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Volume 1, Pages 1 - 135

Exhibits 1 - 11

IN THE COURT OF COMMON PLEAS

CUYAHOGA COUNTY, OHIO

.....

KEVIN KISS, a Minor, etc., et al.,

Plaintiffs

vs. Case No. 402393

ANDREAS MARCOTTY, M.D., et al.,

Defendants

.....

DEPOSITION OF THOMAS REED HEDGES III, M.D.

Thursday, January 24, 2002

2:37 p.m.

New England Eye Center

750 Washington Street

Boston, Massachusetts 02111

---------- Janis T. Young, RDR/CRR ----------

Farmer Arsenault Brock LLC, Boston, MA

(617) 728-4404

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(Index page at end of transcript)

Thursday, January 24, 2002

P R O C E E D I N G S (2:37 p.m.)

(Exhibits were marked.)

MS. TOSTI: Let the record show that this is a deposition that's being taken pursuant to the Ohio Rules of Civil Procedure, and that this is a discovery deposition, for purposes of discovery only, and under cross-examination, to elicit the opinions of Dr. Thomas Hedges as an expert relative to this case.

As this deposition is being taken by agreement of defense counsel and plaintiffs' counsel, may I have a stipulation from defense counsel that any defects in notice or service or use of a Massachusetts court reporter are waived?

MS. CARULAS: You may.

THOMAS REED HEDGES III, M.D.

after having been first duly sworn under oath, was questioned and testified as follows:

EXAMINATION

BY MS. TOSTI:

Q. Doctor, would you please state your full name for us.

A. It's Thomas Reed, R-e-e-d, Hedges.

Q. And your business address?

A. 750 Washington Street, Boston, Mass. 02111.

Q. Have you had your deposition taken before?

A. Yes, I have.

Q. How many times?

A. At least 25.

Q. I'm sure that defense counsel has had a chance to talk with you. I'm just going to go over the ground rules.

This is a question-and-answer session. It's under oath. It's important that you understand the questions that I ask you. If you don't understand them, let me know, and I'll be happy to rephrase the question or to state it again. Otherwise, I'm going to assume that you understood my question and that you're able to answer it.

At any point in time, if you would like to refer to the medical records and depositions that were provided to you, please feel free to do so. This isn't a memory test by any means.

It's also important that you give all of your answers verbally, because our court reporter can't take down head nods or hand motions.

At some points during this deposition

defense counsel may choose to enter an objection. You're still required to answer my question unless, for whatever basis, you're instructed not to do so.

Do you understand those instructions?

A. Yes, I do.

Q. Now, Doctor, did you bring your complete file on this case with you today?

A. I have with me my notes and --

MS. CARULAS: I did remove, as I mentioned to you, correspondence between myself and my office and Dr. Hedges, as you had done with your experts.

Q. How many correspondence were removed from your file, Doctor, approximately?

A. Five or six.

Q. And aside from the correspondence, does this file that is sitting before you on the table contain all the materials that you've reviewed in this case?

A. Yes.

Q. Is there anything that you didn't bring with you today that you reviewed and considered in connection with this case?

A. Well, I have medical literature in my files that I have referred to during my review of this

case.

Q. Can you tell me what medical literature you have referred to specifically for this case?

A. I have various articles on papilledema and visual loss associated with papilledema to which I have referred during my review of this case.

MS. TOSTI: I'm going to request a copy of those things that are in the doctor's file that he reviewed specifically for this case.

A. I'll do the best I can. They're in my files.

Q. Well, I would like you to pull whatever they are and provide them to defense counsel, so that she can provide me a copy.

A. I would be happy to.

THE WITNESS: Can you remind me to do that?

MS. CARULAS: I will.

Q. Do you recall the title of any of those articles?

A. I can recall the authors. One article I do recall was by Roy Beck, dealing with visual loss after reducing intracranial pressure; but I don't remember the exact title.

I've reviewed another article by Dr. Corbett dealing with papilledema and visual loss; another article by James Keane, dealing with visual loss after reducing intracranial pressure.

Those were a few of them.

Q. Were you given any literature to review, or asked to review any particular medical literature in this case?

A. No. The medical literature I reviewed is literature that I either have in my files or acquired during my review of the case.

Q. And did you rely upon any of the information in those articles that you've just referenced to me in order to formulate your opinions in this case?

A. Yes. I was familiar with most of the literature on this, but I did refresh my memory by reviewing those articles.

Q. Were you provided any deposition summaries in this case?

A. Yes, I was -- oh; deposition summaries?

Q. Yes.

A. Not to my knowledge. I was provided with various depositions, which you have identified here, but not any summaries.

Q. And the depositions that you've reviewed, I believe, are Dr. Andreas Marcotty, Dr. Kosmorsky, Dr. Bruce Cohen, Dr. Peter Savino, and Dr. Samuel Neff; correct?

A. That's correct.

Q. Have you seen the deposition of Dr. Mark Luciano, the neurosurgeon in this case?

A. Yes. That's in this other packet, yes.

Q. I'm sorry; I didn't --

A. It's included in one of these larger booklets,

MS. CARULAS: Here it is.

Q. I must have missed that. May I see that? When I skimmed through your medical records, I didn't see that that was also included in there.

Now, Doctor, you've told me that you've had your deposition taken a number of times. I'd like you to tell me a little bit about your experience as an expert in medical-legal matters. When is the first time you offered your services as an expert as a medical-legal consultant?

A. I can't remember. I would guess perhaps 1985.

Q. And approximately how many medical-legal

matters do you consult on per year?

A. Currently? I would guess about five.

Q. Is that about how many you have currently in your office that you're reviewing or acting as an expert on?

A. I believe I'm currently reviewing about five, and that may have accumulated over the years, so that I'm guessing that I am asked to review a new case five times a year; and that carries over to five active cases per year.

Q. What proportion of the medical-legal matters on which you've consulted has been for plaintiff, and what proportion has been for defendant?

A. Most of my cases are defense cases; but an example would be that among the five or six cases I'm doing now, two happen to be plaintiff cases. But that is unusual.

I would guess that the ratio of defense to plaintiff cases is 10 to 1, defense versus plaintiff.

Q. Of the cases in which you were consulted by a plaintiff, how many times have you found substandard care?

A. Well, each time, I wouldn't take the case if

I didn't feel that -- well, let me put it this way: In those cases in which I'm continuing to act as witness, I have felt there was substandard care; otherwise, I would not continue to be a witness.

There are occasional cases where I've been asked to be a witness for both defense and plaintiff cases, where I did not agree, and did not feel comfortable continuing as a witness in those situations.

Q. Well, let me back up on my questions, then.

How many cases a year do you review and consult on in order to determine if you will serve as an expert in litigation?

A. I may be asked to review about ten, and I might continue with half.

Q. So you review about ten, and then you agree to act as an expert on maybe approximately five a year?

A. Yes; I'm called, and sometimes within a few minutes I can tell that I'm not capable of handling the case for a variety of reasons, whether it's conflict of interest, whether I know someone involved, or I don't feel it's within my area of expertise.

Q. Now, Doctor, you've mentioned that you've had your deposition taken about 25 times. How many times as a medical expert in a medical-legal proceeding?

A. Oh, the majority of them are. Only on occasion have I been deposed, for example, for reasons of workmen's compensation or that sort of thing, as opposed to medical-legal cases, malpractice cases.

Q. Have you testified at trial?

A. Yes.

Q. How many times?

A. Eight times, roughly.

Q. Have you ever testified at trial for plaintiff?

A. Yes, I have.

Q. How many times?

A. In medical-legal cases?

Q. Yes.

A. Once.

Q. Doctor, what is your charge for consultation on medical-legal matters?

A. $350 an hour.

Q. Is it the same for deposition?

A. I have to admit, I'm not very good about this, but I generally charge $1,000 for the deposition, which would include preparation and for most of it. If the deposition goes for an extra-long period of time, over several hours, and it's a bit tedious, I might charge additional; but I don't have a specific rate.

Q. What is your charge for trial testimony?

A. Basically $1,000 for being in the courtroom; and if the testimony goes beyond an hour or so, I may charge extra.

Q. Approximately what percent of your income was derived from offering your services as an expert in medical-legal matters last year?

MS. CARULAS: Note my objection. Go ahead.

A. I really don't know. It's relatively small.

MS. CARULAS: You don't have to give a specific figure.

A. I really don't. It's a single-digit percent.

Q. Wow many hours have you spent on this case?

A. About seven.

Q. Doctor, have you ever provided your name to

a professional service or a medical-legal consulting firm indicating that you were available to do medical-legal reviews for a fee?

A. I believe my name is on a few lists. In other words, I've been contacted by one or two organizations, and they have asked me if I could be available, and I've consented; and I cannot tell you their names.

Q. Do most of the cases that you review come through those organizations?

A. No, not that I'm aware of.

Q. Do they tell you, when people contact you, as to how they contacted you?

A. Sometimes; but I haven't kept track of that, and I don't keep a record. I mean, I have no idea. I don't recall at all how my name came up in this case.

Q. Well, when you do work through the organizations, do you receive fees through that particular service?

A. Yes. I believe, I do recall, I think Pro Mutual is a company -- I think they're national -- that does malpractice cases; and I believe that when they have contacted me, they have identified that

they contacted me through the organization, and I believe they have paid me in that indirect way.

Q. And you believe there's another organization, but you don't recall the name of that organization?

A. There may be others. I don't keep track of that. I don't keep accurate records regarding those sorts of things.

Q. Have you ever been named as a defendant in a medical-negligence case?

MS. CARULAS: Objection. Go ahead.

A. I don't recall if the term "negligence" was used, but I have been a defendant in two malpractice cases.

Q. And when were those cases filed, Doctor?

MS. CARULAS: A continuing objection. Go ahead.

A. One was about 1983, in which I was named as one of the defendants; and that case was terminated without my being involved, after the first deposition.

And the second case was two years ago, where I was one of four defendants in a malpractice case, which was found in my favor by the jury.

Q. Were both of those cases filed here in the Boston area?

A. Yes.

Q. Who was the plaintiff in those two cases?

A. I'm afraid I can't recall; too painful to recall. I'm not sure I can recall the exact name of the first case.

Q. How about the second case?

A. The second one, sorry; you've got me caught off guard here, and I can't tell you. I've tried to put it out of my mind.

Q. Well, what was the allegation of negligence in the most recent case?

A. Lack of diagnosis.

Q. What type of diagnosis?

A. Cerebral aneurysm.

Q. What happened to the individual in which there was an allegation of a lack of diagnosis?

A. Can I just consult with my lawyer, please? You've got me thinking about my case.

(Discussion off the record)

MS. TOSTI: Back on the record.

Q. Doctor, I would like you to tell me what the allegation of negligence was in the most recent

case.

I believe you told me it was a lack of diagnosis in regard to a cerebral aneurysm, and then I asked what happened to the individual that the allegation was that there was a lack of diagnosis.

MS. CARULAS: And I just have a continuing objection to this line. Go ahead.

A. This was a woman with minimal symptoms and findings that, before I had a chance to follow up on her care, because of problems with the family, ended up dying because her aneurysm was not diagnosed.

Q. And that case, did it go to trial?

A. Yes, it did.

Q. And the result was in your favor?

A. Correct.

Q. Now, you mentioned that there was another case that was earlier, in the early 1980s. What was the allegation of negligence in that case?

A. Failure to diagnose retinopathy at prematurity.

Q. And you mentioned that you had your deposition taken in that case. Were you dismissed out of the case after the deposition was taken?

A. That's correct. The fault was found with

the hospital, not mine. It's hospital policy. This involved a resident who lied to me about following up on the referral that I requested to be made to a retina specialist; and the referral was not made, even though I was assured that it had been.

Q. Has your medical license ever been suspended or revoked or called into question?

A. No.

Q. Have you ever been the subject of any disciplinary action by a state medical board?

A. No.

Q. Have you ever been asked to review a medical-legal matter involving issues of vision loss and increased intracranial pressure, and vision loss and papi11edema?

A. Yes.

Q. How many times?

A. There's one case I can recall, but I'm sure there were others.

Q. Was that case filed?

A. Oh, yes.

Q. Did you have your deposition taken in that case?

A. Yes.

Q. Did it go to trial?

A. I don't think so.

Q. Were you acting as an expert for plaintiff or for defense in that case?

A. Defense.

Q. Where was that case filed, Doctor?

A. I believe it was Connecticut.

Q. And do you recall the name of the plaintiff in that case?

A. No.

Q. What was the allegation of negligence that you were reviewing in that case?

A. Now that I recall the case, I'm sorry, it was complicated, because it was not clear whether it was papilledema or papillitis from sarcoidosis; but in any event, it was a matter of an ophthalmologist who was trying to manage the patient as best he could.

As I recall, the patient went to another ophthalmologist for some matter of workmen's compensation unrelated to the medical problem. The subsequent ophthalmologist suddenly declared the patient's papilledema an emergency, himself misdiagnosing the case; and I don't recall the

ultimate final diagnosis, because the specialist the patient was referred to immediately couldn't sort it out, but somehow they sued the first doctor, and they settled for some reason.

Q. The allegation was that there was a failure to diagnose the problem?

A. That's correct.

Q. And was there an allegation that it was papilledema that was not timely diagnosed?

A. Yes, I think so. I'm not sure, because I think there was some confusion on the part of the doctor who told the patient that she had this problem with regard to the diagnosis, and I'm fuzzy on the details. As I recall, she was ultimately referred to a specialist, who still had trouble making the diagnosis and instituting appropriate care.

So ultimately there was no real delay in the diagnosis; there was an allegation of delay in the diagnosis. Again, I don't recall the details, but it was a very confusing business.

But I believe it was that they were alleging a delay in management of papilledema that had already been identified and was being managed

appropriately, and continued to be managed the same way.

Q. Where in Connecticut was this case?

A. I don't recall the town.

Q. Do you recall the attorney that you worked with?

A. No.

Q. Other than on this case, have you ever worked with Ms. Carulas before?

A. No, I haven't.

Q. Have you ever worked with her law firm, Roetzel & Andress, before?

A. Not that I know of.

THE WITNESS: Have I?

MS. CARULAS: I don't believe so.

Q. Do you know how it is that you came to be contacted regarding this case?

A. I'm not sure. I believe it might have been an e-mail or a phone call.

Q. Do you know if anybody suggested that you in particular should review this case?

A. No, I don't. I don't know how I was chosen. I may have been told, but it didn't register.

Q. Do you know when this case is set for trial?

A. We think it's February 11.

Q. And have you been asked to come to Cleveland to testify in this trial?

A. Yes.

Q. Now, prior to accepting this case for review, did you have any contact with any of the medical providers that were identified in Kevin Kiss's medical records?

A. I do know two individuals who have been involved in this case. One is Dr. Kosmorsky, who's a neuro-ophthalmic colleague of mine, whom I have gotten to know through various meetings we attend; and I also know Dr. Allan Cohen, who used to work here at the Boston Floating Hospital.

Q. When is the last time that you had contact with Dr. Kosmorsky?

A. Five years ago.

Q. So I take it you've never discussed any of the facts of this case with him; is that correct?

A, I have not.

Q. And have you spoken with any of the people identified in the records since the time that you were consulted on this case?

A. I have not.

Q. Have you had any contact with any of the experts that have been identified in this case; Dr. Savino, Dr. Neff, Dr. Boop?

A. I might have attended a meeting that Dr. Savino also attended during the time this case has been under review by myself. I did not know he was reviewing the case at the time, and we really did not converse very much at all during that meeting, which was in Toronto last year about this time.

Q. How about in regard to Dr. Neff or Dr. Boop?

A. No, I have not.

Oh, I apologize; I do know Doctor -- I'm sorry; earlier you asked me if I knew any of the experts?

Q. Yes.

A. I apologize. I do know Dr. Neff; he was a resident here several years ago. I do know Dr. Savino, and I do not know Dr. Boop.

Q. In regard to Dr. Neff, you mentioned that he was a resident. I believe it was a residency in neurology?

A. Neurosurgery.

Q. Neurosurgery; I'm sorry. Did you work with

Dr. Neff when he was doing his residency?

A. Oh, yes.

Q. Were you involved in his supervision?

A. No. I interact daily with the neurosurgery staff here, including the residents; and when he was a resident here, we did interact more as colleagues, although as a resident, I would be more in the role of teacher, and he would be more in the role of student.

But it was not very formal; it was more in the realm of patient management.

Q. Maybe you said this and I missed it. Were you an attending at that point in time, or a staff person, at the time that Dr. Neff was in his residency?

A. Yes.

Q. Doctor, would you agree that Dr. Peter Savino is a respected expert in the field of neuro-ophthalmology?

A. Yes, he is.

Q. Now, Doctor, I have a copy of your curriculum vitae that I've marked as Plaintiffs' Exhibit 1, and I would just like you to identify that document for the record.

A. This is my curriculum vitae, updated as of 1-19-2000.

Q. You can have a chance to look it over. Is it current and up to date, or are there any additions or corrections that you'd like to make to it?

A. It's a year old -- two years old -- so that there have been some additional meetings I've attended, talks that I have given, and a few more articles that I have published.

Q. The articles that do not appear on your CV, do any of them have particular implications for this case?

A. Not directly, but I have published one paper on papilledema that's not on the list of references.

Q. Can you tell me what the title of that article is?

A. Optical Coherence Tomography Demonstrates Subretinal Fluid from Papilledema.

Q. And aside from it being on the subject of papilledema, is there anything in that particular publication that you feel has implications for the facts in this case as you understand them?

A. I don't think it has any significant impact.

Q. Now, Doctor, you are board-certified in ophthalmology; is that correct?

A. Correct.

Q. Did you pass that board certification on your first attempt?

A. Yes.

Q. Do you hold any other professional certifications?

A. Not in any subspecialty.

Q. Who is your current employer?

A. New England Medical Center.

Q. And do you provide professional services for any other entity besides the New England Medical Center?

A. I am a consultant at the Boston Veterans Hospital.

Q. Is that a paid position?

A. Yes. And I am also on the staff at the St. Elizabeth's Medical Center, through a satellite office of the New England Eye Center.

Q. And is that a separately paid position?

A. No.

Q. How long have you been an employee of the New England Medical Center?

A. Twenty-one years.

Q. Doctor, your offices are here at 750 Washington Street; correct?

A. Yes. 750 Washington Street is our mailing address for the medical center. My office is really at 260 Tremont Street.

Q. I think I found that out coming to the deposition.

A. Yes; I apologize.

Q. Do you maintain medical offices outside of your office in this building?

A. No. I utilize our facility at the St. Elizabeth's Hospital, and I work in the clinic at the VA.

Q. And do you have any private practice aside from your practice through the entities that you just mentioned to me?

A. No, I don't.

Q. Now, your curriculum vitae indicates that you hold an academic position with Tufts University, I believe as a professor of ophthalmology and neurology; is that correct?

A. That's correct.

Q. Can you tell me what your duties and

responsibilities are with that position?

A. My academic duties?

Q. Yes.

A. I teach medical students through lectures and rotations through my clinical practice. I supervise residents within my clinical practice, and I provide lectures, attend grand rounds for those residents.

As part of my academic appointment in neurology, I also teach neurology residents who rotate through my office, and attend conferences within the department *of* neurology.

I also teach fellows who have finished their residency in either neurology or ophthalmology and supervise research that they conduct as part of their fellowship.

Q. So the two groups of residents that you work with are neurology residents as well as ophthalmology residents?

A. That's correct.

Q. Doctor, you've got a number of publications on your curriculum vitae. Are any of these publications ones that you believe have particular relevance to the issues in this case as you

understand them?

A. Many of these references deal with papilledema in one way or the other, and I could point those out to you if you'd like.

Q. Well, I'm asking if there are specific ones that you think have particular relevance to the issues in this case.

A. Not particularly.

I might point out one reference. Reference 52.

Q. Retinal Nerve Fiber Layer Changes and Visual Field Loss in Idiopathic Intracranial Hypertension?

A. That's correct. That's probably the most relevant.

Q. Doctor, do you currently hold any administrative appointments?

A. I assist in various administrative duties as part of my membership in the eye department, but I do not have any official assignments that would be considered administrative.

Q. I'd like you to describe for me how you divide your professional time between your academics, your clinical, if you are involved in research or administrative duties; if you would just

kind of give me an overview.

A. It's difficult to separate, because I primarily practice clinical neuro-ophthalmology five days a week; so my teaching goes side by side with that.

To give you a rough estimate, I would say that 80 percent of my time is devoted to the clinical practice of neuro-ophthalmology, 10 percent is teaching, and 10 percent is research.

Q. Is your current neuro-ophthalmology practice limited to any particular age groups for patients?

A. No.

Q. So you see children, adolescents, as well as adults?

A. I see infants, from infancy to eighties, and beyond.

Q. What percent of your cases, approximately, would you say are pediatric cases?

A. Fifteen percent.

Q. Do you see any patients for general ophthalmology concerns that don't involve neurology-related concerns?

A. Well, many of my patients that are referred with a neurologic concern turn out to have a

general-ophthalmology type of problem, something as mundane as a cataract.

But as a rule, my general practice is general1y 1imited to staff members; whereas the bulk of my practice is devoted to consultation by referral from other ophthalmologists, neurologists, neurosurgeons, internists and optometrists.

Q. So the majority of referrals you get is because there's a neuro-ophthalmology-related concern; and whether it turns out to be that or not is another matter?

A. That's correct.

Q. Have you ever been involved in any research dealing with the subject matter of papilledema?

A. Yes, I have.

Q. How about increased intracranial pressure?

A. Yes.

Q. Related to the papilledema?

A. They almost go hand-in-hand, yes.

Q. Any specifically with optic atrophy?

A. Again, they're related, usually.

Or are you referring to optic atrophy exclusive of papi11edema?

Q. No; in conjunction with papilledema.

A. I would say most of the activities have dealt with --

Q. All three of those entities?

A. Optic atrophy for the most part has been part of the issues we've been dealing with in the research.

Q. Are you involved with any research currently which deals with papi11edema, increased intracranial pressure, optic atrophy?

A. Yes. We are employing optical coherence tomography in the assessment and management of patients with papilledema.

Q. Can you give me a description or a definition as to what optical coherence tomography is?

A. Yes. This is a technique by which we shine a light of a specific frequency into the eye, which is then reflected back into an instrument which can create, using a computer, a cross-sectional image of the retina, a portion of the optic nerve, and most importantly the nerve fiber layer, allowing us to make relatively accurate measurements to determine whether there is swelling of those elements or attrition due to disease.

Q. And when you say attrition, would attrition relate to atrophy?

A. Correct. When there's optic atrophy, the retinal nerve fiber layer becomes thinner, as measured by this instrument.

Q. Is there a particular question or hypothesis that you are researching in that?

A. Yes. Recently we've been interested in how fluid may accumulate underneath the retina in association with swelling of the optic nerve in patients with papilledema and other causes of optic-disc swelling.

We are also using optical coherence tomography to measure changes in the nerve in order to determine if there is increasing swelling or worsening of papilledema, or whether there is improvement in the degree of papilledema, or if there is the superimposed development of optic atrophy in the presence of papilledema.

Q. Now, Doctor, you previously mentioned the one addition to your curriculum vitae. Does that particular article that you mentioned have to do with this study, the preliminary findings?

A. Yes. That relates to the development of

fluid under the retina.

Q. Who's the chief investigator on this study?

A. I am.

Q. And where are the study sites? Here?

A. This is not a formal study that is being funded as such. This is continuing utilization of an approved instrument for this purpose; so we are not specifically funded, nor are there other sites. It's a study that I'm doing in this institution.

Q. And have you come up with any preliminary findings at this point in regard to the optical coherence tomography?

A. Yes. We found it interesting and helpful in determining if there are visual losses that may occur in patients with papilledema due to effects on the retina, as opposed to effects on the nerves.

We've also found it a useful means of monitoring papilledema in those patients, especially those who have papilledema over a long period of time.

Q. So this might have application where the patient would be followed in a serial fashion with this particular type of a device?

A. That's correct.

Q. And it would tell you if there were problems that were developing over a period of time?

A. That's our intention.

Q. Now, other than this particular study, have you been involved in other studies that deal with papilledema, increased intracranial pressure, optic atrophy?

A. Yes. One of our projects has been an attempt to use this instrument to differentiate very mild papilledema from the apparent swelling that occurs in patients who have a nerve that's crowded within the opening through which the nerve passes due to the structure of the eye.

Q. Now, was that a study that's been already concluded, that you've done?

A. Yes.

Q. And what were your findings in that study?

A. We found that this did not distinguish a crowded nerve from one that was mildly swollen from increased intracranial pressure.

We found that, with both the so-called pseudo-papilledema group and the group with true papilledema, in both cases the nerve fiber layer was thicker than the normal population.

Q. Are your findings from that previous study reported in any articles in your curriculum vitae?

A. No. We've had some difficulty getting the paper accepted.

Q. And why is that? Do you know?

A. I believe in one case it had to do with our choice of statistical methods. The reviewer recommended a different statistical approach, which would involve a tremendous amount of work. So we're considering submitting the paper to another journal.

Q. Now, the two studies that we just talked about, do you think that the findings of these studies have any implications for this particular case?

A. Not as such. This is experimental work. It involves sophisticated equipment.

Q. Other than the two studies that we just talked about, any other research that you've been involved with with papilledema?

A. Yes. Since my high-school years, working in my father's laboratory, I was involved with studying experimental papilledema. Indeed, the first reference on my CV is a paper which was published when I was a senior in high school, dealing with the

nature of papilledema study with fluorescein.

Q. So I take it that your father is T. R. Hedges?

A. Junior.

Q. Is he an ophthalmologist or neurologist?

A. He's a neuro-ophthalmologist.

Q. Doctor, you don't hold yourself out as an expert in neurosurgery, do you?

A. No, I do not.

Q. Tell me where you have hospital privileges. I know that you've told me that you were on staff at, I believe it was St. Elizabeth's?

A. St. Elizabeth's.

Q. And here at Tufts. Do you have hospital privileges also at, I believe you said Boston Veterans Hospital?

A. That's correct.

Q. Any place else?

A. I may still have privileges at Newton-Wellesley Hospital, but I haven't been there in years.

Q. Are they admitting privileges, for all three of those hospitals?

A. For the three, New England Medical Center,

the Veterans Hospital, and St. Elizabeth's Hospital, I do have admitting privileges.

Q. Now, Doctor, I take it that in your academic work you have given presentations on the subject matter of papilledema as it relates to increased intracranial pressure? Have you done that?

A. I'm sorry?

Q. Have you lectured in an academic setting on --

A. Yes, I have.

Q. Have you given formal classroom lectures?

A. Yes.

Q. Do you have any presentations on that subject matter that have been reduced to written form; video, audiotape?

A. I have handouts that I've used over the years.

Q. Specifically on the subject matter of papi11edema?

A. Yes.

Q. Is that something that you would be able to produce to defense counsel?

A. Yes.

Q. I'm going to make a request that you do

that.

MS. TOSTI: And then, to defense counsel, I'm going to make a request that you provide those to me.

THE WITNESS: If you'll remind me.

Q. What book do you consider to be the leading text in neuro-ophthalmology?

A. Walsh and Hoyt's Textbook of Neuro-Ophthalmology.

Q. Is that the one that you recommend to your residents?

A. No. It's much too voluminous.

You want to know what I would recommend to the residents?

Q. Yes.

A. I certainly would love it if they would read that book, but I don't expect them to read all (gesturing) --

Q. It's multiple volumes?

A. -- five or six volumes.

I have recommended a shortened version of that same text by Dr. Miller and Dr. Newman, called Neuro-Ophthalmology: The Essentials.

My first recommendation is a book by

Glaser, which also has been distinguished in Duane's Volumes of Ophthalmology; and I insist that all the residents memorize the American Academy of Ophthalmology Basic Science Course volume on neuro-ophthalmology.

Q. In your practice, do you refer to, I believe you said it was the Walsh and Hoyt text?

A. Walsh and Hoyt textbook; yes.

Q. And do you find that it contains reliable information for your practice?

A. For the most part.

Q. Now, Doctor, you've reviewed a number of materials in generating your report, and I've had an opportunity to look through your file. I just want to go through some of these, and if you'll just tell me if you've reviewed them, that will be fine.

There were medical records from the primary-care physicians called Kids in the Sun. Did you look through those?

A. Yes, I did.

Q. And Signature Eye Association medical records, I believe that when Kevin saw Dr. Marcotty, you've seen those records?

A. Yes, I have.

Q. Cleveland Clinic outpatient records?

A. Yes.

Q. And the two Cleveland Clinic hospital admissions, one for the fenestration procedure and one for the shunting procedure?

A. Yes, I have.

Q. There are also some counseling records from Benedetto & Associates?

THE WITNESS: Are they in here?

MS. CARULAS: Right there.

A. Yes, I have.

Q. And records from Dr. Amy Jeffrey, a pediatric ophthalmologist?

A. Yes.

Q. And Dr. Allan Cohen, a pediatric neurosurgeon?

A. Yes.

Q. And I believe also an evaluation by Dr. Howard Tucker, a neurologist?

A. I believe I have. I can't recall.

Q. Now, we've already gone through the depositions that you have. Have you seen the depositions of Kevin's parents, Ann Kiss and Raymond Kiss? I did not see them in your file.

A. I don't recall actually reviewing them. Could I just check?

THE WITNESS: Have I seen them?

MS. CARULAS: I honestly don't remember.

A. If they're not here, then I haven't reviewed them, to my knowledge; to my recollection.

Q. Have you reviewed any of the imaging films?

A. Yes, I have.

Q. Doctor, obviously you didn't bring those with you today; so can you tell me what films that you have reviewed?

A. Yes.

Actually, you do have some drawings I made of them. I would tell you to refer to that.

Q. All right; let me just have one minute here.

You're referring to what's been marked as Plaintiffs' Exhibit 6. Tell me what films you have reviewed in this case.

A. They're not necessarily in chronological order; but there's a CAT scan from 1-22-98, from 2-10-98, 4-7-98, 6-98 -- I don't know the date -- 11-21-97, and that's...

Q. Now, the document that we have here that's marked as Plaintiffs' Exhibit 6 looks like some hand

drawings. Could you just tell us what that document is?

A. Yes. These are drawings of the scans, the dates of which I just provided, which gave me a sense of what the neurosurgical issues were.

Q. And could you go through the various drawings that you have on this document, and tell me what you were depicting here that you felt was of significance?

A. Well, I document the relative size of the cyst, rather crudely; the presence of some fluid, which I believe was probably subdural fluid; and I was also interested in the relationship of the optic nerves to the cyst.

Q. In looking at the various imaging studies, did you arrive at any conclusions in regard to this case?

A. They confirmed basically the reports of the radiologist as indicated in the records, that there was a cyst that I believe was reduced *in* size but still present at the fenestration, but also associated with some papilledema in the subdural-space fluid; that there had been little change in the cyst size at least between January 22, February

10, and April 7 of 1998; and that the optic nerves, or at least the chiasm, was the upper part of the cyst or formed part of the upper roof, if you will, of the cyst.

Q. Did you review any of the expert reports of Dr. Samuel Neff or Dr. Peter Savino?

A. I reviewed their depositions.

Q. But have you seen their reports?

A. I may have.

MS. CARULAS: I know I sent you those at some point. It would have been prior to the depositions.

THE WITNESS: Yes. Were they in your correspondence?

MS. CARULAS: Mm-hmm.

A. Then I did.

Q. And those have been removed from your file with the correspondence of defense counsel?

MS. CARULAS: I don't know. They may have come out when I grabbed all the correspondence. I don't believe so.

But I know just from looking at your report, you say, as well as the expert opinion statements of Peter Savino and Samuel Neff; so I

know I sent them to him at some point.

THE WITNESS: I might have stuck them in there.

(Beeper; recess taken)

MS. TOSTI: We're back on the record.

Q. Doctor, at any point in time when you were reviewing this case, did you request that defense counsel send you any additional materials other than what you originally got on the case?

A. No, I did not.

Q. Have you read all the depos that you've received?

A. Yes.

Q. Other than the articles that we've just previously talked about, are there any publications that you believe have particular significance to your opinions in this case?

A. Well, there are many articles on papilledema, and visual loss associated with papilledema, that I have in my files to which I refer and to which I may have referred; but the pertinent articles from my perspective are those I mentioned to you earlier.

Q. And my question is, if there's a particular

publication that you think is very significant to your opinions, as you sit here today, if there is one, I want you to tell me. If there isn't one specific one, that's fine; just tell me that.

A. No.

Can I just do one more thing? I'm sorry.

(Discussion off the record)

MS. TOSTI: Back on the record.

Q. Did you consult with any physicians at any time regarding this case?

A. Yes.

Q. Who did you consult with?

A. I consulted one of our neurosurgeons, particularly regarding the x-ray films.

Q. Who was the neurosurgeon that you consulted?

A. Carl Heilman.

Q. And did you have him look at the actual film?

A. Briefly.

Q. Which film did you have him look at?

A. I believe I showed him a sampling of some of the films to which we referred earlier.

Q. You don't recall which ones specifically you

gave him to look at?

A. No. I was attempting not to involve him very much in the nature of the case, but I wanted some general information about this type of cyst.

Q. And after he looked at the films, did he give you an assessment of those films?

MS. CARULAS: Just note my objection to any hearsay, but go ahead.

A. Yes.

Q. What did he tell you about the films?

A. He confirmed that it was an arachnoid cyst, and mentioned to me the various ways to manage such a cyst.

Q. What did he tell you?

MS. CARULAS: Continuing objection to the line; but go ahead.

A. He told me these cysts can be fenestrated, and they may be shunted.

Q. Did he have any opinions with regard to what should have been done in this particular case?

A. No. I did not want to involve him in that type of discussion.

Q. Was there anything beyond what you've just told me in regard to your discussions with

Dr. Heilman?

A. Not specifically. I may have given him a general sense of why I was asking to show him the films; that there was a child who had had papilledema, and had loss of vision after the shunting procedure.

Q. Did he express any opinions to you as to what happened to Kevin Kiss in this case?

A. No. I did not want him to become involved at that level.

Q. And aside from what you've just told me, there was nothing else that you recall specifically as to his comments about the films that he reviewed?

A. No, not regarding this case.

Q. And no other conversations in regard to this case specifically, even aside from the films?

A. Not this case specifically.

I will mention that one reason I chose him was because we have had conversations about similar types of problems with regard to visual loss after decompression of various masses in children; and we have discussed that issue in general, and with regard to specific cases here, but not with regard to this case.

Q. And in regard to specific cases here, what has he told you about the decompression of masses in general?

A. Well, we've had one case within the last year, and I believe we had another case within the last few years, and I've had others before. This is a problem that we are concerned about, and of course our discussions surround how we might predict this and prevent it.

Q. Doctor, the case that you had in the last year, was this a patient that you were consulting on?

A. Yes.

Q. And was this a child or an adult?

A. A child.

Q. Can you tell me what occurred in that case?

MS. CARULAS: Just note my objection. Go ahead.

A. I had reviewed it for a while and discussed it; and I can't remember exactly the nature of the lesion, but I believe it was a tumor that was causing obstruction of the normal spinal-fluid flow around the brain with associated papilledema.

After uneventful removal of the tumor in

that case, I believe, the child progressively lost vision and developed optic atrophy.

Q. When did the vision loss start to occur?

A. We don't know exactly, but relatively soon after the surgery.

Q. Was the child tested before the surgery?

A. I did not see the child before surgery, and I don't think he was tested by an ophthalmologist.

Q. You don't know how long after the surgery he started to develop the vision loss?

A. That's part of the problem. We don't know exactly when he might have started to lose vision. I think the parents became aware of it within a week or two after the surgery.

Q. And after it was first noted, was there a progression of the vision loss?

A. We believe it was relatively rapid, if not acute; and once the visual loss was recognized and the chi1d was having apparent difficulty seeing, there was already a significant loss of vision.

Q. And did it become any worse after it was initially found by a physician to be present?

A. Again, I haven't reviewed the case recently. But when I saw the child, which I believe was

relatively soon after surgery, the visual loss was already profound, and I have not seen any progression. Indeed, I think I've seen some improvement, or at least there's been improvement in his function.

Q. And this child had chronic papilledema prior to the decompression that was done?

A. I don't recall whether it was chronic papilledema. My understanding from Dr. Heilman is that it was relatively subacute.

Perhaps, if we were to guess, present maybe for months or weeks; a few months to weeks. But we don't know.

Q. Now, that was a case that you had in the last year. You said you've had other cases where there has been vision loss after a decompression-type surgery?

A. I remember one case fairly soon after I started here, with another very well-known pediatric neurosurgeon, and this would have been in the '80s. I remember some conversations we had as to how this might be prevented.

One of the problems with this entity is that it's so rare that we talk about this, and then

it just doesn't happen for such a long period of time, that unfortunately we don't really deal with it.

I'm not sure how we would deal with it; but after that case, although the conversation might come up periodically, we really didn't initiate any specific, or could not come up with any specific procedures with which to try to deal with this problem.

Q. How many cases have you seen reported in the literature where there has been visual loss after decompression?

A. How many cases have I personally been involved with that are similar to this?

Q. No; how many cases have you seen reported in the literature where there has been visual loss after decompression such as you've described?

A. It is underreported, and there are probably 15 cases in the literature since the '60s.

Q. And the case that you had this past year, did you report that in the literature?

A. No. We're contemplating this. This is something I might take up after this case is dealt with. Indeed, we may deal with it sooner than that.

But I haven't discussed this case with anybody, so I haven't discussed this problem essentially with anyone else except for one other individual.

But it is something that this case in particular has stimulated my interest in, so that I may want to address this problem in the future.

Q. What is the incidence of visual loss after a decompression-type surgery similar to what you've just described? What's the incidence of that?

A. We don't know. I think it's extremely low.

In my case, in twenty years working in an institution where there are many pediatric and adult procedures done on patients who have papilledema, I'm currently aware of three that I can remember,

There may have been others that have occurred in this institution; and certainly there are others, I'm sure, that have been referred to me from other institutions, which I might or hopefully could retrieve from my records if I were to look for those cases.

Q. Do you know, of any of the reported cases where there was visual loss after decompression, if

any of those cases were in a patient who did not have preexisting chronic papi1ledema?

MS. CARULAS: I'm just going to object. You're talking about in the literature, or in his experience?

THE WITNESS: I think she meant the literature.

MS. CARULAS: Okay.

A. Right?

Q. The cases that you're aware of that have been reported in the literature.

MS. CARULAS: Okay.

A. The reason they're reported in the literature was because they were associated with papi11edema.

I'm sure there were cases of visual loss after surgery; but the issue of papilledema essentially decompensating after surgery is what I'm recalling from the literature. In other words, we're referring to literature about those cases that did have papilledema who then went on to lose vision after surgery.

So it's difficult for me to answer your question. Were there patients who had increased

pressure who then lost vision after surgery? Yes, but that's not the literature to which I'm referring.

Q. Well, I'm asking if you're aware of any reported cases where there was vision loss after a decompression surgery, as you described, where the individual did not have a chronic papilledema prior to the decompression surgery. And if you don't know of any such reported cases, that's fine.

A. No, I don't know.

Q. Would you agree that vision loss from chronic papilledema is far more common than the scenario that you've just described with visual loss after a decompression-type surgery?

A. Yes.

Q. Doctor, you have several pages of notes that I believe you generated in this case; correct?

A. Yes.

Q. And I believe we've marked those as Plaintiffs' Exhibit 7 and Plaintiffs' Exhibit 10. I would ask, since the writing is a little difficult for me to read, if you could take Plaintiffs' Exhibit 7 and just read through what you have written here.

MS. CARULAS: Just for the record, I'm just going to put an objection to this, and him reading it, for future reference. Go ahead.

A. At the top it says, Seven-year-old, and -- you want me to read everything on this?

Q. Yes.

A. Chris, then I have a 1-21-97. It says, Luciano, consult for Doctor, and I have a question mark, Levy, L-e-v-y. Below that I think it says, fever, swelling right eye, arrow, ptosis, CAT cyst post fossa.

Then the next is the date, 12-17-97, fenestration of arachnoid cyst, parentheses, question had URI, end parentheses.

Below that, 1-22-98, Luciano, headache times two weeks, double vision, EOMs intact. CT, MRI two months.

I'm reading the abbreviations out so you understand it.

1-26-98, phoned, severe headache.

2-10-98, Luciano, headaches persist, rule out papi1ledema, complained of double vision, CT without change, Diamox.

Below that, I put MRI, claustrophobic.

Follow-up by phone.

Do you want me to read it as on the page; or can I put things in chronological order, which is indicated by the arrows?

Q. Whatever is easiest for you, Doctor.

A. Below that is 2-11-98, and then nearby it says, Ref; referred to. And I put question, exam date, 2-9-98. And below that, letter, Marcotty, ophthalmologist.

20125, 20/30 papilledema, follow-up six weeks. Quote, "I have discussed this with Dr. L., and he will be seeing him on 2-10."

Then an arrow below that goes, No show.

The next entry would be 4-7-98, Luciano, continues severe headache and double vision.

And then an arrow down to 4-14-98, Confrontation visual fields, normal by Bruce Cohen, papi11edema.

Then 4-15-98, Cyst to peritoneal shunt. Below that, quote, "Pupils normal, EOM intact, visual fields grossly full."

Below that, Post-op pupils normal repeatedly.

Then 7-14-98, Humphrey visual fields,

bilateral central scotomas.

And 7-22-98, Kosmorsky, 22/20, which means twenty-twenty; it's vision. Twenty-twenty counting fingers, and I'm referring to the left eye.

After pupillary defect, 4-plus. Optic atrophy both eyes. Goldman visual fields. Question mark, normal, right eye: central scotoma, left eye.

Then also notes below, Major problems in school related to increased intracranial pressure, headache, decreased appetite.

Below that, I put Pediatrician, no eye exams.

And then it says here, Luciano is a neurosurgeon.

Q. Now, what I've referred to, Exhibit 10, is this a log of the time that you've put in on this case?

A. Yes.

Q. I think we can make that out ourselves.

Now, Doctor, do you do surgical procedures in your practice as a neuro-ophthalmologist?

A. Yes.

Q. And how often are you in surgery during the

week? How many surgical procedures do you do?

A. Hardly ever anymore.

Q. Can you give me an estimate per month or per year?

A. I can tell you what I do. I used to do strabismus surgery for patients who had crossed eyes from neurologic disease, but I no longer do that.

My surgical activities are now limited to temporal-artery biopsies, which I do once or twice a month, and optic-nerve-sheath decompression, which I do two or three times a year; and I am hoping to convince my orbital surgeon to take over as soon as possible, which we're doing together anyway.

Q. Tell me what papilledema is.

A. Papilledema, strictly speaking, refers to swelling or edema of the intraocular portion of the optic nerve, which has a bumpy or papillary appearance normally. However, the term "papilledema" has come to be reserved for swelling of the optic nerve head due to increased intracranial pressure.

Q. And when you use the word "papilledema," is that what you refer to, papilledema as a result of

increased intracranial pressure?

A. Yes; and I refer to other forms of swelling of the optic nerve head as swelling of the optic nerve head, due to whatever cause, inflammatory, ischemic or otherwise.

Q. And in the course of your practice, do you see patients with papilledema?

A. Yes.

Q. Approximately how often do you see patients for papilledema? In a week's time, how many do you see, or, if it's easier, in a month's time?

A. Oh, five patients per week.

Q. How many pediatric cases of papilledema do you see in a week's time or a month's time?

A. One or two a month.

Q. When papilledema is present, is it usually bilateral?

A. Yes.

Q. And have you had patients referred to you by neurosurgeons specifically for evaluation of papi11edema?

A. Yes.

Q. Have you co-managed patients with a neurosurgeon specifically because a patient has had

papi11edema?

A. Yes.

Q. How is papilledema diagnosed?

A. Primarily with an ophthalmoscope.

Q. You do a funduscopic exam, and examine the internal structures of the eye?

A. That's correct.

Q. Now, in the course of your practice, do you do funduscopic exams on children to evaluate and monitor papi11edema?

A. Yes, I do.

Q. Have you done it on children as young as seven years of age?

A. Yes.

Q. How many times have you done that, do you think? And if it's easier in a month or a year's time, how often would you do an exam for papilledema on a child as young as seven?

A. Whenever I see them.

MS. CARULAS: If you're able to give her a number.

A. I'm sorry; if the patient has --

Q. I'm just asking, how often do you do exams for papilledema on children as young as seven? And

whatever time period --

A. If there's a suspicion of papilledema in a child under seven, that might occur in my practice once a week, or more often. It's very common; to rule it out.

Q. As you look at the internal structures of the eye, how do you determine if papilledema is present or if it's absent? What are you looking at?

A. We look at the optic nerve head, which is the intraocular portion of the optic nerve, to see if it is elevated, if the edges of the nerve which are normally sharp are blurred, to see if the small blood vessels in and around the nerve are congested, to see if the main vein that exits with the nerve is pulsating or not.

Those are the main features we're concerned about.

Q. And when you evaluate a patient for papilledema, is it possible to make a determination of the severity of the papilledema?

A. Yes.

Q. Do you use any type of a system to grade the severity? What do you use?

A. There are many systems.

I tend to rely more on a drawing, or better yet a photograph, and currently optical coherence tomography, as a specific measure of the actual degree of swelling that we're observing, rather than apply an artificial grading scale.

I tend to use terms like "mild," "moderate" and "severe"; and also, I attempt to determine if it is chronic or subacute, or I would say recent in onset, as best I can.

Q. What is chronic papilledema? How do you determine if it's chronic papi11edema?

A. Chronic papilledema tends to have less in the way of vascular congestion, and in particular breakdown of blood vessels with subsequent hemorrhage.

The swelling tends to be more fluffy. The nerve fiber layer swelling tends to be more distinct in more acute papi11edema; whereas in chronic papilledema the nerve starts to take on a more hardened appearance with more scarring, or what we would refer to as gliosis.

Q. Does the time period that a person has the papilledema have anything to do with whether you term it chronic or subacute?

A. Yes. What we're doing when we're looking in is guessing as best we can as to how long the papilledema may have been present; so that when one refers to the term "chronic papilledema," we're referring to papilledema that's been present for months, as opposed to weeks or days.

Q. Now, Doctor, in the course of your practice, have you had patients who have suffered vision loss as a result of chronic papilledema?

A. Yes, I have.

Q. Have you had any patients that have had normal visual fields prior to an arachnoid-cyst fenestration who developed increased intracranial pressure, papilledema, and then loss of visual fields after fenestration?

A. No; not exactly that type of case, no.

Q. When there is a finding of papilledema, is that cause for concern in a patient?

A. Yes.

Q. And is that because of how you defined papilledema, as being a sign of increased intracranial pressure?

A. Yes.

Q. Are there any complications associated with

papi11edema?

A. Yes.

Q. What are the complications?

A. The main concern we have is with potential for loss of vision.

Of course, our first concern is to the cause of papilledema; but with regard to the papilledema itself and how that may affect vision, we are concerned that it may be associated with effects on central vision with regard to hemorrhage, extension of the edema into the retina and under the retina.

Ultimately, we are concerned about progressive loss of the nerve fibers that make up the retina, and which become swollen themselves when there is papilledema.

Q. What is optic atrophy?

A. Atrophy refers to shrinkage and degeneration of tissue; and with regard to the optic nerve, we are referring to the nerve fibers primarily becoming shrunken and dysfunctional.

Q. And isn't it true that one of the ways that papilledema results in vision loss is that it leads to optic atrophy?

A. Correct.

Q. Isn't the risk for optic atrophy and vision loss greater in a patient with persistent or chronic papilledema, as compared to somebody that has acute or subacute?

A. That's correct.

Q. Would you agree that optic atrophy generally occurs over a period of time, usually months, rather than something that happens suddenly over a few hours or a few days?

A. That's correct.

Q. Now, when optic atrophy occurs, are there visual changes you can see when you do the funduscopic exam in structures of the eye? Can you see optic atrophy on examination?

A. Yes.

Q. And are there progressive changes that can be seen in a disc as the optic atrophy progresses?

A. Yes.

Q. Now, when a patient has papilledema present, are you able to see signs of optic atrophy when you do a funduscopic exam?

A. Yes. First we can observe the fibers of nerves themselves, the bundles of fibers,

disappearing.

And there is a transition point between swelling, the development of more chronic-appearing, as I mentioned earlier, that sort of hardened effect, and then ultimate shrinkage of the issues that make up the optic nerve, that then becomes what we refer to as atrophy.

During this transition period, sometimes it is difficult to assess how much atrophy is occurring; because you have swelling and shrinkage occurring in the same tissue.

Q. So sometimes the papilledema may obscure some of the things as far as observation on a funduscopic exam; once the papilledema resolves, you may be able to see more or better as to the condition of the optic nerve?

A. I would say the appearance changes. I'm not sure one sees the condition; it changes into a different form.

Q. Let me ask a different question, because my question probably wasn't very good.

Does papilledema sometimes obscure the optic nerve so that you can't get a good look at it to determine whether there's atrophy there or not,

in some cases?

A. I know what you're thinking.

One way, maybe, I could answer your question is to address it this way. If one looks simply at the optic nerve head in a patient with papilledema and attempts to judge from that appearance what the function of the eye will be, that may be difficult.

That's not because of a problem of visibility as such; it's more a problem of estimating the change in function, given the appearance of the nerve head.

Looking at the nerve fiber layer of the retina may be more predictable, but it's something that's relatively new, and it takes a lot of experience to do, and is one of the reasons I'm pursuing the research with optical coherence tomography. It's difficult to make that distinction.

Q. Doctor, when you're doing a funduscopic exam and you see optic atrophy, are you able to judge what limitations that patients will have in their vision based on what you see when you do the funduscopic exam?

A. One can make some general judgments; but it's certainly difficult to be accurate about judging how vision will be affected by simply looking at a nerve.

Q. So there are other tests that can be done to make that determination?

A. Yes.

Q. Would those other tests include formal visual field testing and acuity testing?

A. Correct.

Q. When vision is lost as a result of chronic papilledema, what portion of the vision is lost first?

A. Usually it's the peripheral vision. Usually it's the portion lower in the visual field and closer to the nose; and the visual field generally constricts from that portion, and then the peripheral portions of the visual field tend to be affected in other quadrants progressively after that.

Q. And is the vision loss associated with papi11edema a progressive type of vision 1oss that starts out, and then may become a little more severe?

A. In most cases, yes.

Q. Does the risk for optic-nerve damage increase with the duration of the papilledema?

A. Yes.

Q. And when there's a high level of concern for increased intracranial pressure, and papilledema has been initially visualized on a funduscopic exam, what type of evaluation would be done by a neuro-ophthalmologist on referral?

MS. CARULAS: Just note my objection. Go ahead.

A. A neuro-ophthalmologist would measure acuity; might check color vision, would check the pupillary reactions -- well, would do a complete exam; but concentrating on what we're discussing today, and examine the optic nerve head and then obtain some sort of visual field.

Q. And by "some sort of visual field," would that usually be a formal visual field?

A. Whatever visual field provides the best information. It depends on the age of the patient, and the ability of the patient to perform one of any number of visual-field tests that we can offer them.

Q. And if the patient is cooperative, is your

preference that the patient would have formal visual-field testing?

A. My preference is to use an automated perimeter to obtain visual fields whenever possible.

Q. Now, would you explain what an automated perimeter testing of visual fields involves?

A. Yes. It's a very demanding, tedious test, where the patient looks in a white bowl which has a steady state of illumination. They fixate on a central spot; and depending on the program that is used, it indicates whether or not they see lights of varying intensity and varying points in their visual field by pushing a button.

The computer then records those responses, and provides a general map of the field of vision tested with respect to whether or not they see lights of different intensities in those areas.

Q. Now, Doctor, when there's a high concern in a particular patient for increased intracranial pressure, and there's papilledema present, and you do the evaluation of the patient, isn't one of the things that you're trying to do to establish a baseline for that patient, find out what their baseline visual fields are, find out what their

baseline visual acuity is; those types of things?

A. Yes.

Q. And that's in order to determine, if the condition of papilledema continues, if there's going to be any change in that baseline; correct?

A. Correct.

Q. Would you agree that a patient with persistent papilledema should receive a thorough ophthalmologic exam that includes serial testing? In other words, they should be followed with serial testing of visual fields?

MS. CARULAS: Just note my objection. Go ahead.

A. It depends on the situation.

Q. I want to change my question a little bit.

A patient with persistent papilledema, would you agree that they should be followed with serial visual-field testing at least until it's established that the patient's vision is stabilized?

MS. CARULAS: Just note my objection. I think you cut him off before, too; but you may answer her question.

MS. TOSTI: Well, I changed my question, though.

A. Again, it depends on the situation. Ideally, one would follow the patient as long as there is papilledema, and then perhaps yearly after that for a routine evaluation. I think it depends on the cause of the papilledema, again, the actual duration.

In fact, I think the cause of the papilledema probably would make a big difference at least with regard to the frequency of the evaluation and the thoroughness of the evaluation; and of course the age of the patient plays a role, cooperation of the patient, et cetera.

So it's hard to generalize.

Q. Well, would you agree that you would want to follow them at least until you had enough data to determine that the patient's vision was stabilized?

MS. CARULAS: Note my objection. Go ahead.

A. At least until the problem is resolved.

In other words, if it's a brain tumor that's causing the problem, and the brain tumor is repaired, then one wouldn't need to follow the patient frequently; although I do recommend yearly eye exams for those who have had any eye problem in

the past, including papi11edema.

I hope I'm answering your question.

Q. If a patient has continuing signs and symptoms of increased intracranial pressure, would that be a patient that you would want to continue to follow with serial evaluation to determine that the patient's vision was stabilized?

MS. CARULAS: Objection; asked and answered. Go ahead.

A. Ideally, yes. I'm not sure it's entirely necessary if the problem is recognized and being dealt with.

Q. Isn't it true that serial formal visual-field testing is the best way to determine whether a person is having progressive visual-field loss from persistent or chronic papi1ledema?

A. Yes.

Q. And have you done serial visual-field testing when you're monitoring a patient with persistent or chronic papilledema?

MS. CARULAS: Just note my objection. Go ahead.

A. Yes.

Q. Doctor, how do you determine if a patient's

papilledema has stabilized?

A. For the most part, it is done by observation. If available, one can use serial fundus photography to get an accurate picture of the nature and degree of swelling that might be present.

One can then go another step and get red-free photography; and then we're hoping to measure it with OCT.

In general, in most practices, it would be done by examining the fundus of the eye.

Q. Would one measure to determine if vision is stable be by doing visual-field testing and looking to see if there have been any changes in the visual fields?

A. That would be the aspect of function associated with the papi11edema.

For that purpose, visual fields are important; as are visual-acuity testing and the other measures of visual function we employ.

Q. Doctor, have you done formal visual-field testing on children as young as seven years of age?

A. Yes.

Q. Are there any modifications you make in the testing procedure when you're testing a child of

that age range?

A. We initially attempt to use automated perimetry, encouraging the child. It's like playing a computer game that lasts for a short period of time. Many children do very well.

If that's not successful, if the child cannot keep their eyes still or their body still, we then might turn to Goldman perimetry, which is then done by an operator.

There, a technician will move and direct the light, in this case usually of different sizes, in different areas of the visual field, while the patient stares into a bowl and attempts to keep their eyes steady, which many children this age have difficulty doing.

Then, if that isn't successful, we could employ a tangent screen, which I personally don't use very often in children. I use it a lot in adults, but not in children.

And then, one might confirm, or have to rely on confrontation visual fields.

So again, it depends on the child, and whether or not they're performing with the different tests, which one will be the most useful.

Q. So you at least initially try to use the automated perimetry?

A. Yes.

Q. And then utilize the other ones, or attempt the other ones, if you were unsuccessful with the automated perimetry?

A. Yes. We can use the automated on seven-year-olds.

Q. Isn't it true that, when there's a gradual vision loss in one eye, the vision loss may not be recognized by the patient until it's fairly well advanced?

A. That can happen, yes.

Q. And you would agree that it wouldn't be unusual for a child to be unaware of gradual vision loss that occurs predominantly in one eye; correct?

A. That's correct.

Q. Now, Doctor, what is confrontational visual-field testing?

A. I prefer the term "confrontation" visual field testing.

Q. Okay.

A. But the term you use is more often used by others; by most.

It is a method by which we use our hands or different objects, sitting face to face with a patient, asking them to identify when they see whatever object we're employing, whether it's the examiner's hands, fingers, or an object the examiner is holding.

Q. And in your experience, how does the reliability of confrontation visual fields done by a non-ophthalmology specialist compare to the reliability of formal visual-field testing done under the direction of an ophthalmologist or a neuro-ophthalmologist?

MS. CARULAS: Note my objection. Go ahead.

A. Again, it depends; but in general, the automated visual fields, if they are reliable, are more sensitive and accurate than confrontation visual fields.

Q. Would you agree that the error rate for confrontational visual fields is much greater than for formal visual-field testing?

MS. CARULAS: You didn't learn your lesson. Confrontation.

A. It depends on the situation; but in general,

yes.

Q. Have you on occasion been asked to do an evaluation on a patient before they have undergone a cyst fenestration specifically to determine if the patient had papilledema present, and to determine a baseline for visual fields? Have you done that?

MS. CARULAS: Objection.

A. I'm sure I have, but I cannot remember.

Q. And have you in your practice followed patients after a cyst fenestration to evaluate for papilledema and to determine if visual fields are stable?

MS. CARULAS: Objection.

A. I'm sure I have, but I can't remember a specific case.

Q. How is chronic papilledema treated?

A. First of all, one treats the cause of the papilledema. If it's a tumor or a cyst, one treats the tumor or the cyst.

If it's of unknown cause, such as in the case of idiopathic intracranial hypertension, one will again treat what might be an underlying cause, such as obesity, or medications which are known to cause this, and at the same time employ medication

to lower intracranial pressure, and if necessary employ surgical procedures to manage the pressure if it cannot be managed medically.

Q. Is one of the medications you're talking about Diamox?

A. Yes.

Q. And is one of the surgical procedures you're talking about an optic-nerve sheath fenestration?

A. Yes.

Q. Doctor, would you agree that when a patient is found to have papilledema, the patient should be followed to determine if the papilledema is resolving or whether it is persisting?

A. Ideally, yes.

Q. Would you agree that, when a patient is being treated for increased intracranial pressure, and has papilledema, and is being treated with Diamox, that it's important to continue monitoring the papilledema to see if the treatment is resolving the problem?

A. Yes; in a chronic situation where the primary problem is not being managed, yes.

Q. Would you agree that, if a patient with newly diagnosed papilledema is placed on Diamox to

reduce the intracranial pressure or treat the papilledema, the patient should be followed with funduscopic examinations to determine if the papilledema is getting better, remaining stable, or becoming worse?

MS. CARULAS: Note my objection.

A. Yes.

Q. Now, if a patient has a persistent papilledema, should the patient be evaluated and followed by an ophthalmology specialist?

A. Yes.

Q. And would you agree that if a patient has persistent papi11edema, the patient should be followed closely for signs of optic atrophy and visual-field 1oss?

MS. CARULAS: Note my objection. Go ahead.

A. Again, it depends on the underlying problem, and I'm not exactly sure what you mean by "closely"; but the patient should be followed, ideally followed by an ophthalmologist.

Q. Now, when papilledema is caused by increased intracranial pressure, does it always go away when the increased intracranial pressure is reduced?

A. I'd never say always, but it should; and if it doesn't, then one should look for another cause for the abnormality in the optic nerve head that may resemble papilledema, or could still be papilledema.

Q. If the increased intracranial pressure is relieved and the papilledema remains, can the optic nerve still be in jeopardy in some instances?

A. Again, one would have to reconsider what's going on, if that's the case.

That's my answer.

Q. In most cases, if the intracranial pressure is relieved, but the papilledema persists, in most cases, would the optic nerve no longer be in jeopardy of injury?

A. I think, if the papilledema doesn't go away after the pressure is relieved, then there's something wrong. One would have to reconsider what's happening here.

The optic nerve may retain some appearance of swelling, but that might be due to scarring. If the papilledema has been present for a long, long time and you relieve the pressure, it may still have an appearance of swelling and irregularity.

But the nerve in most cases should return ideally to normal, or usually what happens, to a partially atrophic state.

Q. Most of the time, if you release the intracranial pressure, the papilledema will resolve over a period of time?

A. That's correct.

Q. Doctor, tell me what an optic-nerve sheath fenestration is.

A. One typically will open the filmy surface layer of the eyeball called the conjunctiva in the area near the nose; after that, temporarily remove the muscle that pulls the eye inward; rotate the eye outward; expose the optic nerve; and then usually penetrate the optic-nerve sheath at the sleeve of the nerve with a small knife.

Then, by a variety of techniques, extend that incision, and then attempt to make one or more other incisions, or perhaps an actual window is made in the sleeve around the nerve to allow for spinal fluid to drain into the space behind the eyeball, and therefore relieve the pressure that is being exerted on the nerve by that increased spinal-fluid pressure.

Q. So would the indication for an optic-nerve sheath fenestration be papilledema in the presence of increased intracranial pressure?

A. Well, it's very general. It depends on the situation.

Q. Is that one of the indications?

A. Yes.

Q. That's an option that might be used in treatment?

A. Yes; that's correct.

Q. What is the objective? What is it you're trying to accomplish by doing an optic-nerve sheath fenestration?

A. The objective is to relieve the pressure on the optic nerve that is putting that nerve at risk for further or progressive damage, and hopefully at the same time relieve pressure in the opposite side, which does occur in some cases, but not to deal with the underlying source of the problem or the cause of the problem.

Q. So would it be fair to say that it is a rescue procedure for the optic nerve, without treating whatever the underlying cause is?

A. You could put it in those terms.

Q. Now, Doctor, what is a third-nerve palsy?

A. It would refer to dysfunction of those muscles subserved by the third cranial nerve, which would include the muscle that elevates the eyelid, the muscles that turn the eye inward, upward and downward, and also those muscles which allow the pupil to constrict.

Q. And what are the signs and symptoms of a third-nerve palsy?

A. A drooping eyelid and double vision.

Q. Do you have an opinion as to whether Kevin Kiss had a third-nerve palsy prior to his cyst-fenestration surgery?

A. I do know that he had a slight degree of drooping of the right upper eyelid; but other than that, there was no distinct evidence that he had more than that as evidence for third-nerve palsy.

Q. In your opinion, did Kevin have, based on what you've seen in the records, a third-nerve palsy?

A. He might have had a mild third-nerve palsy, but I cannot make that diagnosis.

Q. And aside from the drooping lid, did he have any other symptoms that would be consistent with

third-nerve palsy?

A. Not that I recall.

Q. Now, Kevin underwent an arachnoid cyst fenestration in December of '97. Do you have an opinion if that procedure was warranted in his case?

MS. CARULAS: Just note my objection.

A. Again, I'm not an expert in neurosurgery. From the appearance of the scan, the cyst was rather large; and it's my opinion that the surgery was appropriate.

Q. Do you have an opinion as to whether Kevin should have had a complete ophthalmologic evaluation before surgery to determine if he had papilledema, and to determine the status of his visual fields?

MS. CARULAS: Again, objection as to standard of care for a neurosurgeon.

A. Yes. I'm not a neurosurgeon; but it is apparent that he had a cyst that needed treatment, and that there was no clear indication that he was having visual difficulties or needed any additional evaluation before he had the surgery that was performed in December.

Q. So from your perspective, there was no indication for him to have a complete ophthalmologic

examination that included visual-field testing and a check for papilledema; correct?

A. Yes. I don't think that there was any clear indication that was necessary.

Q. And you didn't find any indication in the record that anybody did any evaluation of Kevin's vision prior to surgery, did you?

A. That's correct.

Q. Do you have an opinion as to when Kevin first developed papi11edema?

A. No, I cannot state or say when it might have begun. I can only indicate when it was recognized.

Q. Now, you would agree that Kevin's symptoms of headache and visual disturbances and irritabi1ity that were reported in January were likely due to increased intracranial pressure; correct?

A. Correct.

Q. Isn't it likely that the papilledema discovered by Dr. Marcotty in early February was present at the time that Kevin's other symptoms of increased intracranial pressure began?

A. I can't determine that, because one can have significantly increased intracranial pressure without papi11edema,

Because the papilledema was relatively mild by the time Dr. Marcotty recognized it in February, it could have been present, but it may not have been.

Q. What is your source for saying that the papilledema was mild in February?

A. In his note, it's not clearly stated as such. I believe it may be in his deposition. I certainly can confirm that with, I want to make sure, with Ms. --

MS. CARULAS: My name is Carulas. This can be off the record.

(Discussion off the record)

Q. Doctor, would you agree that, once the papilledema was noted by Dr. Marcotty on February 9, the papilledema should have been monitored by funduscopic exams on each follow-up visit with Dr. Luciano or by referral to an eye specialist for such monitoring?

MS. CARULAS: Note my objection.

A. I believe he was already being seen by an eye specialist, Dr. Marcotty; and Dr. Marcotty, to my knowledge, had scheduled to see the patient in follow-up.

So essentially it was being monitored, or at least there was an intention to monitor this by Dr. Marcotty, and therefore there was no reason to refer him to another ophthalmologist.

Q. Did you also read in the depositions as to why Kevin did not receive follow-up with Dr. Marcotty?

A. My understanding is that he did have an appointment, but did not show up for that appointment.

Q. And what is your understanding as to why he didn't show up for that appointment?

A. That, I cannot recall.

Q. And you weren't provided with Mrs. Kiss's deposition as to her explanation; correct?

A. I don't think so.

Q. And do you recall reading the note from Dr. Kosmorsky that says that Kevin and his mother were never told to follow up with Dr. Marcotty? Do you recall reading that in the clinical notes of Dr. Kosmorsky?

MS. CARULAS: Objection.

A. No, but I'm sure it's there.

Q. Would you agree, though, that after February

9, when Dr. Marcotty noted the papilledema, Kevin should have been monitored by funduscopic exams to see what was going on with the papilledema as to whether it was remaining stable, becoming more severe, or resolving?

MS. CARULAS: Note my objection.

I think he just previously answered that the patient was scheduled for an ophthalmologic examination.

MS. TOSTI: No; I asked him if the patient should continue to be monitored with funduscopic exams, knowing that he had papilledema on February 9.

A. Well, I would go back to what I've said before. I think the most important thing would be to attempt to control the problem, to manage the problem.

Yes, one would monitor that; but the main thing would be to try to treat the problem. And so yes, ideally that's appropriate; but at the same time, one is going to try to manage the problem.

So I think the emphasis on monitoring is well and good; but in this kind of situation, you

know what the problem is, and you treat it as best you can.

Q. What is your understanding as to why Kevin was placed on Diamox in February of '98?

A. My understanding is that Dr. Marcotty told Dr. Luciano that there was papilledema. Dr. Luciano then prescribed the Diamox to lower the intracranial pressure medically before attempting additional surgery.

Q. Would you agree that, when the papilledema was discovered by Dr. Marcotty in early February, Kevin should have been referred for formal visual-field testing in order to determine a baseline to see if his optic-nerve function was affected?

MS. CARULAS: Note my objection.

A. I think that's something one would leave up to Dr. Marcotty's judgment.

I think most neurosurgeons would rely on the ophthalmologist to determine how to monitor the papilledema, and to do what would be most appropriate in a situation to deal with the neurosurgical problem.

Q. From your perspective as a neuro-ophthalmologist in this case, with Kevin having

papilledema discovered after his cyst fenestration, do you feel that he should have had visual-field testing at that point in time, in February?

MS. CARULAS: Objection.

A. I think that would be nice; but this is a situation where you have an ongoing well-defined neurosurgical problem. It's being managed.

You can do visual fields, and I probably would; and ideally the patient's being managed, things are being treated, and there is very likely going to be a resolution of the problem in a fairly short period of time.

So it's not like we're dealing with a chronic, longstanding condition that is unlikely to have a solution.

So that in this type of situation, the ophthalmologist makes the neurosurgeon aware that there's papilledema. The neurosurgeon does the best they can to manage the problem, if it's well-defined.

So getting visual fields is certainly helpful; but it's not usually done, and I think it wouldn't have altered the outcome in this case.

Q. Doctor, would you agree that once Kevin was

noted to have the disc edema in February, and he was placed on Diamox, he should have been followed by an ophthalmology specialist to determine if the trial of Diamox was relieving the papilledema?

MS. CARULAS: Note my objection; asked and answered. Go ahead.

A. There's more going on than just papilledema. The child is having headaches; there's a cyst; I think it's clear this child is probably going to end up needing surgery.

It's my understanding that there was a plan on Dr. Luciano's part to have the child followed by ophthalmology. There was a plan for Dr. Marcotty to follow up, even though that may be contested. My understanding was that was all very appropriate, and that was being done.

Q. Did you find anywhere in any of the records you reviewed that anybody looked in Kevin's eyes to determine if the Diamox had any effect on reducing the papilledema?

A. Before the --

Q. At any point when he was on Diamox.

A. I have to say I don't know if he was on Diamox up until, for example, the 14th of April; but

I know that before the final decision was made to do the second neurosurgical procedure, the child was evaluated by Dr. Bruce Cohen.

Q. Kevin had papilledema documented by Dr. Marcotty on February 9 of '98; correct?

A. Correct.

Q. And Kevin also had 3-plus papilledema documented by Dr. Bruce Cohen on April 14, '98, just before his shunt procedure; correct?

A. Right.

Q. And you would agree that there's no basis to assume that the papilledema discovered by Dr. Marcotty on February 9 improved or resolved before Kevin's shunting procedure in mid-April; correct?

A. No; it's clear that it was still present.

Q. Isn't it likely Kevin had chronic papilledema after his cyst fenestration?

MS. CARULAS: Note my objection.

A. It's clear that he developed it by February 11.

Q. By February 9, when Dr. Marcotty saw him?

A. Oh; by February 9? I cannot determine that he had what you're referring to as chronic

papilledema before that time.

Q. He had papilledema for at least two months, though; correct?

A. Two months and three days.

Q. And it was likely present before Dr. Marcotty saw him on February 9; correct?

A. Yes. It takes some time for papilledema to develop.

Q. Would you agree that, if Kevin had chronic papilledema after his cyst fenestration, it would place him at increased risk for vision loss?

MS. CARULAS: I'm just going to object over --

A. I mean, in general, yes, You're referring to chronic papilledema, and we're referring to a child that's having a problem within a period of month. Usually, when we're referring to chronic papi11edema, especia11y when you emphasize it, we're talking about papilledema that's been present for many months.

This child had a problem that began -- well, we don't know how long the cyst was present; but that appears to have occurred, at least the intracranial pressure, with regard to symptoms,

over a period from mid-January until April.

So we're talking about really weeks, a few months. And so, chronic, I would say that it's not chronic with an emphasis; it's papilledema that's been present for weeks.

And, I'm not sure; that's more of a subacute type of papilledema --

Q. Present for months.

A. -- than longstanding papilledema, that causes vision loss.

Q. It was present for months, Doctor? Not weeks; months?

A. Not many months.

Q. At least two months, and probably longer than that?

A. Right. But when we're using the term "chronic papi1ledema," when you emphasize it, it sounds like we're talking about the type of patient who's got pseudo-tumor cerebri and has had papilledema for years, and I think we have to be careful about that.

Yes, there's evidence that this papilledema was present for months, two months, eight weeks; not many, many, many months. And I

think I want to be clear about that.

When you are saying "chronic" with so much emphasis, we're being clear that the evidence here is that he's had papilledema for a relatively short period of time with respect to papilledema in general, especially papilledema that causes visual loss.

Q. When Dr. Cohen saw Kevin on April 14, he noted 3-plus papilledema. That's a significant level of papilledema, isn't it, Doctor?

A. That's correct; but it has no bearing on clinicity.

Q. That wasn't my question. I just asked you if that was a significant level of papilledema.

A. Yes, it is.

Q. And he wrote in his clinical plan for an eye consult.

A. Correct.

Q. And would you agree that, when Kevin was diagnosed with 3-plus papi11edema by Dr. Cohen, he should have been referred for an eye evaluation as soon as it could be arranged?

MS. CARULAS: Objection.

A. If it's possible. But if the child is going

to have the problem treated with surgery, one might not necessarily wait for an eye exam or even get one if the problem is being treated, especially in the manner he was, which was to place a shunt.

Q. Did you find any indication that an eye consult was ever ordered for Kevin after Dr. Cohen found 3-plus papilledema just before the shunting procedure?

A. There was no eye exam beyond what Dr. Cohen did -- I believe that's Dr. Cohen -- between the 14th of April, when Dr. Cohen saw the patient on the 15th of April, and when the surgery was performed.

Q. And in fact, there was no referral for an eye consult until Dr. Cohen saw Kevin again on June 9, several months after his surgery; correct?

A. Right. Well, at that point, it was clear that the pressure was relieved, that the cyst had been treated; so in most cases, the problem was resolved, and the papilledema would be also resolving. So most neurosurgeons 1 don't think would necessarily order an eye consult.

Q. Given Kevin's documented papi11edema in early February and his persistent symptoms of increased intracranial pressure, as a neuro-

ophthalmologist, are you critical of the fact that the first time formal visual-field testing was ever done on Kevin was in July, three months after his shunt surgery?

MS. CARULAS: Objection.

A. No, I'm not critical.

I mean, here's a child who's got papilledema, it's clearly associated with increased intracranial pressure from the cyst.

The cyst was treated with a shunt, the symptoms resolved, and the child was apparently doing fine until the visual problem was recognized; and then he was evaluated by Dr. Kosmorsky.

Q. Doctor, isn't it likely that Kevin had early signs of visual-field defects in February when he saw Dr. Marcotty, because he was reporting visual disturbances, he had the papilledema, and his visual function was at 20/25 in his right eye and 20/30 in his left eye?

MS. CARULAS: Objection.

A. No; there's no evidence that there was visual-field loss at that time.

Q. Would it raise a suspicion in your mind that there may have been the beginning of a visual-field

defect with those symptoms, the papilledema and the visual acuity at 20/25 and 20/30?

MS. CARULAS: Objection.

A. As a neuro-ophthalmologist, of course, my job as a neuro-ophthalmologist is to be very thorough in an academic setting.

In this setting, I do not believe that most ophthalmologists, or even pediatric ophthalmologists, would necessarily have obtained a visual field, especially in a situation where the problem is defined and management is ongoing.

So I have no specific criticisms; and I certainly cannot say that there was substandard care, especially on the part of Dr. Marcotty.

Is that what you're suggesting?

Q. I didn't imply that, no.

Do you have an opinion as to when Kevin was likely to have begun vision loss?

A. Yes, I do.

Q. When was it?

A. I believe he lost vision after the fenestration procedure on the 15th of April.

Q. And what is the basis for your opinion that that's when he lost vision?

A. My basis is that his visual function, particularly as assessed by Dr. Cohen, seemed to be relatively intact.

It's also based on the fact that he didn't complain of visual loss until later; and it's also based on the nature of the visual loss that was characterized, if you will, by Dr. Kosmorsky, and subsequently others.

Q. Kevin never complained of his vision loss, did he? Did you find that Kevin complained of the vision loss?

A. Actually, I have to say I have lost track of how it was recognized. I would have to refer to the records on that basis.

Q. You referred to Dr. Cohen, and you said that the visual function seemed relatively intact, What are you referring to?

A. One of the things I'm judging by is intactness of the pupillary responses. Once the visual loss was recognized, it was clear that he had a very profound afferent-pupillary defect.

This is something that I think would be recognized with multiple observers, nurses, other physicians who would have documented this

immediately after the surgery.

So that's an objective measure of optic-nerve function that I think, had this been going on before the surgery, would have been recognized by Dr. Marcotty, by Dr. Cohen, by others.

Q. Do you get that when you have initial vision-field 1oss from papi11edema?

A. Well, again, it depends --

Q. In the early stages.

A. -- on the relative involvement of the two eyes.

But I think that when the vision is so profoundly affected in the left eye, especially when central vision is affected, as it was in this case, it's not typical of chronic papilledema, and is more likely to be due to some unusual event that occurs in rare patients with papilledema, and certainly something that occurs after 1owering of intracranial pressure, as in this case.

Q. Now, you mentioned that the nature and the character of Kevin's vision loss had to do with your opinion that this occurred after the shunting procedure. What, in regard to the nature and the character, tells you that this --

A. Usually when there's chronic, as you say, longstanding papi1ledema occurring over many months, the peripheral vision is affected, and the central vision is preserved -- this is especially true in youngsters -- unless there's involvement in the retina secondarily, which I don't think there's any evidence for in this case. So it's a gradual change in the peripheral vision.

In those cases that I've witnessed, and cases in the literature, there seems to be some vascular event that occurs in a minority, and rarely, I would say, in patients with papilledema.

It can occur during the course of it; but it seems to occur in these unusual children who have pressure that's decompressed, and their nerves seem to suddenly decompensate after the pressure is relieved.

It may be that this is really a problem of blood flow to the nerve and that somehow has affected or shifted at the time of surgery.

In these cases, it's more often that this resembles what we see in adults who have what we call ischemic optic neuropathy, where there's a central vision-field loss.

And that's my basis for considering that this is the cause of this child's problem.

Q. Have you reviewed the formal visual-field testing results done on Kevin after his shunting procedure?

A. Yes.

Q. Would you agree that those results would be consistent with visual loss resulting from chronic papi11edema?

A. Well, in particular, the visual field done by Dr. Kosmorsky on the 22nd of July in the right eye, peripheral vision appears to be relatively intact.

And what impresses me the most is, in the left eye, there's a central area of visual-field loss, which is not what we usually see with chronic papilledema until the very end.

Chronic papilledema, like glaucoma, causes peripheral visual-field 1oss with marked preservation of central vision until the peripheral vision is severely constricted,

Q. And once the vision is severely restricted, can you have a visual-field result that looks like what Kevin had?

A. It's unusual. Usually it's a tiny little keyhole through which the patient can see almost 20/20, and then that is snuffed out, unless there's some other retinal complication; or in the very unusual case where the swelling alone can compromise the blood vessels.

But this is an unusual case, in so many respects; and I'm just pointing out that the nature of the visual-field loss is also unusual, Something strange happened here; and I presume that it's that unusual phenomenon that we do occasionally see after decompression of a tumor or a cyst in a child who may not even have very chronic papilledema.

Q. Doctor, would you agree that one of the duties of a physician is to do the appropriate diagnostic studies so there's enough clinical evidence to make a diagnosis?

A. Yes.

Q. And if the physicians at Cleveland Clinic failed to do appropriate diagnostic studies in Kevin's case, would you agree that that would be substandard care?

MS. CARULAS: Just note my objection. Go ahead.

A. In general terms, as you put it, yes.

Q. If Kevin had had a shunt put in in February or early March of '98, is it likely that his vision would be close to what it was when Dr. Marcotty examined him in February?

MS. CARULAS: Objection.

A. I don't think we can clearly determine that. Again, this is, I think, an unusual situation, where it might have occurred regardless of when the shunt was done. I think it's very difficult to make that determination.

Q. If formal visual-field testing was done around February 10, when Kevin was first noted to have papilledema, and it demonstrated some beginning of visual field defects, from the perspective of a neuro-ophthalmologist, what would be the recommendations?

MS. CARULAS: Objection.

A. To treat the underlying problem, which was done in this case,

Q. And what type of follow-up would have been recommended for Kevin?

MS. CARULAS: Objection. Go ahead.

A. I think it would depend on how the problem

was managed.

If the patient was being treated medically and then the determination was to manage it surgically, and that took care of the underlying problem, then I'm not sure that follow-up would make any difference.

It would be ideal to monitor the patient's vision on a daily basis; but in the real world that's not done. Again, I would think that the same management of the problem probably would have occurred.

There are other issues here, in terms of when scans were done; the patient was claustrophobic, and there were other issues. But in general, here's a child with a problem recognized from the beginning, and it's managed within an appropriate period of time.

So I really don't think that it would make any difference, and I would certainly not be at all critical of that; and my sense is, it wouldn't make a difference. But I can't really say one way or the other

Q. I don't think you answered the question that I asked. That was, if formal visual fields were

done in February and it demonstrated some visual-field defect "- now, we know that Kevin was placed on Diamox at that point -- what would be your recommendation from the perspective of a neuro-ophthalmologist in regard to following Kevin's vision?

MS. CARULAS: Objection.

A. I think it would have been the same as Dr. Marcotty did. My understanding is that there was some attempt to follow up on him within a period of weeks.

Q. That would have been appropriate, to follow up in a period of weeks?

A. I think that's fine, especially since the problem is being managed by the neurosurgeon and is recognized as to what it is, and the neurosurgeon is doing the best they can to manage the patient.

Q. Do you find it concerning from your perspective as a neuro-ophthalmologist that Dr. Luciano never did a funduscopic exam to look for papilledema at any time between Kevin's cyst fenestration and his shunt procedure?

MS. CARULAS: Objection, again.

Q. Even though Kevin was having symptoms of

increased intracranial pressure?

MS. CARULAS: Note my objection.

A. I don't find it unusual that that wasn't documented.

Q. Did you read Dr. Luciano's deposition in which he said he doesn't do funduscopic exams?

A. Yes; and I do know that especially in young people that may not be done, especially if the problem is recognized and is being managed.

Q. What's your understanding as to why Kevin required a shunt procedure in April of '98?

A. My understanding is that after the initial fenestration, although it may have decompressed the cyst associated with the increased intracranial pressure, conservative measures, including Diamox, were not successful in controlling his symptoms; and that it was finally decided to do another procedure, which was the shunt procedure.

Q. And what is your understanding as to how Kevin's vision loss was eventually discovered?

A. That, I have to admit, I don't recall.

Q. Who, in your opinion, was responsible for monitoring Kevin's papi11edema?

A. Again, if the papilledema is being

controlled, then there's no reason for monitoring it. But the patient was seen by Dr. Marcotty, and I understand arrangements were made to follow up; and I'm not sure why the child did not follow up with Dr. Marcotty, who was his assigned ophthalmologist. So I'm not sure there was necessarily a problem there from a medical point of view.

Q. Doctor, you premised your answer with "if the papi1ledema is being controlled." Was there anything that was indicated to you in reviewing those records that the papilledema discovered on February 9 was controlled?

A. There's evidence that the cause of the papilledema was appropriately managed by the shunt. The cyst was decompressed. The headaches went away. The child returned to normal function, as far as I know, returned to very normal function.

I think it was felt that -- well, it probably would have been felt by Dr. Luciano that everything was fine; except that I gather that it was relatively soon thereafter that they started seeing other doctors, and I think that the follow-up just continued as it did.

(Recess taken)

Q. What's the incidence of visual impairment when chronic papi11edema is present?

MS. CARULAS: Note my objection as to what the definition is.

A. In the usual case, say, with pseudo-tumor cerebri, where most studies dealing with what you're referring to as chronic papilledema have been dealt with, there is a variability in terms of depending on the patient population.

For example, in Philadelphia I think the incidence is in the range of 10, even 25 percent; in Detroit I think it's much higher, it's claimed to be. In my experience, it's relatively low, 10 percent.

And I'm referring to any detectable visual-field 1oss, predominantly. Loss of visual acuity is extremely rare.

Q. Now, that's with pseudo-tumor cerebri; correct?

A. Correct.

Q. What about from other causes of increased intracranial pressure?

A. Again, that's difficult to generalize; because many times the underlying cause of the

problem can also affect vision, and frequently one doesn't have time to monitor the problem.

For example, if one has a brain tumor and the tumor is removed, the papilledema goes away, and there's no visual loss. So I would think it's extreme1y rare.

Q. Would you agree that Kevin is functionally blind in his left eye --

A. Yes.

Q. -- based on records you've seen?

How does monocular vision affect a person's ability to carry out tasks?

A. I think it all depends on the individual In most children, it has very little impact on their visual function. Most can develop a different sense of depth perception, and can perform most any task.

Q. Are there certain types of physical activities that would be difficult for Kevin to do because of loss of depth perception and loss of visual fields on the left side?

A. Yes. For example, he might have difficulty with certain types of sports, such as baseball; but on the other hand, he might do just fine.

It all depends on how the child adapts,

how their remaining peripheral vision can be utilized.

Q. Is Kevin at somewhat higher risk for injury because of loss of depth perception in visual fields on his left side?

MS. CARULAS: Objection.

A. To some degree, yes.

Q. Are there any occupations that you as a neuro-ophthalmologist believe would be difficult for him or would recommend against because of the vision loss that he has?

A, I know he might not qualify for, say, flying airplanes. I know that for truck driving, in most states it's required to have better than 20/40 vision in both eyes.

Some surgical programs might require normal binocular vision. I know some ophthalmology programs still require it.

We've never really had that. We've had residents who are completely blind in one eye, and became highly competent ocular surgeons; took out cataracts with one eye only, completely blind in one eye.

Q. Doctor, I have a copy, I believe, of your

report that's marked as Plaintiffs' Exhibit 2, and it is an undated letter. I would just ask if you would identify that.

A. It should have been dated. But it's my letter; probably --

Q. On this case?

A. Written in this case, on or about August 21, 2001.

Q. And who was that report directed to? Who requested that report from you?

A. I believe Ms. Carulas or her associate.

Q. Did you provide defense counsel with any drafts of your report?

A. I don't recall doing a draft of this report. I might have, but I don't recall. Sometimes I do; sometimes I deal with it over the phone.

Q. If you had a draft, would it still be in existence?

A. No; that, I don't have.

Q. And is this the only report that you did for her?

A. That's correct; and I have no record that I did a draft.

Q. Have you provided any written memorandum on

this case, aside from the report that you've done?

A. No.

I would like to amend it, though. My Exhibit 3, I did make a correction, and your Exhibit 2 doesn't, which is the same thing; although Exhibit 3 says middle fossa cyst, which is a correction of my original letter, which said posterior fossa cyst.

Q. Does the report that we've marked as Plaintiffs' Exhibit 2, with the correction that you just mentioned, summarize all the opinions that you currently intend to express as an expert in the trial of this matter?

A. It summarizes my opinion, yes.

Q. Are there any opinions that you intend to express at trial that are not summarized in your report?

A. I can only say that I might expand on these, as we have during this deposition; but I don't expect to say anything differently. And, no; I think we've covered it all.

Q. And do you still maintain all of the opinions that are summarized in Plaintiffs' Exhibit 2?

A. Yes, I do.

Q. Do you intend to do any additional work on this case between now and the time of trial?

A. Yes. I plan to review a few items that I may have overlooked, such as how he was referred back to Dr. Marcotty, et cetera.

Q. Aside from reviewing the depositions and the materials, is there any other special work that you intend to do on this case?

A. No.

Q. And have you been asked to do any additional work?

A. No.

Q. Now, Doctor, in the assignment that you were given relative to this case, were you asked to render opinions as to whether certain physicians met the standard of care?

A. No. I've been asked primarily to deal with causality; and I don't feel qualified to render an opinion regarding standard of care regarding Dr. Luciano, since I'm not a neurosurgeon.

Q. Your report, at Paragraph 3, indicates that in your opinion Dr. Luciano appropriately managed Kevin's care by performing a procedure with the least amount of risk. Is that a standard-of-care

opinion?

A. So maybe I should qualify it.

First of all, at the time I read the opinion, it wasn't clear to me how much Dr. Marcotty might have been involved. In fact, now that I look at my opinion, it was Kiss v. Marcotty, et al. So at that time I was not only commenting on Dr. Luciano, but also Dr. Marcotty.

So much of my opinion regarding standard of care was directed towards the ophthalmologist involved, as my ophthalmic opinion.

You've asked me today to comment on Dr. Luciano's standard of care, and I maybe shouldn't have answered the questions; but based on my experience working with neurosurgeons, I might have some general opinion, and I tried to answer your questions in that light.

But as far as how I expect a neurosurgeon to manage the case, especially with regard to the surgery, I would not render an opinion.

Q. Then are you retracting this portion of your report where you say Dr. Luciano appropriately managed Kevin's care by performing a procedure with

the least amount of risk?

MS. CARULAS: Well, you've gone over it at length.

MS. TOSTI: He's just telling me that he's not --

MS. CARULAS: As to technical issues, you've gone over and over the time period and so forth.

MS. TOSTI: I need to know whether he's going to be expressing opinions on standard of care or not; and I'm asking him what he means in his report, which is my prerogative.

A. I would say that questions similar to those you've asked me today regarding standard of care on Dr. Luciano's part I will answer as based on my observations of other neurosurgeons, in a very general way, just as I've answered them earlier; but I don't expect to be any more specific than I have been already today

Q. Now, in Paragraph 2, you indicate that on December 17, '97 the cyst was fenestrated; and over the ensuing weeks the child continued to have headaches and develop the papilledema.

A. I would also edit the "the." "A"

papi11edema.

Q. Did you read in the clinical notes of January 22 where he said he did initially well without complaints of headaches, and then the headaches started two weeks ago, after the surgical procedure?

A. Yes, that's correct. As far as my notes are concerned, I note that on January 22, when he saw Dr. Luciano, he had had headaches for two weeks.

So you're correct; there does seem to be an interval.

Q. So Kevin's headaches went away after his fenestration, and then they came back; correct?

A. I'm not sure he had significant headaches before the fenestration. I may be wrong about that; but my understanding is that he developed headaches two weeks before he saw Dr. Luciano in follow-up on the 22nd. That's all I recall.

Q. Well, the note from the visit from Dr. Luciano that was recorded by his clinician indicates, did initially well without complaints of headaches, and the headaches started two weeks ago.

A. That's correct.

Q. So he did not continue his headaches from

the time of surgery?

A. That's correct.

Q. Now, you also say, over the ensuing weeks, the chi1d developed papilledema?

A. Yes; referring to the period of time between the 22nd of January and the 9th of February, which was basically two and a half weeks.

So I should maybe qualify that as saying was noted to have, rather than developed; because, as I said earlier, I'm not sure when that began.

Q. And then you also referred to medical treatment for papilledema. Is that the Diamox treatment that you're referring to?

A. Yes; correct.

Q. And do you have an opinion as to whether Diamox was an appropriate treatment as it relates to papilledema in this case?

A. Again, I would defer to the neurosurgeons.

Diamox is an appropriate method of reducing spinal-fluid production, which leads to increased intracranial pressure; and I would not argue against that. If that was the neurosurgeon's decision, I think it's appropriate treatment.

Q. Now, we've discussed your opinion that there

was a decompression that resulted in the vision loss that Kevin had. How did you rule out chronic papilledema or persistent papilledema as a cause af the vision loss?

A. I wouldn't say I ruled it out completely.

There is evidence that preoperatively the vision was at least not as profoundly affected as it became; particularly since it was Dr. Cohen who examined the child before, and then subsequently recognized the visual loss. Additional evidence for that

is Dr. Marcotty's observations that there was papilledema, and that the vision was basically normal.

With regard to acuity, I think Dr. Marcotty raised an appropriate level of concern; but in his judgment there was no imminent risk of loss.

Q. In February?

A. In February.

So that I think there's some evidence, at least, that vision was not being significantly affected preoperatively; and there's ample evidence that it was significantly affected postoperatively.

Again, I mentioned earlier, this is based on observations that the difference in pupillary reaction was profoundly different postoperatively, but not immediately postoperatively.

Had this been a chronic progressive problem, this pupi11ary difference would have been observed; especially if there was significant visual loss occurring before the ultimate procedure.

I also base this on the unusual nature of the visual fields, which is not typical of chronic progressive papilledema; and also on my own experience in this kind of situation, where a child goes to a neurosurgeon because of a tumor or some sort of cyst or some blockage of spinal fluid, the blockage is relieved, and then the vision rapidly progressively deteriorates over a short period of time. Unfortunately, usually it's more severely affecting both eyes than it is in this case.

That's the basis of my opinion.

Q. Now, you are aware that Dr. Kosmorsky, a Cleveland Clinic neuro-ophthalmologist, examined Kevin in July of 1998, and documented that Kevin had optic atrophy in both eyes secondary to papilledema. Do you disagree with Dr. Kosmorsky's notation?

A. No; I think it depends on how the -- I don't disagree that papilledema plays a role in this type of visual loss. I think the question is the way in which the papilledema plays a role. So I don't disagree with what he says, no.

Q. What role does papilledema play in this type of vision 1oss?

A. I think we don't understand the mechanism of this type of visual loss. It's a different type of effect, which in some ways is paradoxical.

Why would the optic nerve become dysfunctional when you relieve the pressure? It's considered to be perhaps a type of vascular problem.

Another theory might be that there is a certain amount of scarring that occurs in some individuals that may have to do with the way these individuals' optic nerves are constructed, that allows them to be susceptible to whatever this problem is.

It's unusual. It's a tremendous surprise when it occurs, because one has a child that's functioning normal1y, and sudden1y goes blind after the problem has been corrected, apparently.

It's different than the chronic

progressive papi11edema, where the visual field becomes restricted gradually over a period of time, especially when papilledema has been present for a much longer period of time than we can presume was present in this case.

Q. Now, you said that this phenomenon occurs in the best medical centers in the country, and in the best hands. What's the source of that statement?

A. It's occurred to a neurosurgeon to whom I would refer one of my family members without any hesitation.

Q. Who is that?

A. Carl Heilman.

Q. And you say the best medical centers in the country. What medical centers are you referring to?

A. Well, of course I'm referring to my own.

Q. Okay.

A. It's occurred, I know, in places like the University of Iowa, Cincinnati, Virginia, in San Francisco, where I trained.

I'm certain that everyone who has practiced neuro-ophthalmology has seen this at least once; if they see children, especially.

Q. Do you have an opinion as to whether Kevin's

vision 1oss was preventable?

MS. CARULAS: Objection.

A. Again, I don't think we can at this point know how to deal with this. I would rather say that everything was done to manage his problem, including the papilledema; put it this way. Everything was done to try to prevent this from happening.

So I don't think anything differently would have been done that might have prevented this.

Q. Do you have an opinion as to whether there was a certain point in time after which his vision loss was going to be inevitable?

A. No, I don't. I don't think we can predict that at all.

Q. Did you find fault with any of the care that you reviewed in this case?

MS. CARULAS: Just note my objection.

Who are you talking about in particular? We already talked about Luciano and Marcotty.

MS. TOSTI: I'm asking him if he found fault with anyone he reviewed.

MS. CARULAS: That's a non-appropriate question for this setting.

A. I would rather put it this way: I don't

find that the care rendered to this child was below the standard of the community. I don't want to comment further on fault or whatever.

I think that this was an unfortunate side effect of the disease and the treatment of the disease that was required; and that the child, to the best of my ability, my opinion, was managed appropriately.

Q. Do you blame Kevin or his parents in any way for the vision loss that he suffered?

A. No, I don't, no. I don't, no; of course not.

Q. Doctor, in the materials that we marked initially as exhibits, there are several e-mails that are marked as, I believe, Exhibits 8, 9, and 11; and I'm wondering what these e-mails are in reference to, how you happened to come by them.

A. Well, it just happened that, while I was reviewing this case and was on what is referred to as NANOSNET, which is basically a chat room for neuro-ophthalmologists around the country and the world, this same problem arose fairly recently.

The e-mail is generated from Carl Golnik from Cincinnati, who had a patient --

Q. Could you tell me which exhibit you're referring to, what the number is?

A. Nine -- wait a minute; I'm sorry. Eight.

Q. Okay. Go ahead.

A. So, Golnik had a case where the patient had a different problem, pseudo-tumor cerebri, which may have been due to a blocked vein; and had well-documented normal vision before a spinal tap.

The spinal tap revealed high pressure, and immediately after high pressure there was a severe bilateral loss of vision. This generated some discussion regarding this phenomenon, which is very rare, that after decompression of high intracranial pressure there is vision loss.

And I didn't follow up on all the subsequent conversations that this generated, but there was a response from others, including a John Harrison from Virginia, and William Fletcher, who I believe is perhaps in Toronto; I'm not sure.

Q. And you're referring now to Exhibit 9?

A. Exhibit 9 is Harrison's response, and below that also one from William Fletcher, both neuro-ophthalmologists -- all three are neuro-ophthalmologists -- commenting on how we can prevent

this.

And it's really an indication that if we were to poll neuro-ophthalmologists in a room, they would say, yes, I've seen this, it's rare; but how do we prevent it?

It seems to have something to do with the sudden drop in pressure that occurs, in this case after a spinal tap and, as Dr. Harrison notes, in children with brain tumors.

In fact, Dr. Harrison sort of jokingly says that he calls the neurosurgeons and says, drop the pressure slowly. He puts that in quotes, I think to indicate that it really isn't possible in this situation. As I thought about it, it's not practical to try to predict when this might happen, because it's so infrequent.

But we do need to, I think, address this issue, and try to find a way to predict which of these patients will have this happen, either by the appearance of the nerve or the nature of their problem; and then perhaps find some way to, as Dr. Harrison mentions, lower the pressure more gradually.

Q. Did you put a set of facts out on this

Internet site in regard to Kevin Kiss?

A. No. I have not responded to this memo, other than to call Dr. Golnik from a phone to ask him a little more about the case, without referring to this case, but to just ask him a little more.

I was mainly interested as to whether he knew of more cases in the literature, because there is a paucity of reports of this phenomenon, even though it is fairly --

Q. And what did he tell you?

A. He said yes, he's thought about reporting this case. He did not know of any additional literature references other than those that I've referred to earlier.

He did agree that, from what he's heard from others, this is a definite phenomenon, but one that needs further attention.

Q. And is it your feeling that this patient with pseudo-tumor cerebri has parallel type facts with Kevin Kiss, who had increased intracranial pressure over the course of several months?

A. Well, I think it's hard to tell. The case, for example, that Golnik is referring to as evidence that maybe the papilledema was even more subacute

refers to weeks; and I think indeed that does have more parallels to the Kiss case, where I think it wasn't that longstanding.

My personal sense is -- I can't prove it -- that he didn't have papilledema for the chronic, longstanding period. My sense is also that, in the children we've seen, it's not longstanding papilledema.

Again, we really don't understand this very well; but we do know it occurs, that there are people that seem to have moderate papilledema, and for some reason after their pressure is lowered the whole process turns against them.

I've made the analogy in the past between this situation and diabetes. If a patient comes in with a blood sugar that's very high, and you drop that blood sugar to normal within hours, it's extremely dangerous. All kinds of side effects occur.

If someone comes in with very, very high blood pressure, to make a better analogy, and you take their blood pressure and drop it immediately, they can lose vision very similarly, and have other side effects. They can have a stroke.

Therefore, with diabetes, we usually drop the blood sugar over a period of many hours, more gradual1y. Simi1arly with blood pressure; we try to encourage our internal-medicine colleagues not to drop it too precipitously.

In this case, it's so rare that to tell a neurosurgeon to drop the pressure slowly, first of all, it's technically difficult, and may, I think, perhaps put patients who aren't at risk for this -- if we could determine that -- at more risk, by trying to do too much manipulation of the shunt or whatever.

It's a problem that I'm not sure we're going to resolve; but I think it's certainly one that does deserve more attention, as Dr. Golnik apparently does in his Internet communication here.

Q. Can you get visual-field loss if you have papilledema for a period of three months?

A. Yes.

Q. Can you have visual-field loss to the extent where you would lose functional vision in an eye if you have papilledema for a period of three months?

A. It's extremely unusual; but it can occur, yes. Anything can happen.

Q. Doctor, have we covered all of your opinions that you intend to offer at trial?

A. I believe so.

Q. If you arrive at any new opinions, I would appreciate if you would please tell defense counsel so that she can inform me, and then I would request to continue your deposition relative to any new opinions that you have.

Also, if you review any additional materials aside from whatever depositions need to be still taken in this case between now and the time of trial, I would request that you inform me as to what the doctor is looking at.

Otherwise, I think we have completed all of the questions that I have for you, and your deposition is finished.

THE WITNESS: Okay.

MS. CARULAS: You have the right to read over the transcript.

THE WITNESS: Yes, I would like to.

(6:25 p.m.)

CERTIFICATE OF NOTARY PUBLIC

I, Janis T. Young, Certified Realtime Reporter, the officer before whom the foregoing deposition was taken, do certify that THOMAS REED HEDGES III, M.D., whose testimony appears herein, was duly sworn by me; that the testimony of said witness was taken by me in machine shorthand and thereafter reduced to writing by means of computer-aided transcription; that said deposition is a true record of the testimony given by said witness; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this deposition was taken, and further that I am not a relative or employee of any attorney or counsel employed by the parties thereto, nor financially or otherwise interested in the outcome of the action

Janis T. Young

Janis T. Young, RMR/CRR
Notary Public in and for the
Commonwealth of Massachusetts

My commission expires: June 28, 2007

THOMAS REED HEDGES 111, M.D.

SIGNATURE PAGE / ERRATA SHEET

PAGE	LINE	CHANGE OR CORRECTION AND REASON
31	1	change "distinguished" to included
42	22	" "gapellidemic" to fluid
48	19	" "had" to haven't
70	11	" "indicates" to they indicate
96	12	" "clinicity" to chronicity
100	23	" "with" to by
110	3	" "read" to wrote

I have read the foregoing transcript of my deposition on .January 24, 2002. Except for any corrections or changes noted above, I hereby subscribe to the transcript as an accurate record of the statements made by me.

Signed under the pains and penalties of perjury.

Deponent: Thomas C Hedges 2/5/2002

THOMAS REED HEDGES III, M.D.

Notary Public: Claire Healey 2/6/2002

in and for: _____

My commission expires: 5-10-07

THOMAS REED HEDGES III, M.D

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For deposition taken on: January 24, 2002

Kiss vs. Marcotty, et al.

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PLEASE SIGN AND DATE (before a notary if requested) this page and return it along with the transcript to your counsel.

I N D E X

THOMAS REED HEDGES III, M.D.

EXAMINATION BY:

EXHIBITS (FIRST REFERENCE IN TRANSCRIPT)

Marked exhibits retained by counsel.

THOMAS REED HEDGES 111, M.D.

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