of selective neuronal death we're talking about is a pattern which the primary focus of the neuron death is in the brain stem?
A Yes.
Q And that's characteristic, I take it, of

situations where you see brain damage premature that they have this predominantly brain stem neuronal death?

A No, I didn't say that.

Q I what true?

A No. You know, there are a lot of brain damaged premature due to subependymal hemorrhage, due to intraventricular hemorrhage, due to a whole host of other problems. We're now talking about those. We're talking about this particular type of problem.

Q Well, did this baby have any of those hemorrhages?

A No.

Q What causes those hemorrhage?

A Problems with the vascular architecture and cerebral blood flow in the premature.

Q Does hypoxia cause those hemorrhages?

A No, they don't.

Q Is it your testimony that hypoxia does not cause those hemorrhages in a premature or doesn't cause those hemorrhages period?

A Well, again, we're struggling with an area that is continuing in research. Subependymal hemorrhages and intraventricular hemorrhages may in

part be due to hypoxia, But it's also due to ischemia and lack of blood flow which makes that particular area weak then they hemorrhage into it. So again, it may also be due to when one gives fluids and increases the blood pressure that causes the hemorrhage. So I don't think we know exactly the pathophysiology of periventricular and intraventricular hemorrhage in the premature. At least I don't know it.

Q Now, this pattern *of* selective neuronal necrosis that you see in prenatures, do you only see it in prematures where the delivery is by breech?

A No, You can see it when they're delivered by cesarean section,

Q This pattern of selective neuronal necrosis that you see in prematures, do you see it only when there has been episodes of bleeding by the mother?

A I don't know the answer to that,

Q And the reason the neurons die is because of lack of oxygen in this case?

A Taken together again with the type of infant, the age of the infant, the type of neurological damage, as best we can estimate, it is thought that and hypothesized that this is the pathophysiological

mechanism of neuronal impairment in this particular situation.

Q And that's because the premature is -- what did you say? Selectively --

A It's because the brain stem -- excuse me for interrupting. Do you want to finish your question?

Q I can't reach for that word. You said selectively susceptible?

A Right.

Q What was your word?

A Well, the reason is again the prematory infant's brain stem is a different metabolic rate than the full-term infant or than you or Mr. Penick or me. It has a high metabolic rate and requires an excessive amount of oxygen. And when that's impaired, albeit slightly, some damage occurs. Now, when it's significant, you see a lot of damage. And you see it selectively involving the brain stem and to a lesser extent the cortex.

Q How long has this been known?

A I don't know. I would have to go back and look at the reports of the early articles and the pathology, I just don't know. There's articles in the

Q When you were getting your training, was this

A Yes.

Q Obstetricians know this?

A No, they don't know that. But individuals who testify in this area ought to know it.

Q When you say testify in this area, what do you mean by that?

A As an expert.

Q Have you previously testified where the issue has been to distinguish between chronic hypoxia and what you call acute hypoxia?

A I don't recall.

Q Have you ever given such testimony?

A I just don't know,

Q Have you ever written a paper on that subject?

A On what?

Q On the distinction between the findings you would expect with what you've called chronic hypoxia as distinguished from acute hypoxia?

A Let's get the facts right again. We're talking about a prematory breech infant in this situation that has a clinical picture consistent with a chronic hypoxic insult,

Q Have you written on that subject?

A No, I haven't.

Q Have you spoken on that subject?

A Yes,

Q Where?

A I'm sure at the pediatric ground rounds and at the neurology ground rounds.

Q You mean at the hospital here?

A Yes.

Q And when I say you've spoken on that subject, that's the distinction you would expect between an acute insult to a premature breech and a chronic insult?

A No, I can't say that I've talked specifically as your question. We talk about neonates, we talk about prematures with selective injuries. So I don't know. I'd have to go back and look at the lectures.

Q So this is the first time where you have researched and expressed an opinion as to a distinction

between a chronic insult and an acute insult and its effects on a premature breech?

A No, I didn't say that,

Q When have you done so before?

A You mean testified in this situation?

Q No. Just researched and studied and talked about that problem,

A Well, that goes on all the time. And in terms of your continuing education and continually seeing patients, this is the first such infant that I've seen in a good while that's had this type of clinical -- these are unusual children. And they're often misdiagnosed as acute asphyxial problems such as in this case when in fact the insult occurred prior to the delivery. It's no fault of anyone's, It's something that cannot be prevented. And unfortunately we get into the situation that we're in.

Q Sometime back did you testify in such a case?

A No, I've not testified in a case that's similar to this.

Q Do you agree, Dr. Chalhub, that late decelerations on a fetal heart monitor is, a pathologic finding associated with uteral placental insufficiency

and is indicative of inadequate fetal oxygenation?

A No.

Q In this hypoxic episode that you say occurred nine or ten days before birth, Doctor, how would you expect that to have affected the child's liver?

A The liver?

Q Yes.

A I don't think it would -- I really wouldn't have expected it to affect the liver.

Q Isn't the liver one of the organs that's most susceptible to hypoxia and to injury by hypoxia?

A No, not that I'm aware of, It's usually ischemia.

Q What about the child's heart? How would you expect it to affect the child's heart?

A It may or may not, It depends again on the length of time. Sometimes it can certainly cause myocardial damage or ischemia. But again, that's usually due to ischemia and not hypoxia alone.

Q In thio case do you think the hypoxic episode you say that occurred nine or ten days before birth would Save normally caused damage to the heart?

A Probably not.

Q Why not?

A Because hypoxia in general does not cause that much damage to the heart unless it's sustained for man;, many days and severe.

Q Do you believe that this was sustained for many days?

A No, I don't. As I've already told you, the best that I can put together -- and again, what you have to do is you have a clinical entity which is indisputable, the physical examination, the CT scan, the findings and the course. You have to go Back and explain that within a reasonable medical probability, not just assume that because the baby is born and it's damaged, that *it's* due to an insult that occurred *two* hours prior to delivery. It has to fit with everything.

Q Now, Dr. Chalhub, in this case, could not a hypoxic ischemic event have caused severe irreversible brain damage if it lasted for a period of one to two minutes or up to 20 to 30 minutes and show exactly the pattern of neuronal necrosis that you've described?

MR. PENICK:

Can you read that back to me?

(REQUESTED PORTION OF RECORD READ.)

MR. PENICK:

I have to object to the form of the question. Because I think it's an incomplete hypothetical.

A What situation are you talking about?

MR. KULLMAN:

Q In this case.

A I don't knov how to answer that, I can't answer that based on that data because I don't know the other variables.

Q Let me just ask you a hypothetical as you say totally without respect to this case. In a premature infant, could a hypoxic ischemic event cause the pattern of brain damage that you see in this case?

A A hypoxic ischemic event?

Q Yes.

A It's predominately hypoxia, less point ischemia. But it can occur in a prematory infant.

Q And could cause this pattern?

A But I didn't say one to two-to twenty minutes.

MR. PENICK:

Let ma ask you to clarify. Are you talking about an event that occurs before labor or during labor

or what?

MR. KULLMAN:

Let's go through them all,

Q Could a hypoxic ischemic event in a premature such as this one occurring in utero cause the pattern of neuronal necrosis we see in this case?

MR. PENICK:

I'm going to ask you for the same clarification.

A When in utero?

Q One to two hours before delivery.

A I've already tried over the past three hours to tell you I don't think that's possible in this particular situation.

Q I'm not talking about this particular situation. I'm talking about hypothetically.

A Hypothetically it's unlikely in this situation.

Q But it's possible?

A Anything is possible, Mr. Kullman.

Q Let's talk about just after birth. Could a hypoxic ischemic event just after birth cause this pattern of neuronal necrosis?

A You've got to define hypoxia and ischemia in what you're talking about. Does the child have a cardiac arrest or does the child have just a little bit of decrease in cerebral blood flow or what?

Q Let's talk about lack of oxygen,.

A Total lack of oxygen or a little bit of lack of oxygen?

Q Severe lack of oxygen,

A What is severe? What's the PO23

Q I don't know, Doctor. You've been talking here for three hours and you've never said what the PO2 in this child was nine or ten days before,

A I don't know what it was. I don't have any way to find out what it was.

Q But you think it caused brain damage?

A The child has brain damage, Mr. Kullman. We have unequivocally established the child has brain daaagt. And the child has severe brain damage.

Q What was the PO2 when it had this brain damage?

A I have no idea. I don't know of any way to tell.

Q What month was it in?

A The PO2 may have been fine in the blood. It probably wasn't very good in the brain.

Q What do you mean by very good in the brain?

A I don't know,, There's no way to assess that. I don't know how to do that.

Q What would you say the range was?

A I don't know.

Q You have no idea what the range of PO2 was in the brain?

A NO.

Q You have no idea what a range of PO2 would be required to produce this brain damage?

A I can tell you that experimentally in rats and monkeys. But I can't tell *you* babies because we don't have that data.

Q You don't know what level of PO2 --

A No one knows what it is.

Q You don't know what level of PO2 *it* takes to cause brain damage in a premature infant?

A As I told you, we know experimentally in other animals but not in prematory human beings.

Q What about level of cardiac function it takes to cause brain damage in a premature infant? Do you

know what level of cardiac function it takes to cause permanent irreversible brain damage in premature infants?

A How are you defining cardiac function?

Q Lowering of pulse,

A Lowering of pulse for hew long and how much?

Q You tell me.

A With all dus respect, you're here to ask the questions. I'm not here to give you the questions and answer them.

Q Let's assume for five minutes?

A Whet are we assuming for five minutes?

Q That he has a lowered pulse.

A Lowered pulse what? What's his cardiac output? What's his cerebral blood flow?

Q You tell me, What would it take, Doctor, to cause pernanent frreveraible damage such as we see in this case?

A A8 I told you before, I can't answer that because there is no data available. What we do know is the timing of the insult by the pathologic exanination of similar infants puts it at a time other than two hours before the delivery. That's what we know. Now,

what happened at nine days of age and what the specifics are, I don't know how to tell you that,

Q You don't know what reduction of cardiac function it takes to cause permanent irreversible brain damage?

A Hypothetically, no, I don't know that. I don't know how to get that data other than in animals. And I can give you that in animals.

Q Do you have an opinion?

A An opinion about what?

Q As to what level of reduction of cardiac function it would take to conduce the irreversible brain damage in a premature infant?

A When?

Q Two hours before birth.

A No, I don't have an opinion,

Q What about five minutes after birth?

A Por how long?

Q How long would it take?

MR. PENICKr

Let me object to this line of questioning. As I understand the testimony, it depends upon a number of variables. If you change one variable, then you chance

the other variables in the formula.

MR. XULLMAN:

Q Do you know the answer at any variable on a human infant?

MR. PENICK:

I object because the possibilities are infinite. If you have so many variables involved and you change one -- you change one 1 percent, 50 percent, 98 percent and it changes the whole formula.

A I'm not trying to be difficult. The answer to you question is probably impossible. Because unless you sit down and give somebody a whole lot of data, they're going to have a difficult time giving you a length of time for the insult. All we can do is to tell you what's been some experimentally. And we try to make analogies, But that doesn't necessarily mean it's the same. Because fetal monkey data we have found to be certainly not consistent with human data. The beagle puppy is probably more consistent.

MR. KULLMAN:

Q What about rats?

A Rats certainly are not as consistent that you can translate the data equivocally. But you have to do

the best you can, We don't do experiments on fetuses.

Q And isn't it true, Doctor, that even among premature infants, there's variability as to the dasage that occurs?

A That's just such a broad question, What do you mean variability? What kind of damage and what kind of prematures and what's the matter with them?

Q Would you admit, sir, that you could apply the exact same insult in terms of hypoxia and ischemia to two different 35-veek premature fetuses and *get* different results in terns of brain damage?

A What type of results? What's different?

Q Would you admit, sir, that based upon your experience, that there are so many factors involved with the human body, that this host variability that you don't understand produces different results in seemingly similar cases?

MR. PENICK:

Object to the form of the question, You can answer it if *you* can.

A You know, again, it's a very broad general question, totally unrelated to this situation. And you certainly -- not one type of brain damage is absolutely

and unequivocally neuron to neuron similar, But they are similar enough and we do have pathological studies enough to date the time of insults, And this particular situation with this infant, with this clinical finding, with this CT scan, with this development, we can say within a reasonable medical probability that this insult did not occur two hours prior to delivery and was on a chronic basis at some time in the past.

Q Can you identify for me any reported study that dates the time of insult as you say you've done in this case?

A I've tried to tell you that that's required 15 years of study and review. And it's in the literature, I'm not here to do your research.

Q My question is can you identify for me or for Mr. Penick any study in the reported literature that supports your statement --

A I'll do my best,

Q -- that dates the time of an Insult as you've done in this case?

A I'll do my best.

Q Can you do that, sir, now?

A Right this moment? I'll have to go back and look through the articles,

Q Can you now identify for us any study which supports your statement that you can date the time of an insult as you've done in this case?

A As I've told you, I will do my best to provide that for you.

Q The answer is you cannot identify such a statement now?

A No, I didn't say that. The answer is that I will do my best to provide it for you.

Q Can you do it now?

A I can't do it right at this moment sitting in this room, no.

Q Do you intend to do so?

MR. PENICKr

Just a minute. That's not a question for him but for ma, You don't have to answer that question. The doctor is not under any obligation to do medical research for you.

MR. KULLMAN:

I understand that. I'm asking him if he intends to do it as an expert witness appearing in this

case,

MR. PENICK!

That's a matter for us to talk about. And I don't think that's a proper question,

MR. KULLMANt

Q Do *you* want *to* answer the question, Doctor?

MR. PENICK:

You don't have to answer the question, Doctor. In fact, I am instructing *you* not to answer the question,

(A DISCUSSION WAS HELD OFF THE RECORD.)

MR. KULLMAN:

Q Doctor, the second half of the sentence we're working on here says --

A Which article are you referring to?

Q I'm referring to your letter of October 16th, 1985, to Mr. Penick. You say: Due to hypoxic metabolic damage and possibly subsequent hyperoxia. What do you mean by that?

A Well, again, we've already talked about that, Some people and some investigators feel that just selective neuronal necrosis in general is thought to be

possibly related to a damage occurring and aggravating or an existing damage after birth due to high concentrations of oxygen, Now, I don't know enough about that to tell you anything more than that.

Q Who holds that view?

A I think Winkel, W-I-N-K-E-L, is the author that holds that view.

Q What is his specialty?

A I think he's a biochemist and a lipid chemist.

Q And he believes that this pattern of neuronal necrosis occurs after birth?

A No. You're twisting my words again. That hyperoxia can cause neuronal damage, Be's not saying that it occurs after birth but it can contribute to the problem after birth.

Q And produce this pattern that you've described?

A The pattern is already existing at birth. It can make it considerably worse.

3 Mr. Winkel said that -- or Dr. Winkel. said :hat?

? A Yes.

Q Where docs he say that?

A I don't know.

Q Is it in a journal or a book?

A It's in one of the Journal of Clinical Chemistries, It's been a long time.

Q The next sentence says: The sequence of events in this particular child is entirely consistent with the documented evidence in the child's chart, X-rays and laboratory studies. What do you mean by that?

A Well, again, as we've been talking about for a period of time, that if you take the child's chart, meaning giving you the gestation, the fact the child's premature, the fact that the child was breech, the fact that the mother had bleeding at nine days before, the clinical examination at birth, the subsequent exanination at birth and the examination that I performed personally, the CT scans in sequence and the laboratory studies excluding other probabilities, that this child indeed had a significant intrauterine hypoxic insult at some time before birth.

Q That's what you mean by the sequence of events?

A Yes.

Q That he suffered a significant hypoxic insult sometime before birth?

A That's correct.

Q Then it says semicolon, quote: "Indeed the history and clinical presentation of this infant results from a prior brain stem lesion and not intrapartum acute asphyxia." What docs that mean?

A That means that the difficulty this child had right at birth with respirations and with sucking and swallowing vhich was documented by the physicians was due to the fact that the brain sten was injured prior to birth, It's not due to the result of something that occurred an hour or two before delivery. And that's fairly characteristic of these type of infants,

Q The prior brain stem lesion you're speaking of resulted from lack of oxygen?

A That's correct,

Q Isn't intrapartum acute asphyxia, doesn't that cause lack of oxygen?

A It can. It can also be due to ischemia.

Q So intrapartum acute asphyxia is what you think caused the brain stem lesion?

A No. It says not, doesn't it? Let me read it

again for you: Indeed the history and clinical presentation of this infant results from a prior brain stern lesion and not intrapartum acute asphyxia.

Q It's your statement, then, that it was intrauterine acute asphyxia that caused the brain stern lesion?

A Didn't I just say that, that it did not?

Q I'm saying intrauterine acute asphyxia --

A Did not cause it. That's what the statement says,

Q Well, Doctor, you have testified previously, haven't you, that you believe that the child's brain stem lesion resulted from a hypoxia; is that correct?

A That's right.

Q What's the difference between hypoxia in that context and asphyxia?

A Hypoxia is different from asphyxia.

Q Hov?

A Well, the definition of hypoxia is decreased oxygen. Asphyxia is decreased oxygen, increased PCO2 and. acidosis.

Q Does asphyxia cause a brain stem lesion in a premature infant?

A Now two hours prior to delivery, no.

Q I'm now saying that, sir. Doesn't intrauterine asphyxia cause a brain stem lesion in a premature infant?

A Not acutely.

Q What do you mean now acutely?

A Well, I'm trying to be patient and explain this time and time again. We've already stated that acutely means during the time of labor and delivery.

Q That's all you mean by acutely?

A That's right.

Q Isn't it true, sir, that a brief period of intrauterine asphyxia can cause a brain stem lesion?

Q When?

A In the premature infant.

A But when?

Q Intrauterine.

A But when intrauterine?

Q Any time before birth.

A Well, I don't know about that. Hypothetically I think anything is possible. And yes, I think brain stem lesions can occur. But not this type of brain stem lesion, not this clinical presentation, not this

infant.

Q Why can the brain stem lesion occur nine or ten days before birth and not later?

A What do you mean why?

Q Why can lack of oxygen cause this type of brain sten lesion only nine or ten days before birth?

A I didn't say only nine or ten days. It could have been five, it could have been ten, it could have been *two* weeks.

Q What about four?

A Four would be stretching it, The pathologic changes are usually three to five days.

Q What pathologic changes are you talking about?

A Microglia proliferation, fibrillary astrocytosis and necrosis.

Q Do you know that this child suffered any of those pathologic changes?

A I think that one can say within a reasonable degree of medical probability, based on the physical examination and the CT ocnn, that that occurred.

Q Do you know that any of those pathological changes occurred?

A Well, I haven't autopsied the child nor have a

brain stem preparation. But we don't do that in medicine. We go by the laboratory findings, what is consistent, what looks like similar situations and then what is correlated pathologically with other cases. That's the way medicine is practiced, Mr. Kullman.

Q Exactly. And without actually looking at the brain stem, you don't know that any of that pathology has occurred?

A If you're going on that assumption, then nobody knows anything in medicine. But we try to make reasonable assumptions based on accurate data, clinical descriptions, laboratory studies and sequence of events in children and adults to make these otatenents.

Q And is it your testimony that you know that those lesions or you think those lesions exist today?

A Yes.

Q On the basis of your clinical examination of the patient?

A On the basis of the history, the gestation, the problem ut birth, the physical exanination, the subsequent development, my examination, the CT scan and the laboratory reports that exclude other problem.

Q And isn't it true, sir, that those

pathological changes would produce the exact same evidence in terms of this child's presentation if those pathologic changes occurred in the five days after birth?

A No, that's not true.

Q You would see the same pattern of neuronal necrosis, wouldn't you?

A No, I don't think so. I just don't know. There are A lot of factors that change five days after birth. So we'd have to make certain, You could surely have some brain stem impairment, But it's a different ballgame. It's a different set of clinical problems.

Q Do you have any studies to support that distinction?

A Yeah. Usually these children first of all are out of the uterus. That changes the whole ballgame. You're supporting things artificially. And you're having increased oxygen concentrations, you're having ventilators, you're having changes in brain autoregulation, you're having hypobilirubinemia, hypocalcium. All these factors are terribly important. And --

Q And all of them can cause --

MR. PENICK:

Wait. Go ahead and finish.

A All of these factors are terribly important. Now, the reason that I make these statements and make them with a good degree of confidence is that this is the type of situation that we see. We don't see this in a five-day-old infant. We see this in a baby that is born that's had a preexisting insult which is documented by similar pathologic studies in terms of the timing.

MR. KULLMAN:

Q What don't you see in a five-day-old infant?

A You don't see this type of problen in terns of this sequence of events,

Q What are you talking about? What type of problem?

A I don't know how to answer it any differently. I mean, I can't answer it any other way,

Q You have said that it takes five days to produce the neuronal necrosis that you've described; is that correct?

A Uh-huh (positive response,)

Three to five days?

A Yes.
Q It could not have happened?
A I think anything is possible. But again, you keep trying to isolate certain clinical factors and certain laboratory factors. And we don't practice medicine in isolation. And unless you're going to go with the vhole clinical sequence and the whole spectrum, you cannot give your answer. I said anything is possible in isolation. But clinically and collectively speaking, that's not the case.
Q Doctor, have you looked at the first CT scan done on this child?
A Yes.
Q How do you interpret it?
A It's hard for me to interpret. It's an inadequate scan.
Q Have you interpreted it?
A I've looked at it. The problem is you can't see the brain stem and there's motion artifact, And I thfnk the artifact of the encephalomalacia to the frontal brea is not real. It's just the positioning.
Q Have you asked a neuroradiologiet about that?
A I interpret my own scans. And I think I would

be probably more experienced in neonates than the neuroradiologists.

Q So you can't interpret it?

A No. I said -- I've given you my interpretation; that you do not see the brain sten on the scan. And there's too much motion. And the contrast is not very good to be able to make any definitive statements about other parts of the brain.

Q Given your testimony here today, what vould you expect that CT scan to show?

A You know, I can't tell you what I would expect unless we would see it. I vould expect to see probably either to have no significant changes, depending on when the insult occurred. If it was five days before, then it might not be long enough to see changes. If it was ten days, you might see some changes. If it was two weeks, then most likely you would see perhaps a smaller atrophied brain stem And then also changes in the cortical area.

Q What about one day?

A -Probably wouldn't see any changes.

Q What about the craniologist's data? Did you look at that?

A Yes, I did have that. The ultrasound is far less sensitive than the CT scan, So if you can't make any Reads or tails out of the CT scan, the ultrasound, all it tells you is there's no hemorrhage.

Q Did you interpret the ultrasound?

A Yes.

Q Bow did you interpret it?

A As showing no hemorrhage.

Q Anything else?

A Anything else about what?

Q From that ultrasound that you saw.

A No.

Q What about the EEGs? Did you examine those?

A They were not provided for me. All I had was the report.

Q What would you expect the EEGs to show?

A It can be all the way from having no paroxysmal activity to showing a considerable amount. You know, it just depends, We see babies that have seizures all the tine with, quote, "normal EEGs." But again? one has to reserve -- interpreting neonatal EEGs is extremely difficult. And one has to have an experienced individual interpreting them.

Q Are you able to interpret them?
A Yes.
Q But you were not provided them?
A I just didn't get it in the records. All I got was the report, I'd be more than happy if you would provide it for me.
Q Sure.
A What do you want me to do with this? It's going to take me awhile to interpret it.
Q Okay.
A I don't think we have enough time.
MR. KULLMAN:
Do you have copies of that?
MR. PENICK:
I think I have copies of this.
MR. KULLMAN:
That's all right. I'll just take thee back.
THE WITNESS:
We would like to get copies of it.
MR. KULLMAN:
He has it.
THE WITNESS:
I'm sorry. I just have not seen it.

Q How would you expect that the insult that you've described in this case would affect the fetal heart rate variability in this child?

MR. PENICK:

During labor?

MR. KULLMAN:

Yes.

A Probably wouldn't have any effect.

Q Why do you say that?

A Because you've had an insult that occurred in the past, either on a single basis, possibly a repeated basis. And heart rata is a very low brain sten function which is usually only changed unless there's something occurring -- excuse me. I lost my train of thought. The heart rate is a lower function. It's usually only near the time that the child is having serious significant problems that you would see changes. And that just did not occur.

Q You would not expect, then, that a chronically brain damaged infant would show lack of beat-to-beat variability in a fetal heart monitor tracing?

A It may or may not, In this particular situation, no, I would not.

Q What about lack of long term variability? Would you expect to see that in a chronically brain damaged baby?

A Again, you're going to have to tell me what the chronically brain amaged baby is from. Is it from cytomegalovirus, herpes simplex, is it from thrombocytopenia with hemorrhage? It depends on what's going on.

Q Well, let's say from hypoxia.

A No. It depends on again the amount, the degree, the severity, the gestation. A whole lot of factors. But in this particular situation, I would not expect to see really any difference in the fetal heart tones.

Q What do you base that upon?

A Based on my knowledge, experience and review of the literature in similar situations.

Q Can you identify any similar situations you've looked at?

MR. PENICK:

I'm going to instruct him not to identify any patients by name.

A I couldn't do it anyway.

Q All of those are for St. Paul?

A NO.

Q The ones that you've consulted with St. Paul about --

A I just don't know, I don't have that information here,

MR. KULLMANt

I have no further questions.

MR. PENICK:

I don't have any questions.

(TRE DEPOSITION OF ELXAS CHALHUB, M.D., WAS CONCLUDED AT 3:10 P.M.)

C E R T I F I C A T E

I, ELIAS CRALHUB, M.D., do hereby certify that on this ____ day of _____, 1985, I have read the foregoing transcript and to the best of my knowledge it constitutes a true and accurate transcript of my testfnony taken on oral examination on November 5, 1985.

_____

ELIAS CHALHUB, M.D.

Subscribed and sworn to before me on this ____ day of _____ 1985,

_____

NOTARY PUBLIC

My Commission Expires:

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November 15, 1985

Chalhub file

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Cunningham & Bounds
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1041 West Alexander Street
Post Office Box 558
Greenville, Mississippi 38702-0558

Re: Ross Aaron Naquin

Dear Gentlemen:

I want to thank both of you for the help you've given me with respect to these two Mississippi experts, Drs. Morrison and Chalhub. I think they are both very formidable defense experts who are going to cause all of us a lot of trouble.

I wish I could tell you that I felt that I had done some damage to Dr. Chalhub when I deposed him . . . but I think I was the only one who suffered harm. If either one of you figure out a way to successfully cross-examine this guy, I certainly would appreciate your advice.

I am enclosing a copy of my deposition which I hope will be of some help to someone.

In my case, I plan to speak with Dr. Joseph Volpe with respect to Dr. Chalhub's testimony in the hopes of enlisting him as an expert rebuttal witness. Dr. Volpe is nationally known 8s a leading authority on perinatal hypoxic encephalopathy.

Sincerely,

Lawrence S. Kullman

LSK/cab
Enclosure

A I don't know.

Q Is it in a journal or a book?

A It's in one of the Journal of Clinical Chemistries. It's been a long time.

Q The next sentence says: The sequence of events in this particular child is entirely consistent with the documented evidence in the child's chart, X-rays and laboratory studies. What do you mean by that?

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A That's correct.

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again for you: Indeed the history and clinical presentation of this infant results from a prior brain stem lesion and not intrapartum acute asphyxia.

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A Did not cause it. That's what the statement says.

Q Well, Doctor, you have testified previously, haven't you, that you believe that the child's brain stem lesion resulted from a hypoxia; is that correct?

A That's right.

Q What's the difference between hypoxia in that context and asphyxia?

A Hypoxia is different from asphyxia,

Q How?

A Well, the definition of hypoxia is decreased oxygen. Asphyxia is decreased oxygen, increased PC02 and acidosis.

Q Does asphyxia cause a brain stem lesion in a premature infant?

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Q I'm not saying that,, sir. Doesn't intrauterine asphyxia cause a brain stem lesion in a premature infant?
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Q What do you mean not acutely?
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A What do you mean why?

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Q And is it your testimony that you know that those lesions or *you* think those lesions exist today?

A Yes.

Q On the basis *of* your clinical examination of the patient?

A On the basis of the history, the gestation, the problems at birth, the physical examination, the subsequent development, my examination, the CT scan and the laboratory reports that exclude other problems.

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pathological changes vould produce the exact same evidence in terms of this child's presentation if those pathologic changes occurred in the five days after birth?

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Q Do you have any studies to support that distinction?

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Q And all of them can cause --

MR. PENICK:

Wait, Go ahead and finish.

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MR, KULLMAN:

Q What don't you see in a five-day-old infant?

A You don't see this type of problen in terns of this sequence of events,

Q What are you talking about? What type of problem?

A I don't know how to answer it any differently. I mean, I can't answer it any other way.

Q You have said that it takes five days to produce the neuronal necrosis that you've described; is that correct?

A Uh-huh (positive response.)

Q Three to five Cays?

A Uh-huh (positive response.)

Q You base that, I take it, on studies that you've seen?

A Uh-huh (positive response.)

Q And I'll ask you this: Isn't it true -- and you said that that's due to lack of oxygen?

A That's what it's thought to be due to. There may be other factors involved,

Q That's what you think it's due *to?*

A That's what I think based on my knowledge and experience and review of the literature.

Q Exactly. And why wouldn't lack of oxygen on the day of birth produce those same or similar changes over the next three to five days as what *you* say occurred in the previous three to five days?

A Because this child was born with the problems. The child had the early seizures. The child had the brain stem involvement right at birth. He didn't have it five days later. Be had it right at birth. That's why.

Q Is it your testimony that the child could not have had seizures shortly after birth from a hypoxic ischemic insult shortly before birth?

A Yes.

Q It could not have happened7

A I think anything is possible. But again, you keep trying to isolate certain clinical factors and certain laboratory factors. And we don't practice medicine in isolation. And unless you're going to go with the whole clinical sequence and the whole spectrum, you cannot give your answer. I said anything is possible in isolation. But clinically and collectively speaking, that's not the case.

Q Doctor, have you looked at the first CT scan done on this child?

A Yes.

Q How do you interpret it?

A It's hard for me to interpret. It's an inadequate scan.

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Q Given your testimony here today, what would you expect that CT scan to show?

A You know, I can't tell you what I would expect unless we would see it. I would expect to see probably either to have no significant changes, depending on when the insult occurred. If it was five days before, then it might not be long enough to see changes. If it was ten days, you might see some changes. If it was two weeks, then most likely you would see perhaps a smaller atrophied brain stem and then also changes in the cortical area.

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Q Did you interpret the ultrasound?

A Yes,

Q How did you interpret it?

A As showing no hemorrhage.

Q Anything else?

A Anything else about what?

Q From that ultrasound that you saw.

A No.

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Q How would you expect that the insult that you've described in this case would affect the fetal heart rate variability in this child?

MR. PENICK:

During labor?

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Q What do you base that upon?

A Based on my knowledge, experience and review of the literature in similar situations.

Q Can you identify any similar situations you've looked at?

MR. PENICK:

I'm going to instruct him not to identify any patients by name.

A I couldn't do it anyway.

MR. KULLMAN:

Q Do you agree wfth the diagnosis on the Baptist Hospital record of hypoxic ischemic encephalopathy in this case?

A I think the child has a hypoxic encephalopathy and probably does have ischemia. But the question is when the ischemia occurred, I also agree with the diagnosis of brain stem neuronal necrosis.

Q What is the evfdence of ischemia?

A I mean, I don't have any evidence of ischemia.

Q Why do you say it probably occurred?

A After birth.

Q Why do you say that?

A Because the child had evidence of shock, had evidence of apnea, bradycardia. And mare than likely associated with that was decreased cerebral blood flow. And also had hyaline membrane disease.

Q Do you have an opinion about the actions of the obstetrician, Dr, Moorsan, in this case?

A No.

Q Have you ever expressed an opinion to Mr. Penick or any other representatives of St. Paul with respect to the conduct of Dr. Moorman in this case?

A No.
Q In the other cases that you've looked at for St. Paul, have you expressed an opinion as to the standard of care of the physicians?
A It depends on the case and whether I think that I'm competent with that set of circumstances to make a judgment,
Q Have you in the cases that you've looked at for St. Paul?
A Again, it depends on the case. If it's a case in which I consider myself an expert and competent, then I would make that statement.
Q Did you?
A I'm sure I have. I just don't remember the ones -- do you have one in mind? I'll be glad to see if I can remember.
Q I take it you don't remember?
A Well, I mean, I don't remember which one you're talking about,
Q How many have there been?
A You know, as I told you, I give anywhere from three to five depositions a year. So I can't tell you which ones are which.

Q All of those are for St. Paul?

A No.

Q The ones that you've consulted with St. Paul about --

A I just don't know. I don't have that information here.

MR. KULLMAN:

I have no further questions.

MR. PENICK:

I don't have any questions.

(THE DEPOSITION OF ELIAS CHALHUB, M.D., WAS CONCLUDED AT 3:10 P.M.)

DEPOSITION OF ELIAS CHALHUB, M.D.

CERTIFICATE

STATE OF ALABAMA)

COUNTY OF MOBILE)

I do hereby certify that the above and foregoing transcript of proceedings in the matter aforementioned was taken down by me in machine shorthand, and the questions and answers thereto were reduced to writing under my personal supervision, and that the foregoing represents a true and correct transcript of the proceedings given by said witness upon said hearing,

I further certify that I am neither of counsel nor of kin to the parties to the action, nor am I in anywise interest in the result of said cause.

DEBRA AMOS ISBELL, R.P.R.
COURT REPORTER, NOTARY PUBLIC
STATE OF ALABAMA AT LARGE

My Commission Expires: 10/1/88

DEPOSITION OF ELIAS CHALHUB, M.D.

CERTIFICATE

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DEBRA AMOS ISBELL, R.P.R.
COURT REPORTER, NOTARY PUBLIC
STATE OF ALABAMA AT LARGE

My Commission Expires: 10/1/88

CERTIFICATE

I, LLIAS CHALHUB, M.D., do hereby certify that on this ____ day of _____, 1985, I have read the foregoing transcript and to the best of my knowledge it constitutes a true and accurate transcript of my testimony taken on oral examination on November 5, 1985.

_____

ELIAS CHALHUB, M.D.

Subscribed and sworn to before me on this ____ day of _____ 1985.

_____

NOTARY PUBLIC

My Commission Expires:

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RAYMOND M KIERR
OF COUNSEL

November 15, 1985

Chalhub file

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Re: Ross Aaron Naquin

Dear Gentlemen:

I want to thank both of you for the help you've given me with respect to these two Mississippi experts, Drs. Morrison and Chalhub. I think they are both very formidable defense experts who are going to cause all of us alot of trouble.

I wish I could tell you that I felt that I had done some damage to Dr. Chalhub when I deposed him . . . but I think I was the only one who suffered harm. If either one of you figure out a way to successfully cross-examine this guy, I certainly would appreciate your advice.

I am enclosing a copy of my deposition which I hope will be of some help to someone.

In my case, I plan to speak with Dr. Joseph Volpe with respect to Dr. Chalhub's testimony in the hopes of enlisting him as an expert rebuttal witness. Dr. Volpe is nationally known as a leading authority on perinatal hypoxic encephalopathy.

Sincerely,

Lawrence S. Kullman

LSK/cab
Enclosure