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IN THE COURT OF COMMON PLEAS
CUYAHOGA COUNTY, OHIO

JOSEPH E. DAVIS, et al.	)	CASE NO. 276797
Plaintiffs	)	
vs.	)	
UNIVERSITY HOSPITALS OF CLEVELAND, et al.	)	DEPOSITION OF JAMES M. KIRSHENBAUM, M.D.
Defendants	)	

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DEPOSITION OF JAMES M. KIRSHENBAUM, M.D., taken on behalf of the Plaintiffs, pursuant to the applicable provisions of the Ohio Rules of Civil Procedure, before Carrie B. Thompson, Certified Shorthand Reporter and Notary Public in and for the Commonwealth of Massachusetts, at the offices of Dr. Kirshenbaum, Brigham & Women's Hospital, 75 Francis Street, Boston, Massachusetts, on August 24, 1995, commencing at 1:00 p.m.

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EXHIBITS: None

STATE OF OHIO

In the Court of Common Pleas
Cuyahoga County, Ohio
Case No. **267797** -- Judge Sutula

JOSEPH E. DAVIS, et al.,
Plaintiffs

v.

UNIVERSITY HOSPITALS OF CLEVELAND, et al.,
Defendants

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I N D E X

E X H I B I T S

NO. PAGE DESCRIPTION

(No exhibits were marked.)

P R O C E E D I N G S

JAMES M. KIRSHENBAUM, M.D.,

a witness called for examination by counsel for the Plaintiffs, being first duly sworn,. was examined and testified as follows:

DIRECT EXAMINATION

BY MR. CUNNINGHAM:

Q. Would you give us your full name and professional address, Doctor?

A. James Michael Kirshenbaum, cardiovascular division, Brigham and Women's Hospital, 75 Francis Street, Boston, Massachusetts 02115.

Q. How did you become involved in this case?

A. I was contacted by Mr. Murphy.

Q. Have you done work for Mr. Murphy or his firm before?

A. I believe I have been an expert for his firm once before. I've never worked with Mr. Murphy before.

Q. Tell me just a little bit -- I have your CV here -- but what currently do you do?

A. Well, as the codirector of the clinical cardiology service program here at the Brigham, I am one of the medical attendings in our coronary

care unit, our inpatient cardiology service and the cardiac catheterization laboratory where I perform angiography and coronary artery angioplasty. I am involved with the teaching of the house staff and fellows, and I have a clinical investigative program ongoing as well.

Q. What material have you read primary to preparing your report and also primary to this deposition?

A. I have read the medical records sent to me by Mr. Murphy and the reports of other experts that he has sent to me as well.

Q. What about depositions? Have you read any depositions?

A. The one deposition I've been given is Dr. Kalfas.

Q. You haven't read the deposition of Dr. Liberman?

A. I have not.

Q. Do you know any of the doctors that are involved in this case?

A. I do not.

Q. You've read the hospital records?

A. I have.

Q. Which hospital records have you read?

A. I've read excerpts from the Aultman Hospital hospitalization that preceded the transfer of Mr. Davis to the University Hospital. And I've read the records of that hospitalization from November 6, 1991 through November 21.

Q. In preparing your opinions for your report, what literature, if any, did you consult with or read?

A. None.

Q. Did you consult with any of your colleagues in preparing your report?

A. I did not.

Q. So your report, I take it you prepared it from reading the hospital records?

A. Correct.

Q. And I don't think at that time you had the deposition of Dr. Kalfas, did you?

A. No, sir. I received that just in the past two weeks.

Q. Has there been anything that you have read since the preparing of that report that changes your opinions in any way from the report that you submitted to Mr. Murphy on May 16, 1995?

A. No, sir.

Q. You have in front of you a report from a Dr. McPherson?

MR. MURPHY: He will momentarily. I don't think I sent that to you before.

A. I do now.

MR. MURPHY: Do you want to give him a minute to read that? I don't know what you want to do with it.

Q. Well, let me ask a few questions. It isn't going to be so much on opinions that are in here as to whether you agree or disagree with them right now. But from reading the hospital records, we know that there were two major operations that were done on Mr. Davis, do we not, the angioplasty and the laminectomy?

A. Yes.

Q. With a hematoma?

A. Yes.

Q. And we know that the players involved -- and I call them players -- doctors involved, one was a Dr. Liberman?

A. Correct.

Q. And what do you understand his position

and responsibility was in this case?

A. He was the attending in the coronary care unit to which Mr. Davis was transferred; and his role, he was in charge of the overall care of Mr. Davis.

Q. And then there was a Dr. Cirino. What was his role?

A. I believe he was the medical resident who at that time was rotating through the coronary care unit.

Q. And then there was the neurology department in which one of the doctors in the neurology department was a Dr. Katirji?

A. I believe that's his name, yes,

Q. I think I'm pronouncing it right.

A. Assuming the signature on this page is that of Dr. Katirji, I believe he was a neurology attending who was called to consult on Mr. Davis.

Q. Now, in this case there was a lumbar puncture and an attempt at a lumbar puncture done on Mr. Davis on November 8, 1991; do you recall that?

A. Yes.

Q. If you go to Dr. McPherson's report here

for just a moment --

MR. MURPHY: Let me put an objection on now as to the use of McPherson's report as to the reasons we've already talked about, and I won't object every time you refer to it.

MR. TREU: I'll join in the objection.

Q. The last paragraph, it says, "The following are my medical opinions based on a reasonable degree of medical certainty. No. 1, based on a review of Mr. Davis' medical records, there was no clear indication for a lumbar puncture on November 8, 1991." Now, my question is not at this time to ask you for your opinion as to whether you agree or disagree with that, but my question is in the ordering of the lumbar puncture, whose sphere of responsibility was that, Dr. Liberman, Dr. Cirino or the neurologic department of Dr. Katirji or all three?

A. In this particular case, it appears that a request was made for a neurologic consultation by members of the cardiology staff. That neurological consultation recommended the lumbar puncture. It would be the responsibility of the attending of

record, Dr. Liberman, to determine whether or not to follow the advice of his selected consultant regarding the lumbar puncture. So in an absolute sense, the ordering of the lumbar puncture would be under the responsibility of Dr. Liberman. The recommendation for the lumbar puncture came from the neurologist who did the consult.

Q. Let's assume for a moment that the lumbar puncture shouldn't have been ordered, for just a moment. And you were trying to place the responsibility for the ordering of that lumbar puncture on a person or persons. Who would you place that responsibility on?

MR. MURPHY: Object to the hypothetical. You can answer.

MR. TREU: Objection.

A. From my work where I do it, a coronary care unit attending, it is the responsibility of the physician of record to be aware of and involved in the ordering of tests and procedures on his patient. Ultimately it is that person's, the attending of record's responsibility to order or at least be involved in the decision regarding tests and procedures that are done.

When the attending feels that the area in question is outside of his area of expertise and requests a consultant to provide advice, it would be most common for the attending to follow the consultant's advice if it appeared reasonable. It is a formality, I think, of terminology to say who orders it. But the ultimate responsibility for the patient's care rests, I believe, in the attending of record's hands, And in this case it would be Dr. Liberman.

Q. If the consultant who recommended the lumbar puncture or the department, that neurological department who recommended it and it was determined, hypothetically -- and what I'm trying to do, Doctor, I don't want opinions as to conduct. I want to get opinions as to responsibility so we can determine at least from you as to who do you look for responsibility if there was something that went wrong, all right?

So in this case, if there's a lumbar puncture, hypothetical case of a lumbar puncture being ordered and a consultant is called in from the neurology department and the neurology people say you should do a lumbar puncture, and the doctor

says, "Okay, I'll do the lumbar puncture based upon consulting with you," and he orders the lumbar puncture and it never should have been done in the first place, that situation I think you're telling me that one responsibility would be for the attending physician, who in this case, hypothetically would have been Dr. Liberman.

MR. MURPHY: I object to the hypothetical, but go ahead.

Q. Now, would also the neurology department or the consultant who made that order, wouldn't he have some responsibility or that department?

A. Yes.

MR. TREU: Objection.

Q. Or wouldn't the hospital also have some responsibility?

MR. TREU: Objection as to "department."

Q. You can answer that.

A. The answer is yes.

Q. And you want to qualify that some way?

A. I would be happy to respond to a question about qualification.

Q. I thought I might have interrupted you in

a sentence. If I start to do that, raise your hand and say, "Hold it." If not, Pat will do it for me. Now, if we go to Dr. McPherson's second opinion found on page 2 where he says, "There is no clear indication for this patient to be treated with Heparin as recommended by the neurologist after the spinal tap." Now, do you recall in the hospital records where the consultant, neurologist consultant recommended Heparin to be begun after the spinal tap?

A. I do.

Q. And my question then is, in the -- and we also know that that Heparin was not given at that t'ime, don't we?

A. Correct.

Q. Let's assume, hypothetically, again, that Heparin was recommended by the neurologist of the neurology department, and that Dr. Liberman in fact then ordered Heparin after the lumbar puncture. And just assume for the time being that that Heparin should not have been given. With those assumptions, who would be responsible in that case for the administration of Heparin?

MR. MURPHY: Objection. The

assumptions aren't borne out by this record at all.

MR. TREU: Let me add an objection, that your question seems to be duplicative in that it says a neurologist and it says a neurology department, What does a neurology department have to do with this? Dr. Katirji was an independent consultant on this case. And obviously if you're trying to include the entire neurology department at University Hospital in the question, then I certainly object.

MR. CUNNINGHAM: Well, it's a hypothetical. You may answer.

MR. TREU: It's certainly hypothetical.

Q. I'm trying to place responsibility if Heparin is ordered by a consultant, recommended by a consultant and the attending physician then orders Heparin and it's determined that Heparin shouldn't have been given, who is responsible for that, again?

MR. TREU: Objection.

A. The line of responsibility, as I understand, generally rests with the attending of record for any patient. However, if an attending

feels that a particular problem is outside of his area of knowledge or expertise and he requests consultation from a legitimate expert in his hospital who recommends a course of action that appears reasonable, prudent and appropriate, and that course of action is instituted and later determined by someone else to have been incorrect, then I would find it hard to place blame on the attendant who went to his consultant for advice for following the advice of that consultant.

So the term "responsibility" that you asked me is a difficult one for me to answer from the standpoint of blame or fault. As a general rule, much like a captain of a ship is responsible for the actions of his crew, even if he or she didn't necessarily do it, I would suggest that in a hospital setting the attending of record is responsible for the care of his patient. But I would be extremely hard pressed to blame at all an attending for following the advice of his recognized expert in an area where he himself felt that it was not his expertise.

Q. But when a doctor writes a physician order in a hospital record, does he take

responsibility for that order that he has written?

A. Yes.

Q. Going to the third opinion of Dr. McPherson --

A. Can I add one other comment?

Q. Sure.

A. This is where I would, frankly -- the term "responsibility" -- maybe even get advice from other people. If an attending requests a consultation from an expert who recommends a procedure or form of therapy limited to the area of expertise of that expert, and the nonexpert follows that advice and follows it correctly according to the recommendations of the consultant, then I think a very reasonable case could be made that the consultant's area of expertise, if followed, lies within his realm of responsibility for doing it correctly. And the attending physician fulfilled his responsibility by involving a consultant, period.

And if the advice turns out to be later determined to be wrong by someone else, I still believe that the attending would be quite legitimate in saying, "I fulfilled my

responsibilities to this patient by consulting the recognized expert in my institution for advice," period.

Q. Would you have that same opinion if the attending physician is the one that wrote the order?

A. Yes, because in many hospitals to avoid confusion, the hierarchy of who gets to write orders is fairly clearly spelled out. And it would be very common in a teaching environment, for example, to have order writing capacity relatively limited to a few individuals for clarity and confusion's sake. So that even if the order was written by the intern on the cardiology service following the advice of the consulting neurologist, I would still include the neurologist in the broad area of responsibility for the decisions made.

Q. You're saying you would include him, but you're not excluding the attending physician who wrote the order?

A. I am not excluding the attending physician.

Q. So you're just including, okay. Now, let's go to the third opinion of Dr. McPherson and

that is on -- it reads, "The spinal tap was difficult to perform and required three attempts." Now, for whatever reason -- hypothetically, again, we're talking -- let's assume that the attending physician orders the lumbar puncture. Let's assume that the attending physician participates in the lumbar puncture through assistance of securing the patient into a static form.

But let's assume that the lumbar puncture is not done properly. Now, here the attending physician is in the room, but another person, another doctor does the lumbar puncture but does the lumbar puncture improperly. Who is responsible in that case?

MR. MURPHY: Objection. I object again to the hypothetical. I don't think it's borne out by the record.

MR. TREU: Objection, join in the objection.

A. I want to be clear that there was nothing I read in the record that indicates the lumbar puncture was performed improperly. So in this particular case --

Q. That's why I said hypothetically.

A. In this particular case, the issue of improper performance of the procedure -- and my area of expertise, which is cardiology and not lumbar puncture -- nonetheless, there's no obvious improper performance of a lumbar puncture that's apparent to me. But again, the physician of record often uses his associates, physicians in training that work with him, to perform procedures under his supervision. And it is the responsibility of the physician of record to be responsible for the procedures that people working as his proxy have performed appropriately.

Q. So in that situation you would have, of course, the person that did the lumbar puncture that was done improperly as well as the attending physician?

MR. TREU: Objection.

MR. MURPHY: I object because it's the same hypothetical.

MR. CUNNINGHAM: I'm trying to summarize what he said.

A. I'd like to, if I could, elaborate a bit on that.

Q. Sure.

A. If the attending of record is assisting a procedure for which he is not an expert being done by someone who is operating on behalf of the expert, his presence or his assisting as you mentioned with stabilizing a patient or making the patient more comfortable, does not in my mind put him in the role of supervising the particular procedure that is being done or being responsible for that procedure being done.

Rather, it is the physician who is responsible for whatever that procedure is being responsible for the person doing it, doing it correctly. And my thoughts here are as a cardiologist, if one of my cardiac fellows operating on my behalf does a procedure on a patient that is under the care of an attending that has no knowledge of cardiology who happens to be present in the room during the procedure being performed, I would view it as my responsibility as the cardiologist to be responsible for the cardiac fellow performing as my proxy, not the attending of the patient who may have nothing or may have no knowledge of the procedure that's being done.

Q. Okay. I think I follow you, Doctor.

Now, let's see if I am following you. Let's assume, well, in this case, again, I want to stress, this is a hypothetical. And I know you've qualified by saying there's nothing in the records that would indicate to you that there is any improper procedure done as far as the lumbar puncture. So with this qualification, this is a hypothetical.

But from the records we know of a consult that was made through neurology by Dr. Katirji. We know that Dr. Liberman was in the room, and we know that Dr. Cirino, who was the resident I believe working under Dr. Liberman, did the lumbar puncture. Now, assuming, and again, hypothetically, that the lumbar puncture was not done properly, who or which person, who or whom would be responsible in that case?

MR. TREU: Objection.

A. In this particular case where it appears that the medical resident who performed the lumbar puncture was doing it in his capacity as the resident in the coronary care unit under the supervision of Dr. Liberman, Dr. Liberman would be the physician who is ultimately responsible.

Q. Would there be, of course --

A. If the resident was performing a lumbar puncture, for example, as a member of the neurology service on that day, and Dr. Liberman were in attendance, then I would lay the responsibility for that procedure under the auspices of the neurologist who was attending that month on the neurology service.

Q. I think I got you. Now, No. 4 of Dr. McPherson's opinions, he states that, "There were no documented neurologic checks to closely monitor Mr. Davis' lower extremity motor sensory function post lumbar puncture until his complaints of inability to move his legs." Again, I want you to consider hypothetically that there were no documented neurologic checks. Who would be responsible in this case to have ordered neurologic checks?

MR. TREU: Objection. Again hypothetical not borne out by the record.

MR. MURPHY: Likewise.

A. First off, I believe in the record there's an indication that one of the nurses in performing her routine exam states the patient

could move all extremities as an indirect indicator that at least a neurologic check was done on Mr. Davis during the time period in question. But to answer your question in a hypothetical involving another patient, for example, I would need to know in that hospital what the protocols were for following patients who have undergone any specific procedure.

There could be a standard nursing order or a nursing policy for following a patient who has had a procedure. There could be specific orders written by the person who has done the procedure for recommended follow-up. And to answer your question on a more specific basis, I'd have to know exactly the procedure in question and how that hospital in their critical care pathways or various recommended orders for how a patient is followed handles that procedure.

Q. Well, let me try it again for a moment, hypothetically, again. And, again, I want to stress it's hypothetically, because what I'm trying to understand from you are opinions as to responsibility in the treatment and care of a patient in certain aspects. And that's what we're

doing here. Let me try it again and see if I can make myself more clear, or clear, I guess.

Let's assume that in this case that neurological checks should have been ordered and they weren't ordered. And that's hypothetically. Assume that they should have been ordered and they were not ordered. To whose responsibility does that rest?

MR. MURPHY: Objection. At what time, Dick? Can I ask that?

MR. TREU: Objection.

MR. CUNNINGHAM: Well, I guess after the lumbar puncture was given.

Q. And assuming no neurological checks were ord red and assuming that neurological checks should have been ordered, whose responsibility is it?

MR. MURPHY: Objection.

MR. TREU: Objection.

A. With all due respect to your pointing out this is hypothetical, it's hard €or me to answer your question in specific fashion because, frankly, since it's hypothetical, I could imagine a number of scenarios where the patient's clinical condition

would warrant a specific recommendation made by the neurologist for follow-up after lumbar puncture, made by the invasive cardiologist for follow-up of the patient in light of his lumbar puncture, made by the house officer who did the lumbar puncture in the first place, or finally could be part of a standard protocol that the nursing service would have on line for following patients who have undergone lumbar punctures.

And the reason I am very broad in my answer is that specific situations necessitate specific follow-up orders. And in the hypothetical you've described, it could be, frankly, from no one's responsibility to write orders, because it would not be at all expected to have any unique follow-up orders written, to very important for a specific individual to have provided this.

Q. Now, this question is not a hypothetical. Did you find anywhere in the hospital records after'the lumbar puncture was performed on November 8, 1991, any orders for neurological checks?

A. No.

Q. Now, if you would read Paragraph 4 of the

opinion of Dr. McPherson. He says, quote, "There were no documented neurologic checks to closely monitor Mr. Davis' lower extremity motor or sensory function post lumbar puncture until his complaints of inability to move his legs." Now, I recognize what you have stated as to the one document, so I'm going to say assuming, hypothetically, that that statement that is made in that opinion by Dr. McPherson is correct, all right?

A. (Witness nods.)

Q. If there were no neurologic checks to closely monitor Mr. Davis' lower extremity motor or sensory function post lumbar puncture until his complaints of inability to move his legs, then I want to ask you hypothetically if that's correct. Then I want to ask you do you agree or disagree with Dr. McPherson's opinion which reads as follows, Doctor. "This failure to closely monitor Mr. Davis' neurologic status in view of a traumatic lumbar puncture with concomitant use of Heparin was a deviation from the accepted standard of neurologic care."

MR. MURPHY: Objection.

Q. Do you agree or disagree with that

opinion, or maybe it's beyond your expertise to give an opinion. I want to be fair to you.

MR. TREU: Objection.

A. It's beyond my area of expertise to give an opinion.

Q. This gets more into the field of neurosurgery or neurology; would that be a fair statement?

A. Correct.

Q. Now, Doctor, if we could go to another report and it's the report of --

(A recess was taken.)

Q. Doctor, I'm referring to a report by a Dr. Jerry Kaplan, who is a neurologist and an expert for Mr. Murphy in this case, as you are, I believe; is that right?

A. Yes.

Q. And on page 2 in the last paragraph the second sentence reads as follows. "The patient suffered a subdural and subarachnoid hematoma which resulted in his paraplegia." Would you agree or disagree with that statement? Or if it's beyond your expertise, you can say you have no opinion.

A. It's beyond my area of expertise.

Q. Doctor, if we go back to Dr. McPherson's report again, on page 2. And if you read the first sentence of the last paragraph which reads as follows, "It is my opinion based on a reasonable degree of medical certainty that Mr. Davis' paraplegia is secondary to the hematoma which was formed after a traumatic lumbar puncture and the use of Heparin and aspirin." And my question to you, Doctor, do you agree or disagree with that opinion, or is it an area beyond your expertise to give an opinion?

A. It's beyond my area of expertise.

Q. Let's go to the second sentence of that paragraph, Doctor, where it reads, "It is further my medical opinion within a reasonable degree of medical certainty that a lumbar puncture was not necessary in this patient to assess his mental status." Again, I ask you whether you agree or disagree with that opinion, or is that opinion also beyond your expertise to give an opinion?

A. It's beyond my area of expertise to give an opinion regarding that sentence.

Q. And the third sentence, Doctor, I read for you as follows. Dr. McPherson says, "It is

further my medical opinion within a reasonable degree of medical certainty that once a traumatic lumbar puncture is performed and once Heparin is used, it is necessary to closely monitor the patient's neurologic status in anticipation of the formation of an epidural hematoma with concomitant cauda equina syndrome." And I ask you, do you have an opinion or do you have an opinion whether you agree with this or disagree with this, or is this opinion beyond your expertise to give an opinion?

A. It's beyond my level of expertise.

Q. Doctor, if you would go to the report of Dr. William Cox, a forensic neuropathologist.

MR. MURPHY: Is he still coroner of Summit County?

MR. CUNNINGHAM: He's coroner of Summit County.

Q. And if you would go to page 2 to the last paragraph, and I'm going to read the first sentence to you. Quote, "It is my belief within a reasonable degree of medical certainty that the subdural hemorrhage within the lower spinal canal was due to the concomitant administration of aspirin and Heparin." And I ask you whether you

can agree or disagree with that opinion or whether, again, this opinion is beyond your expertise so that you cannot give an opinion?

A. I cannot give an opinion.

Q. Doctor, let's go to Dr. Kalfas, who is a neurosurgeon with the Cleveland Clinic Foundation and is an expert for Mr. Treu, who represents the University Hospitals in this case. Do you have that? It says the Cleveland Clinic Foundation. There we are.

Now, if you go to page 2 of Dr. Kalfas' letter report, down to the fourth paragraph it reads, and I quote, as follows: "It is my opinion that the intrathecal hematoma was a result of a lumbar puncture. This may have occurred without the patient being on Heparin; but under these circumstances, it is most likely directly related to the commencement of Heparin therapy." Now, those two sentences, do you agree or disagree with that opinion in those two sentences, or is it beyond your expertise to give an opinion?

A. It is beyond my area of expertise to comment.

Q. Now, let's go into your field for a

moment, Doctor. I have some questions on your report. And this is a report that you wrote to Mr. Murphy; is that correct?

A. Yes, sir.

Q. Why was Mr. Davis admitted to University Hospitals? What was the reason for his admission?

A. Mr. Davis had previously been admitted to the Aultman Hospital for symptoms of light-headedness which subsequently evolved to be in fact episodes of recurrent high-grade ventricular arrhythmias, specifically ventricular tachycardia and ventricular fibrillation. Management of those potentially fatal arrhythmias was complicated by recurrent episodes of ventricular fibrillation that were not responsive to a variety of antiarrhythmic agents that were employed at the Aultman Hospital. Because of the inability to control Mr. Davis' arrhythmias, he was transferred for further management to the University Hospitals.

Q. Because he was having cardiac arrhythmia?

A. He was having continuing cardiac arrhythmias; and as it subsequently turned out, had actually probably sustained a myocardial infarction as part of that admission. In addition, he had

undergone cardiac catheterization while at the Aultman Hospital, which had shown significant coronary artery disease, including the appearance of what was felt to be a freshly occluded coronary artery. And because of the concern that recurrent myocardial ischemia was contributing to Mr. Davis' recurrent arrhythmias, he was also transferred to determine what would be the optimal treatment strategy for Mr. Davis' occluded coronary artery and ischemia.

Q. Now, he was examined and diagnosed, and the recommended form of treatment for his cardiac care was one of angioplasty, was it not?

A. It would certainly be part of the recommended therapies. But whether or not angioplasty itself, medical anti-ischemic therapy or potentially surgical revascularization would ultimately be appropriate was to be determined as he continued to undergo care at the University Hospital.

Q. Wasn't he included for angioplasty on November 11, 1991?

A. He was transferred with that intent. But I'm sure that the doctors at University Hospital

would have reserved the right to review Mr. Davis' condition and make a determination that in fact optimal care would be an angioplasty.

Q. But he was scheduled, was he not, to go for angioplasty on November 11? That was a Monday, 1991?

A. After he was transferred to University Hospital and then assessed, yes.

Q. I understand that. I'm not saying that they just came up and said, "We're going to do angioplasty" without looking at him. They did a lot of tests on him and made a lot of determinations and findings and so forth. And after all of that, they decided he was a candidate for angioplasty. And they set the date to do it as November 11, 1991?

A. Correct.

Q. I'm not in any way implying that the University Hospital was, as far as the cardiac care goes, that they were doing an arbitrary procedure without going through the proper workup. Now, he, of course, didn't make it for angioplasty on the 11th, because he had to go in for emergency angioplasty on November 9; isn't that right?

A. Yes.

Q. 1991. Now, in that angioplasty on the 11th, it was performed successfully, wasn't it?

A. On the 9th, yes, it was.

Q. Excuse me, thank you. Can you tell me in the -- you've read the operative report -- and can you tell me basically how this, what blockage there was that they unblocked?

A. The angioplasty report indicates that he had an occluded posterolateral branch of his circumflex coronary artery as well as an 80 percent stenosis in an obtuse marginal branch. Both of these narrowings, one the occlusion and the other the stenosis, were successfully angioplastied with a resultant narrowing of less than 20 percent.

Q. When you say less than 20 percent, how did that leave the patient? Is that within a normal range?

A. That would be considered an excellent angioplasty result.

Q. There are many people -- and this is maybe a broad statement, and correct me if I'm wrong -- but there are many people that are at least healthy, walking around with blockages of

less than 20 percent, right?

(A recess was taken.)

Q. I'm going to withdraw that question and try it again. The result of the angioplasty on Mr. Davis where he ended up with a less than 20 percent blockage, how would his heart then compare -- when I'm saying "heart" -- the arteries compare that were unblocked to the normal 60 year old white male?

A. Well, the normal 60 year old white male presumably wouldn't have any blockages in his arteries, nor would he have suffered a myocardial infarction, both of which Mr. Davis had. But to try to, I guess, expand to your question, the immediate angioplasty result obtained on Mr. Davis was excellent.

Mr. Davis remained, however, at significant risk for acute reocclusion of the coronary arteries that had been angioplastied as well as at moderate risk for restenosis of those coronary arteries at a later date. So that Mr. Davis was certainly in need of continued cardiology follow-up because in fact he had already sustained at least one myocardial infarction in the

setting of this admission and had documented coronary artery disease.

Q. Where was the myocardial infarct? Where did that happen in his heart? Do you know?

A. Well, it is impossible to say for sure. During Mr. Davis' initial cardiac catheterization at the Aultman Hospital, his left ventriculogram showed evidence of inferior and posterolateral wall akinesis, meaning or suggesting that the inferior and posterolateral wall of his heart was no longer beating normally, presumably because of a recent myocardial infarction.

While he was at the Aultman Hospital, he had repeated electrocardiograms obtained, some of which showed significant ischemic EKG changes in the part of his heart that would normally be considered the inferior or posterolateral wall. So I would assume, based on the EKG findings at Aultman and the left ventriculogram findings at Aultman and the subsequent evidence on his arrival at University Hospital of an elevated CPK isoenzyme, that his myocardial infarction had occurred in the general territory supplied by his stenosed and occluded coronary arteries.

Q. When you say there was a significant risk of a return of another occlusion or to have another occlusion?

A. One of his arteries that was angioplastied at University Hospital had the appearance of being a freshly occluded coronary artery. That raises the real possibility that there was a thrombus or blood clot at the site of that occlusion. When you do angioplasty of an occluded coronary artery with thrombus, for the next day or two, sometimes even three days, that artery is at risk of forming another blood clot and occluding again, so-called an acute occlusion.

That was the primary reason that Mr. Davis was continued on Heparin following his angioplasty to minimize the risk that that artery would suddenly occlude.

Q. When he was discharged, what was the condition, his cardiac condition upon discharge?

A. As best as I can glean from the records, following his angioplasty, he neither had any episodes of recurrent serious ventricular arrhythmias nor any evidence of recurrent ischemia. And using those indirect markers, it

would suggest that his coronary arteries were still patent. That is to say that both of the angioplasties arteries were still open and that his cardiac condition at least had stabilized.

Q. Assuming, because you don't know, so I'm going to make it a hypothetical, that since his discharge from University Hospitals, that he has had no return of difficulties that he had experienced on admission at the University Hospitals and that his cardiograms, at least the last one, would appear to be generally in the normal range. Could you give any prognosis as to whether or not he's going to, whether or not the effect of what he had back at University Hospital, that they were successful in their angioplasty procedures, whether or not now it's four years later and he has none of those symptoms or none of those cardiac problems?

MR. TREU: Objection.

Q. Just hypothetically.

A. The best answer I can give is to say that at the time he left the hospital, the clinical conditions that were so worrisome, the clinical cardiac conditions that were so worrisome, had

resolved, suggesting that the angioplasty at that moment was still working well. Now, unfortunately, at least 30 or 40 percent of patients who undergo angioplasty may have restenosis of the coronary artery over three to six months. That may have occurred in Mr. Davis' case even though he was clinically asymptomatic.

It is possible that he has developed collateral arteries supplying the area that his own native coronary arteries were otherwise supplying. It is possible that the stenosis has recurred but not so severely to cause any symptoms. It would be hard for me as a hypothetical four years later to tell you what the status of his coronary arteries are now.

Q. So you wouldn't really know one way or the other?

A. No.

Q. In doing the angioplasty, am I correct basically that they run like a balloon up through -- on a stenosis, this means a narrowing of the artery, does it not?

A. (Witness nods.)

Q. So they run up, in a layman's term, a

balloon and open up the opening? Is that basically what they do?

A. What they essentially do is identify the site where the blockage was, very gently thread a soft wire through that blockage, and then over that wire pass a catheter that has a small balloon on it. Once under fluoroscopy they position the balloon at the site of the blockage or the narrowing, they inflate the balloon, and in so doing reopen the artery and reduce the obstruction. Then the balloon and the wire are withdrawn. They verify that the artery is open and staying open. And then they are at that point done with the procedure.

Q. Back up just a moment. On doing the angioplasty, can the artery that did not have an obstruction but was a stenosis -- that's just a narrowing of the artery?

A. Correct.

Q. You had mentioned there is no blockage there, is there?

A. Well, I should use my terms a little more carefully. One of his arteries was completely, 100 percent blocked.

Q. That was an occlusion?

A. That's right. The other artery had a narrowing or stenosis of at least 80 percent. So there was a narrowing in that artery.

Q. So the narrowing in that artery, what they did was take up the wire with the balloon on it and opened it up and just opened up that artery so that the narrowing --

A. Had been reduced from 80 percent down to 20 percent.

Q. So they just opened that up so it now had a better flow?

A. Correct.

Q. And then the other artery, the circumflex that had the occlusion --

A. The artery is described in the report as the --

Q. It's a branch, wasn't it, just a branch of the circumflex?

A. It described it as the occluded posterolateral branch, yes. But when you say "just a branch," that may imply small. And that would not be a correct inference. The circumflex artery may in fact have been relatively small and the

posterolateral branch actually the large artery. I have not been given the angiogram specifically to review, so I can't comment on the size of the artery.

Q. So that was occluded?

A. Yes, sir.

Q. And what caused the occlusion?

A. The probable cause of the occlusion was a thrombus or blood clot developing at the site of what was probably a prior narrowing. And the plaque or cholesterol buildup at that site suddenly ruptured, fissured, cracked, in some way changed allowing the contents of the plaque to be exposed to the blood stream. The contents of the plaque are highly thrombogenic, meaning they tend to promote the formation of clots. And that was probably the event that caused the artery to suddenly occlude.

Q. So then you had an occlusion, in other words, a stoppage of the blood flow because of this plaque that was blocking the blood?

A. Yes. The angiogram done at Aultman suggested that blood supply down that artery was prevented from going to the end of the artery by a

complete blockage from a blood clot.

Q. So what the angioplasty did in that case was go in again and remove that plaque or that b1ockage?

A. For semantics I wouldn't say "remove." In the case of a blocked, a 100 percent blocked artery, they were able to get a wire to go through the blood clot and then pass over that wire a balloon that compressed the blood clot and helped remove or lessen the severity of the stenosis, of the underlying stenosis at the site of that blood clot resulting in, when they were done, an artery that at that point had only a 20 percent narrowing.

Q. And they opened that up to what?

A. To instead of 100 percent occluded, it's now only 20 percent occluded.

Q. So you had an 80 percent flow?

A. 80 percent opening.

Q. If I were going home to explain this to my son what you just told me or my grandson, could I analogize that to maybe a pipe with rust inside with a particle breaking off and blocking the flow of water? Would that be an occlusion?

A. It would be an occlusion. But in this particular case, it's not necessarily a part breaking off and subsequently blocking the artery. Literally the part of your pipe cracks enough to allow in this case clotting proteins in the blood, or in your example in the water, to at that spot suddenly form a blood clot.

Nothing has to break off and travel downstream, but rather the mere presence of the fissured plaque makes that area highly thrombogenic so that the blood as it's passing by is activated to form a clot. As soon as the clot forms, no blood passes downstream, and you have the start of a heart attack.

And I might add that if one goes through the sequence of events at Aultman, the sequence suggests that he was having recurrent episodes of ischemia that may have been contributing to his arrhythmias, and that would suggest that possibly a blood clot was forming and dissolving at this plaque until it finally formed completely and blocked the artery.

Q. When he was at Aultman Hospital, you mean?

A. Yes.

Q. Because you know when he went in the Aultman Hospital, he went in just with a dizzy spell. And he had worked I think two days before that.

A. Correct. And what is suggested but not confirmed is that that dizzy spell was caused by a recurrent episodes of serious arrhythmias, specifically ventricular tachycardia. The explanation of which, why was he having a ventricular tachycardia, was thought to be, and I think correctly, recurrent episodes of ischemia, meaning that for whatever reason blood supply down one or another of those narrowed arteries was transiently so inadequate, the heart muscle was not able to function normally. When that happened, he had his arrhythmias.

Q. So from a cardiac point of view, I guess he was fortunate to have this in the hospital where it could...

A. It was fortunate that he was at a hospital that could correctly diagnose it and subsequently transfer him to a place that could treat it.

Q. Now, Doctor, on page 2 of your report, do you know why from reading the records as to why a lumbar puncture procedure was recommended?

A. Specifically from reading the records, the lumbar puncture was recommended to further explain the patient's neurologic condition of one of confusion and agitation. And it appears that the purpose was to specifically exclude either meningitis or encephalitis as the etiology for his declining neurologic state.

Q. Before I ask you any questions about meningitis and encephalitis, is that beyond your expertise?

A. As someone who personally attends in a coronary care unit, what I saw in this record was a very standard course of action that a cardiology attending would do on someone with a problematic neurologic condition, namely, ask for consulting advice from a neurologist. The neurologist's advice, as we've already commented on in this case, was among other things to perform a lumbar puncture, particularly after a head CT had been done first.

And I would have in my role as an

attending taken a look at that advice. If it seemed to fit with what I understood to be the cause of the patient's neurologic condition, I would have said to my house staff, "Please follow the advice of our neurologic expert."

Q. Now, if the neurologic expert had been Dr. McPherson, he would not have ordered a lumbar puncture, would he have?

MR. MURPHY: Objection, hypothetical.

MR. TREU: Objection. Assumes he's an expert.

A. I don't know. I know what I've read in Dr. McPherson's report. What I suspect would have happened is the house staff or attending would have spoken to the consultant and discussed all forms of therapeutic options. And whatever would have occurred would have been the basis of that discussion.

Q. Let's see if I understand what you're saying. You're saying that the lumbar puncture was recommended by the neurology department; and, therefore, we went ahead and did it. My question is, what if the neurologic department would have said no lumbar puncture is necessary?

MR. TREU: Objection, again, to the reference to neurological department. What are you talking about? Are you talking about Dr. Katirji?

MR. CUNNINGHAM: Dr. Katirji.

MR. TREU: He's an independent attending consultant. You took his deposition.

MR. CUNNINGHAM: That's for you to argue.

MR. TREU: It's a legal issue. He has nothing to do with the hospital.

Q. If the neurologist would have said not to do a lumbar puncture, in that hypothetical case, knowing everything else in the record, what would have been the accepted practice to follow?

MR. MURPHY: Objection.

MR. TREU: Objection.

A. The accepted practice of an attending who has sought consultant advice is to interpret the consultant's advice as it best applies to his or her patient. And it would have been the responsibility to Dr. Liberman to say, I don't know that I agree with that opinion. I either will ignore it, seek a second opinion or thirdly to agree with it and follow the advice. If Dr.

Liberman felt his area of expertise was superseded by the expert, I suspect he would follow the advice of the expert in not doing the lumbar puncture.

But the specific issue here is what is the interaction between an attending and a consultant. In this case the consultant made a recommendation that appeared plausible in the chart as I went through it, was made by a neurologist specifically asked to address the question of the patient's neurologic status. And I think it was entirely appropriate as a cardiologist for Dr. Liberman to say to his team, "Let us follow the advice given to us by our expert consultant."

Q. Let's go to page 3 of your report for a moment. In the first complete sentence beginning with, "Mr. Davis was returned to the intensive care unit where continued monitoring throughout the night of November 9 and the early morning of November 10 revealed no significant bleeding at the catheterization site in his right groin nor any compromise to his peripheral arterial pulses."

My question to you is, what is the relevance, if any, to the formation of the hematoma to where you say no significant bleeding at the

catheterization site in his right groin. Is there any relevance of that statement to the formation of the subdural hematoma, or are you just making a statement from a cardiologist's point of view?

A. In this particular instance the statement is only made to indicate that standard post angioplasty follow-up of this patient was performed as documented in the chart in that there was an attempt to look for and to exclude the presence of bleeding at his catheterization site or evidence of compromise in blood supply to his right lower extremity as evidenced by the continued presence of normal pulses.

Q. But that has nothing to do with any neurologic check to determine whether or not a subdural hematoma was forming in his --

A. Your question asked, did it have to do specifically with the subdural hematoma in the back. The statement does not apply to that. On the other hand, and this is an assumption of the statement that his peripheral arterial pulses were intact, which suggests that when the nurse or nurses checked his peripheral pulses that they were normal. That would involve at least feeling the

distal pulses. And to whatever degree while doing so they assessed his neurologic status of that leg, there may very well have been a neurologic assessment made.

Q. Well, that's sheer speculation, isn't it, Doctor?

A. That is sheer speculation, except for the one comment by the nurse who mentioned that the patient was moving all extremities in her nursing note.

Q. Do you consider that a neurologic check?

MR. TREU: Objection.

A. I think it's a statement of a neurologic condition.

Q. We won't get into the neurologic aspects of this case, because that's beyond your expertise, isn't it, unless you want to.

A. The specific questions you asked me to address were beyond my level of expertise.

Q. What did the echogram show, Doctor?

A. The echocardiogram performed on November 7, 1991 showed essentially no evidence of significant left ventricular dysfunction, valvular dysfunction, and there was the additional comment

that it was a technically difficult study.

Q. And what were the -- you mention in your report in the last paragraph on page 3 that the results of the lumbar puncture were known to the cardiologist. What were those results?

MR. MURPHY: Where on page 3? Where was that on page 3?

(Discussion off the record.)

MR. CUNNINGHAM: It's about 10 lines down the middle of the last paragraph, "The results of the lumbar puncture were known to the cardiologist."

Q. And my question is, what were those lumbar results?

A. They were the results of his lumbar puncture, specifically the cell count and chemistries.

MR. MURPHY: Do you want him to give you what the results were?

MR. CUNNINGHAM: Yes, whatever.

Q. The reason I'm asking you, Doctor, you say the results of the lumbar puncture were known to the cardiologist, but you don't tell me in the report what those results were. That's why I'm

asking you.

A. The results were a glucose of 66, a protein of 110, a xanthochromic appearance to the spinal fluid with a white blood cell count of 100 and a red blood cell count of 144,000. That was in Tube No. 1. And in the final tube of the collection, Tube No. 4, I don't have that here.

Q. When you read those results, what did this mean to you?

A. It meant to me that blood had gotten into the spinal fluid sample.

Q. Did it mean anything else?

A. No.

Q. So do I take it from that at least as you're telling me the result was that it didn't tell you anything more than that blood got into the sample?

A. If I look at the entire report, the glucose being in the 66 range, was at least within the normal range. There is no comment in this particular note whether a gram stain or other tests for infection were done at that time. But subsequent -- I could review that if you like, whether there were cultures done and what they

showed looking for evidence of infection.

Q. You mentioned in the sentence just before what I read to you, Doctor, that, "The lumbar puncture was technically difficult because of the patient's agitation and resulted in a 'traumatic' or 'bloody' tap." What do you mean by traumatic or bloody tap? What did you mean when you wrote that in your report?

A. Specifically that red blood cells were found in the spinal fluid, indicating that the tap was, again, the euphemistic phrase is "bloody." And that's what I meant when I wrote the sentence.

Q. When did you mean by "traumatic"?

A. As I went through the entire chart, it became clear that the attempted lumbar puncture was difficult because of the patient's confused and agitated condition. It appears from reading the notes that at least three attempts or roughly three attempts were made to obtain the spinal fluid; and that when the spinal fluid was finally obtained, there was blood in it. And that sequence we often call a traumatic tap, suggesting that a blood vessel had been entered or injured or nicked at the time of the attempted spinal tap allowing blood to

get in the specimen.

Q. By the needle?

A. Nicked by the needle, yes, sir.

Q. So it punctured a blood vessel?

A. Yes.

MR. TREU: He said "injured, entered, nicked."

Q. And I said so it punctured a blood vessel, and he said yes.

MR. TREU: That wasn't included in what he said.

MR. CUNNINGHAM: And I just paraphrased it, and he agreed with me.

Q. Would that be a blood vessel in a vein or artery?

A. There's no way I can tell from this whether it was arterial or venous.

MR. MURPHY: Dick, there's one thing that's a matter of record. I could point it out to him. He could change it now or later.

MR. CUNNINGHAM: Go ahead.

MR. MURPHY: That's why I brought it up with you. He referred to these findings of glucose of 66, et cetera, in the first tube. I

would direct him to the CSF sheet. That's not borne out by that.

Q. Why don't you read that too, Doctor.

(A recess was taken.)

Q. We're ready to go on the record, and you can read for the record where you're reading from.

A. I'm reading from the miscellaneous lab sheet entitled Cerebrospinal Fluid Profile, which specifically indicates that at the time of his lumbar puncture his glucose was **60**, his protein was 110 and that Tube 2 had 79,000 red blood cells and 100 white cells and was xanthochromic, while Tube **3** had **143,000** red cells and roughly 100 white cells and also was xanthochromic.

Q. What does that mean to you?

A. The same interpretation that I mentioned earlier, that red blood cells had entered the spinal tap specimen.

Q. How do we know, Doctor, when they said three attempts, is there any way to do the lumbar puncture -- I think it was shown that it started once at 5:30, once at **6:15** and once at quarter of 7:00. But, anyway, how do we know whether there was fluid obtained on one occasion, two occasions

or three occasions? Is there anything in the hospital records that would indicate where it says three attempts were done whether or not any fluid of any nature was obtained on the first attempt or second attempt or third attempt? We know fluid was obtained one time, and how would we know from the record when it was done?

A. From the records I reviewed, there would be no way I could answer that. It would be speculation on my part having performed lumbar punctures. But it would be purely that, speculation.

Q. What's your speculation?

A. My speculation is that the first two episodes at 1730 and 1815 hours were unsuccessful in obtaining fluid. Now, I don't know whether or not a spinal needle was employed to actually get into the spinal space at that time or if the patient at that moment was trying to be sedated or stabilized and they couldn't even attempt a spinal

and sequentially filled them, allowing for the numerical value of 2, 3, 4 assigned to the tubes. I suspect they got into the space and drained the fluid in one setting rather than repeated entering the space. But I emphasize that is pure speculation.

Q. Doctor, on the last page, page 4 of your report the first sentence reads as follows: "Routine post angioplasty evaluation included verifying the absence of bleeding at the site of the femoral artery catheterization and verification of continued adequate blood flow to the lower extremities." Does that statement have any relevance to the neurologic condition of the patient, or does it only go to the cardiac care?

A. That's very similar to a question you asked me a moment ago. And it would be my general assumption that the nurse or nurses who verified that he had adequate blood flow to his lower extremities in so doing had an opportunity to observe the neurologic status of his lower extremities.

Q. And there again we get into speculation?

A. Yes, sir.

Q. Have you testified often before? How often do you do this?

A. Well, not often. This is my second deposition.

Q. Ever?

A. Ever.

(Discussion off the record.)

MR. CUNNINGHAM: I think that's it, Doctor.

MR. TREU: Since I've adopted the doctor as an expert in the case as well, I'm not going to question him at this time.

(The deposition concluded at 3:00 p.m.)

DEPONENT'S ERRATA SHEET & SIGNATURE

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The original of the errata sheet has been delivered to Patrick Murphy, Esq. When the errata sheet has been completed by the deponent and signed, a copy thereof should be delivered to each party of record and the original thereof delivered to Richard T. Cunningham, Esq., to whom the original deposition transcript was delivered.

INSTRUCTIONS TO DEPONENT

After reading this volume of your deposition, indicate any corrections or changes on your testimony and the reasons therefor on the errata sheet supplied to you, and sign it. DO NOT make marks or notations on the transcript volume itself.

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PLEASE REPLACE THIS PAGE OF THE TRANSCRIPT WITH THE COMPLETED AND SIGNED ERRATA SHEET WHEN YOU RECEIVE IT.

COMMONWEALTH OF MASSACHUSETTS)

I, Carrie B. Thompson, Certified Shorthand Reporter and Notary Public in and for the Commonwealth of Massachusetts, do hereby certify that there came before me on the 24th day of August, 1995, at 1:30 p.m., the person hereinbefore named, who was by me duly sworn to testify to the truth and nothing but the truth of his knowledge touching and concerning the matters in controversy in this cause; that he was thereupon examined upon his oath, and his examination reduced to typewriting under my direction; and that the deposition is a true record of the testimony given by the witness.

I further certify that I am neither attorney nor counsel for, nor related to or employed by, any of the parties to the action in which this deposition is taken, and further that I am not a relative or employee of any attorney or counsel employed by the parties hereto or financially interested in the action.

In witness whereof, I have hereunto set my hand and seal this 25th day of August, 1995.

Carrie B. Thompson

Carrie B. Thompson, Notary Public
My Commission expires:
Massachusetts CSR No. 133003
May 18, 2001