IN THE COURT OF COMMON PLEAS

CUYAHOGA COUNTY, OHIO

DOC. 209

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JOSEPH E. DAVIS,

Plaintiff,

vs. Case No. 267797

UNIVERSITY HOSPITALS OF CLEVELAND, et al.,

Defendants.

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Deposition of IAIN H. KALFAS, M.D., F.A.C.S., a witness herein, called by the Plaintiff for cross-examination pursuant to the Rules of Civil Procedure, taken before me, the undersigned, Michael Christy, a Stenographic Reporter and Notary Public in and for the State of Ohio, at the offices of The Cleveland Clinic, 9500 Euclid Avenue, Cleveland, Ohio, on Thursday, the 3rd day of August, 1995, at 5:18 o'clock p.m.

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APPEARANCES:

On Behalf of the Plaintiff:

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On Behalf of the Defenddnt University Hospitals of Cleveland:

Arter & Hadden

BY: Kris H. Treu, Attorney at Law
and
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On Behalf of the Defendant Randy A. Lieberman, H.D.:

Jecobaon. Maynard, Tuschman & Kalur Co., L.P.A.

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IAIN H. KALFAS, M.D., F.A.C.S.

of lawful age, a witness herein, having been first duly sworn, as hereinafter certified, deposed and said as follows:

CROSS-EXAMINATION

BY MR. CUNNINGHAM:

Q. You pronounce your last name, is it Kalfas?
A. Kalfas, correct.
Q. All right.
You're a neurosurgeon?
A. Yes, I am.
Q. And you -- it's M.D., F.A.C.S.
What's that stand for, Doctor?
A. Fellow of the American College of Surgeons.
Q. And you were board-certified I see three years ago?
A. Yes.
Q. All right. Good for you.
Now, we're here today to learn a little about your report and a little about you, Doctor.
You have -- thcy havc given us your report, defense counsel on behalf of University Hospitals I bclicve.
What wcrc you asked to do?
A. I was askcd to review rccords of Mr. Joseph

Davis' hospitalization at University Hospitals of Cleveland in 1991 as well as some letters from Plaintiff experts and to give a rccommcndation as to whether or not the standard of care was met in the management of Mr. Davis.
Q. Okay.
And the rccords you reviewed are the --
A. The hospital records from University Hospitals --
Q. All right.
A. -- as well as Plaintiff expert witness letters as well as the deposition of Dr. Liebcrman.
Q. Okay.
And the expert report from the Plaintiffs consisted of a Dr. --
A. I havc a Dr. --
Q. -- McPherson?
A. - McPherson, I have a Dr. Saltis, I have a Dr. - I have Ms. Bums and I have a Dr. --
Q. cox?
A. -- COX.
Q. Okay.
Do you know any of those experts?
A. No.

I -- Saltis, I do know the name. I have met him before because he was at -- affiliated with my medical school, but I don't really know him personally.
Q. Okay.
He was a professor --
A. I believe so.
Q. -- at the time you were --
A. I think so.
Q. -- a student?
A. I think so.
Q. Okay.
Who asked you to do this work?
A. Mr. Trcu.
Q. And when did he ask you to do that?
A. I believe that was back in March of this year.
Q. Have you had any othcr dealings with the Artcr Haddcn firm --
A. Yes.
Q. -- as an expert?
A. As an expert, no.
Q. Okay.
I take it you've had somc dealings in some way with the Artcr Haddcn firm?

A. Some dealings, corrcct.
Q. As a client?
A. Yes.
Q. Okay.
I won't ask you anything more than that --
A. Okay.
Q. -- but they've bccn a client?
A. I've bccn a client of theirs.
Q. You've bccn a client of Artcr Haddcn?
A. Right.
Q. Can you tell me which lawyer has represented you?
A. Mr. Trcu has and Mr. Stan Williams.
Q. Okay.
Have you had any dealings with the Maynard Jacobson firm?
A. Not that I'm aware of, no.
Q. All right.
Have you had any dealings with any other defense counsel as an expert witncss?
A. Other than expert witncss for workers' compensation cases and personal liability, no.
Q. For workers' comp and personal?
A. Yes, primarily serving as an expert witness for paticnts of mine who arc involvcd in litigation on their part.
Q. Okay.
Have you testified before?
A. Yes.
Q. How many timcs?
A. I'd say probably about 15 to 20 times.
Q. Okay.
And what type of cases have you testified in?
A. Primarily the personal liability cases of patients of mine --
Q. Okay.
A. -- that I'm subpoenaed to appear before.
Q. So you have testified on behalf of the plaintiff?
A. Primarily as an expert witness for the patient --
Q. Okay.
A. -- that I've treated.
Q. Okay.
Have you testified on behalf of the defense before?
A. Not that I'm aware of, no.
Q. Is this the first time you've ever testified in a malpractice case?

A. Yes.
Q. All right.
A. As an expert witness for the defense.
Q. Yes.
A. Yeah.
Q. Well, have you testified as an expert witness for the plaintiff in a malpractice casc?
A. No.
A. One question I have --
Q. Sure.
A. -- is as far as testifying, I was involvcd in a casc that was brought against The Cleveland Clinic in which I testified, so if that counts as --
Q. Okay.
A. -- an expert witness, then I was involved with that particular case.
Q. were you a party to that casc?
A. I was a party in that case, correct.
Q. Okay.
What was the result of that?
A. The result was a Settlement.
Q. Settlement, okay.
What documents did you review before preparing your report?

A. Primarily --
Q. Just what you've told me hcrc?
A. -- the things that I've told you.
Q. Okay.
What other information did you get, if anything, receive, if anything, in preparing your report?
A. That's primarily it.
Just a description of what transpired from Mr. Treu, but basically most of the information I garnered words from the records that I told you about.
Q. Okay.
Did you refer to or rcad any medical literature in preparing your report?
A. No.
Q. Did you talk to any othcr doctors in preparing your report?
A. No, I didn't.
Q. Do you know any -- arc you aware of the othcr experts that arc going to be testifying on behalf of defense in this casc?
A. I don't know the namcs, no --
Q. Okay.
A. -- othcr than Dr. Licbcrman who I bclicve is

a Dcfcndant.
Q. Yes.
Do you know him?
A. No, I don't.
Q. Do you know any of the people that wcrc involvcd -- at University Hospital that were involvcd in the trcatmcnt and care of Joe Davis?
A. No, I don't.
Q. Any of the doctors?
A. Ido.
Dr. Mapstonc is a neurosurgeon thcre that I do know.
Q. Okay.
Did you know the ncurologist Katirji?
A. No, I don't know him.
Q. All right.
I may not be pronouncing his --
A. I still don't know him.
Q. -- name right and I won't try to spell it for you.
Okay. Doctor, lct's go to your report that's datcd March 23, 1995. I want to ask some questions as to that report.
First of all, we know that thcrc was a aucstion as to whcthcr or not -- at least a

question that University Hospital personnel had a to whether or not the person that's Joe Davis the patient had possible meningitis?
A. Correct.
Q. Alright.
What is meningitis, Doctor?
A. Meningitis is an inflammation of the meninges, which *are* a portion of the covering of the brain and the spinal cord and spinal canal.
When these meninges become infected, they can produce a whole host of complications and symptoms, one of which is confusion and agitation.
Q. Well, what type of meningitis Creates confusion and agitation?
A. All types --
Q. AI types --
A. -- can create confusion.
Q. -- can?
A. Yes.
Some will only present with headaches, some will prcscnt only with difficulty with sensitivity to light, some will prcscnt with only a fcvcr and some will present with confusion and agitation.
A lot of it depends on what the organism is, what the sensitivity of that particular patient is

and ssscntially the stage, the length of the disease process.
Q. Is lethargy a symptom of meningitis?
A. It can be.
Q. What is lethargy, Doctor?
A. Lethargy is a reduced level of consciousness that is associated with drowsiness or sleepiness.
Q. That is different than agitation thcn, isn't it?
A. Correct.
Q. And can stuporous or being in a stupor, can that be a sign of mcningitis?
A. Can be.
Q. Was lethargy found in the records of this patient?
A. I believe it was primarily confusion was the indication that they gave --
Q. Okay.
A. -- for the --
Q. So your answer is no?
A. -- for the meningitis.
Q. So your answcr --
A. Not that I can recall.
Q. All right.
Was a stuporous condition found --

A. Not that I can rccall.
Q. -- in this case in Joe Davis?
A. Not that I can rccall.
Q. Is stiffness of the neck, is that a sign of meningitis, Doctor?
A. Certainly can bc.
Q. Was that symptom found in Joe Davis?
A. Not that I can rccall.
Q. What about fever, Doctor; is that a sign also?
A. That can bc, yes.
Q. And was that found in Joe Davis?
A. Not that I can rccall.
Q. Chills, is that another sign?
A. That can bc.
Q. Can bc a symptom?
A. Right.
Q. And was that found?
A. Not that I can recall.
Q. Headaches?
A. Hcadachcs ccrtainly can bc and I don't recall --
Q. All right.
A. -- seeing that cithcr.
Q. What about nausea; can that bc?

A. Yes.
Q. And was that found?
A. No, not that I can rccall.
Q. So we know that symptoms of lethargy, stupor, stiff neck, fcvcr, chills, headaches and nausea, all signs of meningitis, none of those signs wcrc found, wcrc thcy?
A. corrcct.
Q. What is a Kcrnig's sign, Doctor?
A. Kcrnig's sign is clevation of the leg and neck with production of pain as a result of that mancuvcr.
Q. It's also flexion of the knee and hip, isn't it?
A. Right, cxtcnsion of -- raising the leg is esscntially --
Q. And that causes pain?
A. Right.
Q. And is that a sign or symptom of --
A. Certainly can bc.
Q. -- meningitis?
A. Yes.
Q. Now, Doctor, if you wcrc thcrc at that time making a diagnosis on Joe Davis, would those things be -- that I've just rcfcrrcd to; lethargy, stupor condition, stiff neck, fever, chills, headache and nausea, would those be signs that you would look for in determining whethcr or not Mr. Davis had meningitis?

MR. TREU: Objcction.
Go ahead.
THE WITNESS: Yes.
MR. CUNNINGHAM: All right.
BY MR. CUNNINGHAM:
Q. And if those signs, if you look for those signs, would you make a note of that in your diagnosis --
A. Yes.
Q. -- somewhere in the hospital records?
A. Usually.
Q. And wouldn't it be good mcdical practice that if you're looking for a diagnosis of meningitis to look for thosc symptoms?
MR. TREU: Objcction.
THE WITNESS: Yes.
BY MR. CUNNINGHAM:
Q. And you would also thcn if you look for thcm, you would put that in the rccords, wouldn't you?
A. Usually I would.

Q. Sure.
And you would also do a Kcrnig's sign, wouldn't you, test?
A. Personally I have not done that.
Q. You've ncvcr done one?
A. I have done it, but I don't do it recently because I don't -- I'm not a big believer of it.
Generally the paticnt will declare it themself without the need to do a Kcrnig's test.
In other words --
Q. Well, if --
MR. TREU: Hold on. Let him finish the answer, Dick.
MR. CUNNINGHAM: Okay, all right.
THE WITNESS: In other words, the patient that presents with clear-cut meningitis is not going to need a Kcmig's sign to makc thc diagnosis.
The lack of a Kernig's sign or the presence of a Kernig's sign itself is not necessarily indicative of a meninges process.
BY MR. CUNNINGHAM:
Q. But esscntially if it was positive, that would be an indication?

A. If it was positivc in the prcscncc of thcse other factors --
Q. Other signs?
A. -- then that certainly could, but you asked me if I would do it.
I probably havc just not really paid much attention of it and, therefore, have not done it.
Q. Now, Doctor, there was some indication that the patient was in confusion for othcr reasons, other than a possible mcningitis, wasn't there?
A. Correct.
Q. What were the --
A. I bclievc there was a qucstion of anoxic enccphalopathy.
Q. And what *are* thc symptoms of that?
A. Well, you can havc confusion and disorientation associated with that.
Q. And agitation?
A. You can havc agitation.
Q. Doctor, wherc was this diagnosis made in the hospital, do you know?
A. I don't, no, not off thc top of my head.
Q. Well, do the hospital records tell where thcy -- where it was made?
A. Yeah. thcy probably do.

Q. Was it in the room?
A. I can probably look through it.
Q. Okay.
MR. TREU: what's thc qucstion; where --
MR. CUNNINGHAM: where it was madc.
MR. TREU: wherc was what madc?
MR. CUNNINGHAM: Where thc diagnosis was madc.
THE WITNESS: I bclicvc he was brought into thc cardiac intensive care, so I presume that's wherc this diagnosis was made --
MR. CUNNINGHAM: okay.
THE WITNESS: -- but I just can't recall a particular note.
MR. MURPHY: Arc you referring to the diagnosis of anoxic enccphalopathy or you just --
MR. CUNNINGHAM: *Yes.*
MR. MURPHY: okay.
MR. CUNNINGHAM: whcre it was madc in thc hospital.
MR. MURPHY: I didn't know

which diagnosis you were talking about.
MR. TREU: I didn't either.
MR. CUNNINGHAM: Oh, all right.
BY MR. CUNNINGHAM:
Q. Now, Doctor. if there had been no suspicion of meningitis at all --
A. Uh-huh.
Q. -- would a lumbar puncture have been done --
A. If the there was no --
Q. -- in this case?
MR. TREU: Objection.
If you know.
THE WITNESS: Probably not.
MR. CUNNINGHAM: *Yeah.*
BY MR. CUNNINGHAM:
Q. They had already done a cat scan, hadn't they?
A. Right.
Q. And what was the purpose of doing that cat scan?
A. To rule out any intracranial cause for the confusion.
Q. All right.
So from the records, do they show that the

only -- at least from your review of the records show that the only reason they were doing a lumbar puncture was to determine whcthcr or not thcre was mcningitis?
A. I bclicve so, simply bccause the CT scan had showed primarily only a small lacunar infarct in the right inner capsule which in and of itself would not explain the confusion.
So they were, to the best of my knowledge as far as just reviewing the records without having been there, doing an LP to search for a source of confusion.
Q. You of course as a neurosurgeon, you've done quite a few --
A. Many.
Q. -- lumbar punctures I would imagine?
A. Right.
Q. And is that the field or an expertise that a neurosurgeon or a neurologist would --
A. Well, generally anyone *can* really -- any physician *can* do a lumbar puncture.
The technique in doing it is probably similar to doing a drawing blood or putting a central venous catheter in.
It's not something that you're going to

allow a layperson to do, but certainly someone who's a physician and is capable of using their hands can do a lumbar puncture.

Q. Well, you're not going to allow a nurse to do it, are you?

A. I do know nurses that have done this before, so it's certainly not something that is beyond that.

I generally when I'm having a patient of mine undergo a lumbar puncture, one of my residents, anywhere from a first, second or third-year resident is usually doing the lumbar puncture but, no, I have not had a nurse do it before.

Q. Well, if a nurse has done it, has the nurse done it under supervision of a physician, Doctor?

A. I don't know.

Q. I guess I'm just trying to compare that with the drawing of blood.

A. Right.

Q. In the drawing of blood --

A. Well, I'm just --

Q. Just a moment.

A. Sure.

Q. Seems the drawing of blood seems to be a

much simpler task than doing a lumbar puncture.

A. Well, having done both, I can tell you I probably have more difficulty drawing blood than doing a lumbar puncture.

Q. Okay.

Well, in doing a lumbar puncture, that could create a problem with the spinal cord, could it not, if you don't do it right?

A. Not with the spinal cord.

It can create a problem with the spinal cord if it's done higher. The spinal cord ends --

Q. At the --

A. -- at the upper lumbar region, particularly the L1-2 level.

Generally lumbar punctures are done down below at the L3-4 level. so not cause a problem with the spinal cord directly.

In this case it causes a problem indirectly by contributing to the formation of a hematoma.

Q. But a lumbar puncture from a person not knowing where to put it in, if they put it in higher than L3-4?

A. Certainly if they had a lumbar puncture up in the midthoracic region they could directly cause injury to the spinal cord.

Q. Paralysis?

A. Right, paralysis or incomplete deficit.

Q. Now, in the training of a person who had a lumbar puncture, what training is done, Doctor?

Have you taught?

A. Yes.

Generally at least in my -- the way I learned was I watched someone do one and then I was supervised to do one and then I was doing one.

Q. And where was this at, Doctor?

A. This was at primarily here.

I did -- I watched several while I was at Akron City Hospital as a medical student, but did several while I was a resident here at The Cleveland Clinic.

Q. Okay.

Who do you know down at Akron City Hospital that you watched?

A. Oh, geez, off the top of my head I can't recall. It was probably one of the residents.

Q. Well, was it?

A. Yeah, a resident down there.

Q. But you don't remember?

A. No.

It was probably 14, 15 years ago.

Q. Oh, all right.

Let's go through the procedure of lumbar puncture for a moment, Doctor.

What type of needle is used?

A. Generally it's called a spinal needle and essentially it's just a long needle that has a beveled end on it, beveled so that it separates the fibers of the dura and the ligamenta flava rather than tearing the dura.

It's a blunt needle, it's anywhere from 20 to 22 gauge in size and it has a stylette down through the middle so that as you put the needle in through the muscles and soft tissues and the ligamenta flava you're not occluding that opening with muscle and fat and whatever.

Then once you get into where you feel the spinal fluid is, you can remove that stylette and hopefully get the free flow of spinal fluid.

Q. Okay.

Doctor, in doing a lumbar puncture, how much recordkeeping is done in a hospital?

A. When I did them -- and that's really all I can speak for -- I simply noted 'Lumbar puncture done. Six cc.'s obtained," maybe write the opening pressure if I took the pressure and maybe

describe the color of the fluid.
Q. How would we know in this case, Doctor, as to the type of needle that was used, that is, the gauge?
A. I don't think you'd -- at least I never noted what gauge needle was used.
Q. Certainly isn't shown in these records, is it?
A. Correct.
Q. How would we know, Doctor, whether a stylette was used?
A. Well, I don't know of any other way but using a spinal needle to do a CSF, so I guess I'm presuming that a spinal needle was used and that comes with a stylette.
Q. Now, Doctor, what is the -- from a patient's point of view before getting a lumbar puncture, what instructions or discussions are given to the -- are given to or with the patient?
A. Generally that we are obtaining spinal fluid for whatever reason, that we will numb up a portion of the skin over the lower lumbar region. we're going to ask them to assume a position either curled up on their side or sitting up bent forward over a table, that they will essentially

feel the Novocaine going in, they'll feel burning as a result of that, but after that they really should not feel that much pain; if they do, please notify us, we'll give you more Novocaine.
That's real the extent of my discussion of an LP with patients undergoing this.
Q. And what about the movement of the patient; what do you tell the patient to do?
A. Oh, afterwards the only thing I'll do is just maybe have him lie down for four to --
Q. No.
Before you begin the lumbar puncture, what do you tell the patient about being still and quiet?
A. Oh. Just it's kind of assumed in the discussion, but if there is any agitation obviously we'll take the necessary precautions, for instance, getting several people to help hold the patient down to be able to get a quiet field in order to do the lumbar puncture; but very rarely will I have to tell the patient to remain still. It's more assumed in an individual.
Q. Have you ever taken a spinal puncture of a patient that was moving around, was agitated?
A. Yes.

Q. And they had to be held down?
A. Yes.
Q. Have you ever taken one of a patient that was already strapped to the bed?
A. No, because we have to unstrap them to put them in a fetal position on their side in that particular case.
Q. Right.
Do you know how the lumbar puncture, in doing the lumbar puncture in this case, as to what movement the Plaintiff was going through at the time that the lumbar puncture was being performed?
A. I think Dr. Lieberman's testimony stated that he was sitting leaned over a hospital table with Dr. Lieberman in front of the patient and I think it was a Dr. Cerino doing the lumbar puncture from behind.
Q. All right.
Which is the preferred method, Doctor, from your end -- from your point of view; doing it where the patient's in a -- lying on his side or her side in a fetal position or sitting up on the edge of the bed?
MR. TREU: Objection.
That assumes there's a preferred way.

Go ahead.
THE WITNESS: Doesn't make any difference to me. Whatever's comfortable for the patient.
MR. CUNNINGHAM: Okay.
BY MR. CUNNINGHAM:
Q. Now, Doctor, what do the records show as to what took place in the doing of this lumbar puncture procedure?
A. Apparently I think it was November 8th, if I'm not mistaken, an attempt was made I think at 5:30 p.m. that was unsuccessful, I think another 45 minutes later a second attempt was made --
Q. What --
A. -- that was unsuccessful.
Q. When was the second attempt made?
A. I believe that was 45 minutes later, so approximately 6:15 p.m.
Q. Okay.
A. And then finally at 6:45 a third attempt was made and fluid was obtained.
I believe the reason for obviously the multiple attempts, number one, they were unable to get it the first two times; and number two, the delay was to allow the patient to calm down and

give him a little break from the assault on his lumbar spine.
Q. Do the records indicate who was in the room?
A. I believe from Dr. Lieberman's testimony, he and Dr. Cerino and then I think two resident and I'm blanking on their names.
A Dr. Woo maybe and a Dr. Kerchynski.
I don't know if I'm pronouncing that correctly.
Q. Do you know those two residents, of what rotation they were in?
A. No, I don't.
Q. Do you know what year they were in?
A. No, I don't.
I think Cerino was a second-year resident that was rotating in the cardiac care, but I don't know what the other two were.
Q. You're not certain if he was first-year or second-year?
A. I believe in the testimony of Lieberman he talked about him turning -- becoming a second-year resident in July of '91; and since this was in November of '91, I presume at that time he's still a second-year resident.
Q. All right.

Doctor, if they were having this difficulty at three times to do that and this was your patient and you were -- would you want to be apprised that the first attempt and then the second attempt and then going into a third attempt, would you want to be apprised of that before they tried the second and third attempts?
A. Not necessarily, because I've been in that position myself and I know that putting a needle in involves placing the needle through a depth of tissue which can be anywhere from three to six inches in depth first of all.
Number two, you're trying to place this needle into a very small window between the lamina above and the lamina below, so many times what you're merely doing is hitting bone with the needle.
So it is not uncommon and I've certainly had the situation myself where I've backed off, gone back in and obtained fluid on the second or third attempt.
So if I direct my -- if your question is whether or not I direct my residents to tell me if that's -- no, I don't.
Certainly if there's any untoward event after the lumbar puncture I want to know about that; but as far as the number of attempts, no, I've never told them to tell me and I've never really asked them about that.
Sometimes I hear it from the patient; but to answer your question, no, I would not expect them to notify me if they're not -- if they're still having some problems.
If they get to a point where they're just unable to, I'm sure they would call me.
I've never been in that position.
Q. How far is the needle -- how far does the needle invade the body to where --
A. The needle invades the body from the surface of the skin down to the level of the lamina, through the ligamenta flava, which is also at the level of the lamina, through the dura, into the thecal sac where the spinal fluid is.
That distance depending on the size of individual will vary anywhere from three to six inches, to a grossly obese individual you might have to use an extra-long needle.
Q. And how do you know when you've -- when you have entered far enough to get the fluid?
A. Generally you can feel the bone.

You can walk it down the bone and you can essentially feel it pop into a little soft tissue space and then by removing the stylette you will hopefully see the free flow of spinal fluid.
Q. There's like a give that you feel?
A. Yes, you certainly can feel that.
Q. Then when you feel the give, then if there's a -- at that point you remove the stylette?
A. And hopefully you'll see spinal fluid.
Q. You'll see spinal fluid?
A. Right.
Q. Now, Doctor, what happens if you go too far?
A. If you go too far, you *can* go through the other side and you go -- actually go through the thecal sac and not get any flow of spinal fluid.
You would probably know that because you know that the needle being that size, if you're in to the hilt in a very thin person you've probably gone too far. You're either off to one side outside the spinal canal or you're through the spinal canal.
Q. Uh-huh.
A. Those are the two things that would happen if you went too far.
Q. Can the needle go into the subarachnoid

area?
A. Subarachnoid space.
Q. space?
A. The subdural spacc at that point at the level whcrc a lumbar puncturc is usually done is where you want to bc. That's whcrc the spinal fluid is.
It's beneath the arachnoid, which is immediately bcneath thc dura, and that's essentially whcre you want to be.
You want to bc in the subarachnoid space.
Q. Okay.
If it is done propcrly, would you evcr get a bloody tap?
A. Certainly could.
Q. And how would that happcn?
A. By cithcr getting a vcin or an artery that runs through thc thccal sac, either along a nerve root.
The nerves -- csscntially what will happen is generally it's vcry difficult to picrcc a nerve.
Occasionally you'll brush up against it and that individual might fccl sharp pain going down their leg; but if there's a vcsscl that's running

along thc coursc of that particular nerve, a vcry small-caliber vcsscl, theoretically that vessel can bc injurcd by the nccdlc passing in thcrc.
So yes, you can -- cvcn though you get a corrcct tap, you can get -- or corrcct placement of the needle, you can get a bloody tap.
Q. Well, how often would you get a bloody tap out of 10 lumbar puncturcs?
A. Out of 10 that I've donc, I would say maybc onc or two I will get a bloody tap.
Q. So 20 percent of thc time?
A. 10 to 20 pcrccnt of thc time and, ycah, you try to shoot for a clear-cut tap, but a lot of it is just not only skill, but also a little bit of luck too and --
Q. Well --
A. -- I've done taps whcrc I've gone in on the first pass and gotten blood back, so it's -- thcrc's a little dcgrcc of luck involvcd in doing thcsc taps.
Q. Would you say thcrc's a lot of skill and a little bit of luck?
A. Right.
Q. Is that how you --
A. Correct.

Q. So a person that doesn't have the skill that you would have, the chances of getting more bloody taps than you would be greater?
MR. TREU: Objection.
THE WITNESS: I don't know if it would be or not.
It's -- as I said, tight now at my stage in my carecr I'm doing very few lumbar punctures.
My residents probably have more experience in the last three or four years in doing lumbar punctures than I do, so at this particular point I have more experience, yet I feel more comfortable probably with them doing it tight now.
I *can* certainly do a lumber puncture, but certainly my residents in the second and third-year level *are* currently capable of performing good lumber punctures.
Q. Do you know what experience Dr. Cerino had in doing this lumbar puncture?
A. I don't know the numbcr of lumber puncturcs he had, no.
Q. So you would not agrcc with the statement or would you agrce with the statement that a bloody tap can be avoided if done properly?
A. You can do a bloody -- you can do a lumbar

puncture properly and still get a bloody tap.
Q. So true or -- true or -- true or false?
A. I gucss basically --
Q. A bloody tap can be avoided if done propcrly.
True or false?
A. False.
Q. Okay.
When did this bloody tap occur, do you know; the first, sccond or third time?
A. Well, thcy didn't get any spinal fluid or blood on the first two, so I presume that it was the third try at 6:45 p.m. on November 8th.
Q. And what werc the results of the lumber puncturc?
A. Well, he had blood in the -- in the spinal fluid, and I don't know off the top of my head exactly what the cell count was or the white blood cell count.
1118, do you have that?
MR. TREU: I don't know.
Was it in the progress notcs or in the --
THE WITNESS: Usually they'll put it thcrc, but I don't have a lab report here.
Off the top off of my head I don't know --

BY MR. CUNNINGHAM:
Q. Well --
A. -- other than --
Q. -- take a moment and look at the records.
MR. TREU: I have the labs. Is that a good place to look?
THE WITNESS: yeah.
Just checking the date here.
Cerebrospinal fluid; color of the spinal fluid red, clarity cloudy.
BY MR. CUNNINGHAM:
Q. What are you reading, Doctor?
A. I'm reading a lab report from the University Hospitals and --
Q. What date?
A. I'm looking for the date here. 11/8.
In 11/8/91, out 11/11/91 and I can't - you know, just from the xerox here -- and it is poor xerox --
MR. TREU: It's a bad copy
THE WITNESS: See if they have it in the -- in the notes here. Keep that open there.
MR. TREU: Okay, sure.

Progress notes.
MR. MURPHY: There's an 11/9 progress note 3:15 a.m. that has the results I think of the CSF.
THE WITNESS: "Status post LP."
MR. TREU: There you go.
THE WITNESS: okay.
Lab CSF: Glucose 66, protein 110, diff/cell count xantho, x-a-n-t-h-o. Xanthochromic means it's cloudy.
WBCs and -- white blood cell count is 100, RBC Count is 144K, meaning 144,000.
MR. CUNNINGHAM: Okay.
BY MR. CUNNINGHAM:
Q. Now you're reading from the patient's notes, Doctor?
A. I'm reading from a -- I don't know who signed this.
I don't know if this is Lieberman or not. It's in the progress notes of the patient.
Q. Okay.
Now, does that correlate with the lab report that you were reading from?
A. Well, since it's a poor xerox copy I can't

tell.
Q. Can you find that?
A. Do you have that?
MR. TREU: (Handing.)
THE WITNESS: Glucose 44, protein 110.
This is reading from the printed hospital record, and again I can't read the red blood cell count or the white blood cell accurately off this xerox copy.
MR. CUNNINGHAM: Okay.
BY MR. CUNNINGHAM:
Q. Doctor, if the only symptoms this person Joe Davis had of confusion and agitation, would you have ordered a lumbar puncture?
MR. TREU: Objection as to what he would or wouldn't have done. It's not the issue in the case -
BY MR. CUNNINGHAM:
Q. You can answer.
MR. TREU: - but go ahead.
THE WITNESS: Well, retrospectively, probably not.
I can't fault someone, though, for in a

situation where we have a confused patient and a relatively unremarkable CT scan, at least a CT scan that only shows a lacunar infarct in the internal capsule without any other explanation for a mental status, it's hard for me to argue with someone who's aggressively trying to pursue the source of this individual's confusion.
BY MR. CUNNINGHAM:
Q. Well, you're not telling me that you would order -- merely on the symptoms of confusion and agitation that you would order a lumbar puncture?
A. You certainly could.
Q. In every case?
A. Not in every case.
I take it into the context of what that individual has presented with and how confused they are and what the other studies, radiographic and lab studies look like at that particular time.
So for me to do a lumbar puncture, I do not have to have that whole constellation of symptom that we went through earlier or else I'd be -- wouldn't be doing lumbar punctures in anybody.
Q. Well, Doctor, based upon the records as you read them up to the point that this lumbar puncture was ordered --

A. Yes.
Q. -- would you have ordered a lumbar puncture in this case?
MR. TREU: Objection.
THE WITNESS: Retrospectively, no.
BY MR. CUNNINGHAM:
Q. Let's forget the retrospective for a moment. Looking back, because we know that there was no meningitis --
A. Well --
Q. -- but you yourself back there, I'm asking you first -- this is discovery. I can ask him this question.
A. sure.
Q. You're a good doctor.
I want to know as to if you were there attending to Joe Davis on November 8th and you had those records and you had what you have in the hospital record, would you have ordered a lumbar puncture in this case.
MR. TREU: Are you -- wait a minute.
I don't know what your answer is going to be, but I just want to point out the fact that he

docs not -- Dr. Kalfas did not review the Aultman records so I don't know to what extent those come into the picture.
Just so that's on the record.
MR. TREU: Go ahead.
THE WITNESS: Retrospectively I would say no.
I have to say retrospectively since I wasn't there, number one, I would not make a decision to do a lumbar puncture based simply on someone's notation.
I would examine the patient myself and make a decision there.
Since I wasn't there, I have to say retrospectively, no, I wouldn't.
MR. CUNNINGHAM: All right.
BY MR. CUNNINGHAM:
Q. So I take it what you're telling me, that just looking at the records there without examining this person you would not have done it?
A. Probably not.
Q. All right.
Now, in your report you mention the second paragraph, the last statement -- the last sentence of that second paragraph, Doctor, you got that?

A. Yes.
Second paragraph --
Q. Last sentence.
A. Okay.
Q. "He then stated that Heparin could be started following the lumbar puncture."
A. Correct.
Q. Now, what was the purpose of starting Heparin at that time after the lumbar puncture?
A. In looking at the record, I thought that they were kind of between a rock and a hard place obviously having done a lumbar puncture but also having an individual who had a cardiac problem that would have eventually required Heparin.
Q. Well, the records indicated as to when he was going to have his angioplasty, didn't it?
A. Uh-huh.
Q. And it was -- when was it initially scheduled for?
A. I don't know when it was initially scheduled for. I know when it was done.
Q. Well, going through an angioplasty, you don't begin Heparin until several hours before the operation; isn't that right?
A. For angioplasty?

I'm not familiar with the timing there.
Q. Okay.
So you don't know that?
A. No.
Q. Well. if the -- why would the neurologist be the one that's ordering Heparin following a lumbar puncture?
A. I don't know other than I don't *think* he's ordering it; he's simply saying start -- that the Heparin can be started following the lumbar puncture.
Q. Well, isn't that an order?
A. No.
MR. TREU: It's a recommendation according to the consult note.
BY MR. CUNNINGHAM:
Q. Well, why would a neurologist be recommending the starting of Heparin after the lumbar puncture?
A. I can only presuppose that he was in discussion with the people taking care of Mr. Davis, but I have no idea why --
Q. Okay.
A. -- he would mention that at that time.
Q. Well, from a neurologist's point of view or

a neurosurgeon's point of view, would doing -- within your field, Heparin wouldn't enter into your recommendation, would it?

A. Depends on the situation.

I've never ordered Heparin immediately following a lumbar punctum.

Q. Well, why would any neurologist order Heparin following a -- or even recommend Heparin following a lumbar puncture?

A. I don't know.

I'm only saying that in this particular instance I can only presume that he was asked to specifically comment on that but, again, that's just a supposition on my part and I don't know simply because I was not there and I don't have all the facts available to me by having been there.

Q. Well, certainly Heparin wouldn't have anything to do with the treatment of the spinal system --

A. Absolutely not.

Q. -- or the brain or anything else, would it?

A. Absolutely not, unless we're dealing with a stroke --

Q. Yeah.

A. -- or a nonhemorrhagic stroke.

Q. Now, Heparin of course is an anticoagulant, isn't it?

A. Correct.

Q. If you had been there at that time on November 8th after a bloody tap had been done, would you have ordered or even recommended the use of Heparin?

MR. TREU: Objection.

THE WITNESS: NO.

BY MR. CUNNINGHAM:

Q. Why not?

A. 'Cause that's not my area of expertise.

Q. Okay.

A. I'm not -- if you're asking me would I recommend it in association with a suspicion of meningitis, no.

Q. Well, what are some of the complications that can happen following a lumbar puncture, Doctor?

A. Lumbar puncture can be associated with, if someone does not have an infection, of introducing an infection into either the spinal fluid or to a disk space if a disk space is entered with a contaminated needle.

If a patient has a brain tumor or brain abscess with raised intracranial pressure and a lumbar puncture is done from below, that can result in herniation and even death of a patient.

That's why usually a cat scan is obtained prior to a lumbar puncture.

You can have a hematoma as a result of a lumbar puncture.

Q. What type--

A. Those are --

Q. -- of hematoma would that be?

A. You can have either an intradural hematoma, an epidural hematoma, subarachnoid hematoma all in all three layers from the thecal sac out.

Q. When you were doing a lumbar puncture or when you had done lumbar punctum, is that one of the complications that you could anticipate and look for?

A. You could.

It's extremely rare. I've never seen it, but certainly it's something that you could -- if you asked me to list all the possible complications, that's a possibility.

Q. Well, that's a known complication, isn't it?

A. Sure.

Q. It's in every textbook at least I've read; I imagine every textbook that you've read on lumbar puncture?

A. Not every textbook.

Q. But on the procedures when you read the textbooks and manuals and articles on performing a lumbar puncture, that's one of the known complications that's pointed out?

A. Yes.

Q. Isn't that right?

A. (Nodding up and down.)

Q. Spinal hematomas around the spinal area --

A. Right.

Q. -- where the lumbar puncture takes place?

A. Right.

Q. Now, how was that caused or how does the hematoma -- what -- how does that happen?

A. You can injure a vessel on a nerve root. you can injure a vessel in the epidural space.

Those are primarily the most common causes of either epidural or subdural hematomas.

Q. That would be then a bloody tap?

A. It can result in a bloody tap.

Q. All right.

Now, a bloody tap is a term that's used not

they?
A. Correct.
Q. Did you notice in the deposition of Dr. Liebcrman he had never heard of a bloody tap?
A. Correct.
Q. Did that surprise you?
A. To a degree.
Q. In your third paragraph, Doctor, of your report again, the last - next to the last sense sentence you say "This is termed a traumatic lumbar puncture"?
A. Corrcct.
Q. And that's what -- another term for that is a bloody tap?
A. A bloody tap can be one of those things.
It can be a traumatic tap or it can be due to an intracranial subarachnoid hemorrhage.
The two can -- nced to be differentiated, because if I get bloody fluid back on the spinal fluid in an individual who I felt the tap went fairly well, then I have to dctcrmine whcthcr or not this is secondary to inadvertent injury to a vessel in the subdural or epidural spacc or if blood was prcscnt in the spinal fluid before I

Q. Now, Doctor, if you had been the attending neurologist for Joe Davis at that time and you knew that there was a bloody tap and that they started him on Heparin the next morning for angioplasty, what procedure monitoring-wise would you have ordered or directed the staff to look for?
MR. TREU: Objcction.
That assumes he would have ordered any monitoring.
THE WITNESS: Okay.
BY MR. CUNNINGHAM:
Q. Let me say if - would you have made it -- would you have made some orders?
A. Probably not.
I certainly can say retrospectively you can say "Check leg function every four to eight hours," but having never bccn in that position of starting Heparin after a lumbar puncture I probably would not have done it.
Same thing with --
Q. You would not have done what?
A. Would not have written for some monitoring.
As I said, retrospectively certainly you could argue that that should have bccn the case

even got therc.
Q. And in this case it was the former, wasn't it, Doctor?
A. It appears to be the former traumatic tap.
Q. An inadvertent injury to a blood vessel?
A. Correct, correct.
So that's the difference bctwccn a traumatic tap and a bloody tap.
Q. Okay.
A. A bloody tap is more all-inclusive.
A traumatic tap is more specific.
Q. Now, Doctor, do you know why the suggestion to give Heparin after -- following the lumbar puncture was not carried through at that time?
A. I don't know why.
Q. It wasn't, though, was it?
A. It doesn't appear to be, no.
Q. Okay.
Now, as shown in the fourth paragraph of your report, that intravenous Heparin was starred the next morning at 7:00 a.m.; is that right?
A. Correct.
Maybe been 7:00 o'clock. My last review shows it may have bccn around 8:00 o'clock, but roughly in that window of timc.

here, but retro -- but if I had been in that position I probably would not have ordered monitoring of his leg function.
Q. Why not?
A. Just would not have crossed my mind to do that.
Q. Well, we know, Doctor, that a known complication of a lumbar puncture is a hematoma; isn't that right?
A. Correct.
Q. And especially, of course, if it's a bloody tap, right?
A. Correct.
Q. Now, when you combine that with the use of Heparin which is an anticoagulant, a blood thinner, wouldn't that multiply this problem of having a hcmatorna?
A. Well, the reason I say that is that a known complication is a hematoma. It's a very rare known complication, very rare.
I've never written monitoring orders in any patient I've had a lumbar puncture performed in.
Q. Doctor, have you --
A. Having --
Q. Go ahcad. I don't mean to interrupt you.

A. Having not donc -- placed someone on Heparin aftcr a lumbar puncturc, I'm mcrcly saying that if I wcre in that situation I probably would not havc ordcrcd monitoring following that.
Q. Well --
A. Now, retrospcctivcly I can say that probably wouldn't have been a great idca, but you asked me would I have donc that and I'm honestly telling you --
Q. All right.
A. -- probably not simply because I've never donc it in a setting of just doing a lumbar puncturc.
Q. Well --
A. Hematoma is a know complication, but I've never seen it in the ovcr 200 lumbar puncturcs that I've sccn.
Q. Have you evcr bcen involvcd in a case wherc a lumbar puncturc resulting in a bloody tap happens and thcn the patient is givcn Heparin like thcy wcrc giving?
MR. TREU: Wait a minute.
THE WITNESS: No.
BY MR. CUNNINGHAM:
Q. In this casc of Joe Davis, have you cvcr

bccn in a situation likc that?
MR. TREU: Whcn?
MR. CUNNINGHAM: Any.
MR. TREU: When was the Hcparin givcn? At any timc?
MR. CUNNINGHAM: The samc as happcncd hcrc.
MR. TREU: 12 hours --
MR. CUNNINGHAM: Ycah.
MR. TREU: -- 14 hours?
MR. CUNNINGHAM: Right.
THE WITNESS: That's what I said.
Since I've nevcr bccn in this position, I probably -- it probably would not have crossed my mind to do that with the statcmcnt that I made carlicr that I've ncvcr written monitoring ordcrs in anyonc who I've donc a lumbar puncture in.
In fact, a numbcr of patients that I've done lumbar puncturc in havc bccn as an outpatient and thcy go home following their lumbar puncture.
Retrospectively, ycah, if I evcr am in that situation knowing what I know about this case, ycah, I'd probably havc thcm monitor his lcg function; but if I wcrc in this situation having

never written monitoring ordcrs for a patient of mine undergoing a lumbar puncture and now I havc this setting, I probably would not have done that.
BY MR. CUNNINGHAM:
Q. Well, what type if you're going to do some -- let's assume it happens today, all right?
A. Uh-huh.
Q. Now, you're the neurologist and you end up with a bloody tap and the person's going in for an angioplasty and they start Heparin 13 hours after the bloody tap.
What would you do today?
MR. TREU: Objection.
THE WITNESS: In that casc I'd -- knowing what I know now, I'd just have thcm take -- check his feet -- foot function and leg function maybe on an every four hours.
BY MR. CUNNINGHAM:
Q. That's all you'd ask them to do?
A. Uh-huh. Yeah.
Q. Are there any other neurological checks you can do to dctcrmine whether or not that --
A. well, YOU --
Q. Let me fmish.
A. Okay.

Q. -- to determine whether or not a hematoma is forming?
A. I suppose you can check rectal tone every two to four hours.
Q. Check what?
A. Rectal tone, inserting a digit into the patient's rectum --
Q. A finger?
A. -- for function.
Exactly.
Q. Sphincter function?
A. Sphincter function.
Q. Yeah.
A. You can certainly monitor sensory function, but I'm not as concerned about sensory functions as I'm a motor function.
So if I get an individual I can see those toes wiggling, that's good enough for me from a neurosurgical standpoint.
Q. Doctor, by the time that they -- in this case wasn't it a fact that by the time they determined, you know, that when Joe Davis' legs weren't moving, by that timc it was irreversible paraplcgia, wasn't it?
A. No.

Nothing's irreversiblc until a year out aftcr trcatmcnt.

If you present initially at one point in timc with paraplegia, there's no way you can classify that as irreversiblc.

You need two points in time.

Generally about a year out when we do dccomprcssion of nerve roots or spinal cord I'll tcll my patients that we're going to did decompress this, we're going to take the pressure off the nerves and we're going to see if this nerve or spinal cord will recover; and then what I'll tell thcm is how you are at one year after this procedure, after this decompression is generally how you're going to be here on out.

So if they have any deficits at one year out from my surgery or my procedure that I've done to dccomprcss thcir nerves or spinal cord, at that point in time I'll probably tell thcm this is irreversible damage.

But looking at a point in time immediately at the onsct of the paraplegia and classifying it as irreversible I don't think -- I don't agrce with anyone who would say that that is irrcvcrsiblc.

Q. Wcll, was the dccomprcssion surgery successful?

A. The decompression surgery was succcssful at removing the hematoma.

Q. But not all the hematoma was removcd, was it?

A. The hematoma that could be removed.

It's just like removing a tumor. You're not -- you never complctcly remove a tumor. thcrc's always microscopic portions.

It was successful in satisfactorily dccomprcssing the neural clcments in the spinal canal.

Q. At the time that Mr. Joe Davis was discharged from the hospital, what do the records reflect as to his paraplegic condition?

A. Hc was still paraplcgic.

Q. All right.

Arc you aware of his condition today?

A. No, I'm not.

Q. If I wcrc to tcll you that hc is permanently paraplegic today and hc's bccn permanently paraplegic since -- hc's bccn paraplcgic since the hematoma formed --

A. Uh-huh.

Q. -- there's been no change in his paralysis, if I were to tell you that, would you agree that his paraplegia would be permanent?

A. It's permanent given that definition, correct --

Q. Yeah.

A. -- but it's not permanent at the time of discovery.

Q. Now, in your last paragraph, Doctor, you say "I feel that the hematoma was related to the lumbar puncture and the Heparin therapy"; is that correct?

A. Correct.

Q. I take it from that you're saying -- I think we're agreeing on this -- that, number one, that the hematoma resulted -- directly resulted from the lumbar puncture and the Heparin therapy?

A. Correct.

Q. All right.

Now, had the lumbar puncture never bccn done in this case, that he just went in for the angioplasty, had his operation and came out, would Joe Davis have any paraplegia today?

A. Probably not.

Certainly spontaneous hemorrhages are

possible, but I've never seen one and I would classify in as extremely rare.

So to answer your question, probably not.

Q. Like snow in July, right?

A. Very similar to that.

Q. Okay.

Have you ever heard of the term laminectomy checks?

A. I've probably heard of it in the past, but I think it's a more arcane term these days.

Q. Done by older neurosurgeons?

A. I don't know.

I may have drawn it out of my past there, but I do plenty of laminectomies and I've nevcr referred to anything as a laminectomy check.

Q. Well, you've heard of the term neurological checks, haven't you?

A. Yes.

Q. Okay.

A. I presume they're one and the same.

Q. All right.

What neurological -- if you were going to monitor Joe Davis if this happened today and you say "Oh, I now see what can happen --"

A. Uh-huh.

Q. "-- and I'm going to do somc neurological checks," tcll mc again what neurological checks you would do.
A. I would primarily bc interested in moving his feet and his bending his knees.
That to me as a neurosurgeon is going to tcll mc more than testing pin-prick sensation over a kneecap or the dorsum of the foot.
Q. Wcll, how would you determine muscle strcngth?
A. Basically I want to dctermine if that individual has antigravity function in their legs, in othcr words, thcy can raise thcir knee and they can just wiggle thcir feet and basing that on a scale of 1 to 5; with 5 being normal, 4 being able to resist forcible resistance on the motor group tested, 3 being able to lift the leg off the bed but not being able to resist a force applied to that musclc group, 2 and 1 being trace movcmcnt of that musclc group.
That's how I'd monitor it.
Q. Would you do patella and ankle reflexes?
A. I personally wouldn't.
I couldn't fault anybody for ordering that, but pcrsonally I wouldn't because it really

docsn't -- it's not a sensitive indicator of what's going on.
Q. And would you do an anal sphincter?
A. I probably wouldn't bccausc, again, I'm going to get more information primarily from just motor cxamination.
Q. What about lack of scnsation, othcr tests for lack of sensation?
A. Probably not.
Q. Wcll, aren't -- isn't lack of scnsation and muscle strength for movcmcnt, aren't both of those symptoms of hematoma forming on the spinal cord?
A. Oh, thcy ccrtainly arc.
I'm just telling you as a neurosurgeon what I would do and wouldn't do --
Q. Yeah.
A. -- and basically what I would focus on is primarily thc motor examination.
Am I going to do a complete neurological cxarnination on an individual like in this setting every two hours? Probably not, because it's going to bc a low yicld.
I'm going to do -- primarily I want to know what those lcgs arc doing from a motor standpoint.
Q. What do you mean a low yicld, Doctor?

A. Low yield, in othcr words, testing someone's scnsory function is not going to give me a scnsitivc indicator what is going on with his lower portion of the spinal cord and the cauda equina, the nerve roots that come out off the end, lower end of the spinal cord.
What's going to be more important to me and what's going to bc an indicator of whcther or not I need to look for something to operate on is not numbness in the lcgs.
I'm not - very rarely going to recommend any surgery for numbness in the legs. I'm more concerned about motor function and what someone's legs *are* doing from a motor standpoint.
Q. Wcll, Doctor, if laminectomy checks and neurological checks would have been done in this case, would the hematoma been able to be determined much earlier than it was determined?
A. Well, I mean, my problcm there is determining when the hematoma developed, number one, and when it was identified.
The earliest that I can really find it identified is the patient saying at approximately -- at least from a note here in the progress notes that "Hey, my legs aren't moving,"

and the -- that's the earliest that I can find any indication of when that hcmatoma bcgan.
I don't have any other indication of where -- when thc hematoma started simply because I don't havc anything to compare it to.
I don't have an MRI performed at noon that day to show that there's no hematoma there or that there is a hematoma therc.
So the only thing I really have to go on in drawing that conclusion is the paticnt at least noting in a note at 4:00 o'clock on I think it's the 10th that he's having trouble moving his legs.
Q. Well, certainly. Doctor, neurological checks would have indicated a hematoma far before the paticnt himself says "I can't move my lcgs," wouldn't it?
A. It ccrtainly could.
Q. I mean, that's the whole purpose of neurological checks, isn't it?
A. Certainly could.
You're presuming, though, that this is a gradual onset of symptoms.
If you have an acute onset of symptoms, then no, it wouldn't.
If you have an acute onset of a hematoma

that produces acute onset of motor deficit, then no, it's not going to show it any carlicr.
Q. Doctor, you don't think this was an acute onsct of symptoms --
A. I don't know if it was.
Q. -- at 3:00 o'clock?
A. I don't know.
Q. Wcll, the records don't support you in that, do they?
A. Well, the records don't support anything clsc cithcr other than a hematoma developed, it was first notcd at 4:00 o'clock in the afternoon and that's all I have to go on.
Q. Well, a hematoma can either be unclotted blood or clotted blood, right?
A. Corrcct.
Q. And this was clotted blood, wasn't it?
A. Clotted at the time of the operation?
Q. Yeah.
A. Right, but you can't assume that a hematoma develops at the time a bloody tap is obtained.
Everybody in this case is assuming that that's whcn the hematoma began. That's not necessarily the casc.
Now, I have ncvcr seen a bloody tap turn into a symptomatic hematoma, so at the very earliest wc're talking about combining the fact that he had a bloody tap with the fact that he's now on Heparin 13 or 14 or whatever hours latcr so, ycah, it certainly can be an acute onset.
Can I prove that? Of course I can't, but I can't prove the other way either.
I'm simply saying I don't know and I don't think anyone else is qualificd to say that they do know on this.
Q. What was the effect of the Heparin in this casc on causing the hematoma?
A. I think the combination of the bloody tap with the Heparin certainly led to a -- the fact that he had a hematoma; and whether or not this resulted in a breakdown of a clot, which is unusual with Hcparin bccausc Hcparin usually does not break down a clot or a thrombus, or whcther or not it just prevented the timely repair of an artery or a vein that had been injured by the needle is another possibility, the fact of the matter is I don't know and I'm not qualified really to comment on coagulation cascades and what the timing of a clot formation and what the effects of Heparin on a clot are, but my -- my basic knowledge of Heparin is that it does not generally dissolve clots, it ccrtainly can allow for the development of a hematoma and I presume it's by either failure of an intimal tear in an artery or a vein to heal itself or by somehow just allowing a slow leak to eventually produce a hematoma.
Q. So you're saying that you don't have the expertise to tell, do you, Doctor, to give an opinion as to when the onset of this hematoma began?
A. Exactly.
Q. Is that what you're telling me?
A. I've had - looking at the records, I can't tell when it started.
I can only note that the - at 4:00 o'clock on the 10th the patient said "My legs aren't moving" and --
Q. All tight.
A. - that's what I have to go on.
Q. Now, on the first paragraph of page 2 you say "On November loth, the nursc's note at 8:00 a.m. indicated that Mr. Davis was moving all extremities"?
A. Correct.
Q. Can you find that for mc?
A. Okay.
8:00 o'clock, "Alert, oriented to person, place and time."
Q. Wait.
Go a little slower so can he take it.
A. Okay.
This is under Neurological Status on the CICU baseline assessment, a nurse's note, and this is dated 11/10/91, time 0800 by a person named I want to say Bass, B-a-s-s.
Under Neurological Status he or she writes "Alert, oriented to person, place and time. Slept for long periods, easily arousable. MAE," which in our jargon stands for moves all extremities, "right knee immobilizer."
I prcsume that was for the fact that he had had a catheterization; and then under that, "Skin Integrity: Right groin site stable. Slight," and I can't read what it says after that.
"Sandbag in place." I presume that's a sandbag on the groin to put some pressure on the the site of the catheter.
Q. Let's get -- I want to get a copy of this so we can mark that as an exhibit.

A. Okay.
MR. TREU: You don't havc it?
MR. CUNNINGHAM: well, I got the --
THE WITNESS: Show you what it looks likc.
BY MR. CUNNINGHAM:
Q. I know what it looks likc. I just want to mark it so we don't havc any qucstion as to what you're reading.
A. Okay.
Q. Maybe you can find it in hcre, Doctor, while I'm --
MR. TREU: 111 do that. You guys go ahcad.
THE WITNESS: Okay.
MR. CUNNINGHAM: okay. Let me see if I have another.
THE WITNESS: I was reading down hcrc.
MR. CUNNINGHAM: Okay.
Just a momcnt. We're going to mark this, and this is a Bates stamp 000135, the rccords I --
MR. TREU: Is that on ours?
BY MR. CUNNINGHAM:
Q. K-a-l --
A. Pardon?
MR. TREU: - f-a-s.
MR. CUNNINGHAM: - f-a-s, Kalfas No. 1.
(Thcreupon, Plaintiff's Exhibit 1 of the Kalfas Deposition was marked for purposes of identification.)
BY MR. CUNNINGHAM:
Q. Doctor, if you would circle what you had read which is where you're getting the information to say that on Novcmbcr 10th the nursc's notc at 8:00 a.m. indicated that Mr. Davis is moving all extremities?
And would you initial that?
A. I did.
Q. Okay.
Both -- okay,
A. Up top too --
Q. Yeah, uh-huh.
A. -- and down below.
Q. Thank you.
Now, Doctor, the second sentence of the same paragraph you say "The ncxt pertinent nurse's note occurs at 8:45 p.m. on November loth," and what is that, Doctor?
A. "There is a preoperative note that states that Mr. Davis was found flaccid in both lower extremities at '1530 today,'" and "1530 today" is in quotes.
Q. Well, no, but you say the next pertinent nurse's notc occurs at 8:45.
Oh, I see. 8:45 p.m. on November loth?
A. Right.
Q. And that's what you're reading?
A. Right.
Q. Okay.
And can you find that for mc?
(Thereupon, a discussion was held off the record.)
THE WITNESS: Here it is.
Okay, "11/10/91, 2045 Preop - Patient discovcrcd flaccid in lower extremities bilateral at '1530 today.' Taken for stat MRI revealing epidural/thecal," t-h-e-c-a-1, "hematoma causing spinal cord compression. No other changes to --" can't read her writing, and I think the person's name is M-a-y.
MR. CUNNINGHAM: Okay.
(Thereupon, Plaintiff's Exhibit 2 of the Kalfas Deposition was marked for purposes of idcntification.)
BY MR. CUNNINGHAM:
Q. And would you circle -- I've now marked that. It's, by the way, fax - or Bates number 000138 and Plaintiff's Exhibit No. 2 - Kalfas Exhibit No. 2.
A. (Indicating.)
Q. Maybe red would be better, Doctor.
A. Oh, okay.
Q. Yeah. Okay.
Doctor, in the page 2, the next -- third paragraph from the bottom, the large -- the long paragraph where it says "The question is," you state in the third - fourth sentence "In my experience with spinal surgery and procedures to decompress the spinal cord in similar settings --"
A. Okay.
Q. "-- I can state with a reasonable degree of mcdical probability that earlicr identification of this problem by a few hours would most likely not

change the outcome in this case."

Whcn you mention a few hours, what are you talking about, Doctor?

A. Oh, I've operated on people five, six hours, four hours after the onset of symptoms without significant improvement of their complaints, their symptoms.

Q. Well, have you opcratcd on others where they -- it was a different result?

A. I have opcratcd on some people at one, two days, three days.

In fact, I operated ycstcrday on an individual who's had weakness for six weeks and that person is now improved, so there's -- it can go either way.

Q. Wcll. here we're not talking about just weakness; we're talking about paraplegia --

A. Uh-huh.

Q. -- which is now -- which is permanent.

A. Right.

Q. All right.

So the -- as I understand what this hematoma did was to form a pressure around the cord and Cut off -- cut off the function of the cord?

A. The circulation --

Q. The circulation?

A. -- to the cord, right.

Q. Right.

Now, how can you say that a few hours wouldn't have mattered?

A. Because I've opcratcd -- through my expcricncc I guess is the only thing 1have to refer to, that my experience in -- particularly in individuals who have complete neurological dysfunction, paraplegia or quadriplegia, what I will tell my patients is that the chance for improvement is vcry slim no matter bow quickly we get to them.

Q. Wcll, Doctor. if at the time you operate and the cord is already damaged and there's no - how do you know when that cord bcgan the damage to be irreversible or irreparable?

A. As I mentioned earlier, you don't.

Q. Okay.

So that's speculation on your part?

A. Exactly.

Q. All right.

A. I'm simply going by previous experience.

Q. All right.

And a few hours means what; one hour, two hours, 10 hours?

A. Either of those. Any of those.

Q. 24 hours?

A. 24 hours is obviously getting a little bit further out on the course of several, you know, more days.

Q. Okay.

So you're really not giving that within a degree of medical probability, are you, Doctor?

MR. TREU: No. Wait a minute. Let's clarify --

THE WITNESS: Yeah.

MR. TREU: - what you're talking about. I think you guys are talking two differcnt languages hcre.

THE WITNESS: Right.

What arc you saying I'm not giving with medical probability?

BY MR. CUNNINGHAM:

Q. Well, because you make the statement "I can state with a reasonable degree of medical probability that earlier identification of this problem by a few hours most likely would -- would most likely not change the outcome --"

A. Corrcct.

Q. -- of this case" --

A. And I agree with that based on my expcricnce with a similar setting.

Q. I thought you just told mc earlier that's pure speculation on your part.

A. Paraplegia --

MR. TREU: That's misleading. Wait.

THE WITNESS: No, that's not what I said.

Paraplegia. my statements that I give to patients regarding their prognosis, patients who have a paraplegia is that they *are* very unlikely to improve with surgery urgent or delayed.

We will certainly go ahead and give them the benefit of the doubt and decompress them in the hopes that they may be in a very small percentage of patients that may improve, but my experience with paraplegia is that when I decompress them, very few of them end up becoming less than paraplegic.

BY MR. CUNNINGHAM:

Q. Wcll, Doctor, lct's go to cases such as Joe Davis whcrc you've had a hematoma forming in the spinc and cutting off the function, the

circulation in the spinc.

Now, that's differcnt at least to getting to the paralysis than someone being in a car accident or a diving accident or those types of things, isn't it?

A. No.

Q. Well, now, I havcn't had as much experience, but I've dealt quite a bit with quadriplegics from a layman's point of vicw or lawyer point of view.

A. Uh-huh. Depends on the context that you're asking the question.

Q. All right.

But if you have, for example, a diving case in which a person is -- dives and hits the bottom of a pool --

A. Uh-huh.

Q. -- now, in many of those cases that's a permanent quadriplegia suddcn -- brought on suddcnly by the time of the impact of the head and spine with the bottom of the pool.

A. It can be and so can --

Q. Right.

A. -- a hcmatoma be suddcn and acute.

What I'm merely saying is that the source of the symptoms is related to the same whcthcr or not

it's a diving injury, a hcmatoma or a tumor.

It's occlusion of blood supply to the spinal cord and the nerves with subscqucnt loss of function at that lcvcl of the spinal cord or of the nerves.

Q. At somc point -- but the hcmatorna docsn't form suddcnly, docs it?

A. It ccrtainly can.

In fact, trauma, hitting your head on the bottom of the pool can produce a hematoma that suddcnly causes paraplegia or quadriplegia.

Q. You think the hematoma in this case formed suddcnly?

A. I said before I have no idca whcthcr it formcd suddenly or not.

I'm simply saying that it can form suddenly and having no time period to compare this to I can't make a decision whcthcr it formed suddcnly or not.

Q. Wcll, let's take hypothetically for a momcnt, Doctor, this hcmatoma formed ovcr a constant period of hours.

In other words, the blood vessel was -- wc got a bloody tap, thcrc was an inadvcrtcnt damaging of the blood vcsscl --

A. Right.

Q. -- resulting in a bloody tap and then they started infusing him with Heparin.

Now, let's assume for this purpose that the blood started forming in the -- pouring into the area of the trauma and it comes like a spigot and it constantly goes --

A. If it comes like a spigot, it's going to produce symptoms right at the time the Heparin Starts.

Q. A drip, drip, drip, drip then so at some point you build up enough blood that you're going to have pressure there on the cord; and when you have enough pressure on the cord you're going to have paraplegia, aren't you?

A. Correct.

Q. Now, if that's a constant - let's assume for a moment that that was constant.

Then it would matter whethcr it - you discovered it three hours earlier or five hours earlier or eight hours earlier, wouldn't it?

A. Not necessarily, because paraplegia is going to be very rarely corrected by an operation performed at three hours, five hours or five months.

Q. Doctor, if you know the hematoma is down there before the paraplegia takes effect, can't you do surgcry and remove the hematoma?

MR. TREU: How do you know that?

THE WITNESS: First of all, you wouldn't know that.

Second of all, you wouldn't do it based on -- we have many patients who have an MRI that show a hematoma.

I'm not treating an MRI. I could care less what the MRI shows.

I take the MRI findings in the context of the symptoms that the patient presents to me.

So if I get an MRI of Joe Davis and it shows a hematoma at that level of the spinal tap but he's having no neurological dysfunction, I'm not recommending surgery.

Q. What are you going to do?

A. I'm just going to follow it; and if he should happen to develop symptoms, then I would readjust my approach, but just because an MRI shows a hematoma docsn't mean I'm going to do surgcry.

Q. Okay.

A. I'm treating a patient; I'm not treating an MRI.

Q. All right.

Lct's say then he starts to develop symptoms, Doctor, so that he develops symptoms hcre at 8:00 a.m. in the morning or 7:00 a.m. in the morning instead of wailing 'til 3:00 o'clock in the morning.

Arc you saying that thcrc can be no surgical procedure to -- just a moment. There could be -- you can object after I'm finished.

MR. TREU: I will. I'm waiting.

MR. CUNNINGHAM: Okay.

MR. TREU: I haven't said a word.

BY MR. CUNNINGHAM:

Q. There can be -- there can be -- it's nonverbal communication.

MR. TREU: I see.

MR. CUNNINGHAM: All right.

BY MR. CUNNINGHAM:

Q. Thcrc can be no surgical procedure to prcvcnt the paraplcgia from occurring?

MR. TREU: Objection to

the hypothetical sincc thcrc's no foundation for it sincc we know that the patient was moving all his extremities at 8:00 a.m. and in fact may well have been moving his extremities after that period of timc based on othcr documentation in the chart.

So based on that I will object to the hypothetical.

Go ahcad.

BY MR. CUNNINGHAM:

Q. Okay.

Now you go ahcad and answer the question.

A. Hypothetically if an individual is presenting with onsct of symptoms and -- of course I would go ahead and obtain an MRI to find out what the source of the symptoms were; and if thcrc was a radiographic abnormality that correlates with that individual's symptoms, I'd consider an opcration to corrcct thosc abnormalities if that was feasible.

So that's the best way I can answer your question.

Q. Well, let mc try a different way for a moment.

If you would havc learned through neurological checks or otherwise that a hematoma

was forming that would produce paraplegia, if you would have learned that early enough, could you have prevented the paraplegia?

MR. TREU: Objcction to -- what is early enough?

MR. CUNNINGHAM: Doesn't matter. Just early enough.

MR. TREU: It doesn't matter?

THE WITNESS: well, first of all, if I'm looking at one point in time, I don't know if that hematoma is going to be causing paraplegia.

I'm making a dccision based on that particular point in time, basically the radiographic studies associated with the clinical deficits and symptoms at that time, and I don't know at that time whether or not it's going to go on to paraplegia.

There have been a number of times where I do have an individual who had, say, some mild neurological deficit, some mild weakness.

They may not be medically stable enough to undergo an emergent surgery at that time. In those instances I have elected to follow that

patient and not rush right in and remove a tumor or a fracture or hematoma that has developed, so it's really a judgment call and I'm not trying to be difficult; I'm just trying to -- trying to --

MR. CUNNINGHAM: Okay.

THE WITNESS: -- let you know that it's an individualized approach that's tailored to a particular patient's problem.

BY MR. CUNNINGHAM:

Q. Let's take Joe Davis right now.

Now, you know Joe Davis' condition --

A. Right.

Q. -- from the hospital records. All right.

Now, let's assume that you knew early enough or the medical staff knew early enough that a hematoma was forming that would produce the paraplegia.

Is there anything medically that could have been done to have prevented the paraplegia from happening?

MR. TREU: Objection.

I don't know what in the world you mean by early enough to know that a hematoma was developing.

BY MR. CUNNINGHAM:

Q. Go ahead.
A. As I said earlicr, it's difficult – thcrc's no way you can predict that a hcmatoma is going to causc paraplegia so we're really talking retrospectively hcre.
There's no way that I can predict what a mass lesion is going to do, so just because somconc has a tumor or a fracture fragment or a hematoma in their spinal canal that may produce the dcficits, I don't know at that particular point in time and I'm going to use my best clinical judgment at that particular point in time for that particular patient to make a judgment as to what needs to be donc at that time, surgcry or no surgcry if surgery is an option.
Q. Doctor, have you cvcr had a case yourself in which a pcrson was in a situation like Joe Davis in which through neurological checks you discovered that, say, thcrc is a hematoma forming and thcrc's a potential out thcrc for a paralysis to set in and you'rc going to operate and you go ahcad and opcratc, rcmovc a hcmatoma and stop him from having paraplcgia?
Have you evcr been in a casc likc that?
A. I can't answcr yes or no, bccausc I don't

know if I would have stopped him from having paraplcgia.
As I say, I'm not being difficult. I just cannot prcdict what would or would not have happcncd if I had removcd the hematoma.
I have been in a situation whcre I have seen a neurological dcficit dcvelop, a hematoma form following an opcration and gonc in and removed that hcmatoma and had a rcvcrsal of thosc dcficits, but that paticnt was not paraplcgic and that's the critical difference bctwccn that type of setting and the setting that Mr. Davis is in whcrc paraplcgia essentially involves a much more severe injury to the spinal cord.
Not ncccssarily irreversible, but ccrtainly carrying a lesser prognosis than someone who maybc has a mild foot drop or some scnsory dysfunction.
Q. Time out. Lct's try it again.
We're talking past each other, all right, and Ict mc say -- Ict me makc sort of a statement bcforc so you know whcrc I'm coming from --
A. Okay.
Q. -- and I don't think you'rc saying to mc that if you know that someone you can -- that a situation like Joe Davis, that if you know that --

if you would have known that paraplegia could have happened if the hematoma would have kept forming to the point that it put pressure – so much pressure on the cord that you would have had permanent paraplegia like we have here, you're not telling mc I don't think that 'Well, we can't do anything about it and it's just going to happen" or – you're not telling me that, are you?
A. I'm not telling you that.
Q. All right.
A. I'm simply saying --
Q. You're not telling me the Cleveland Clinic, if I came up here with a hematoma forming --
A. If you're paraplegic or quadriplegic --
Q. I'm not paraplcgic.
A. – you're going to get surgery.
Q. Okay. No, wait.
A. I'm simply going to tell you and your family, though, that you may not see a satisfactory improvement of your paraplegia.
Q. I'm not saying I'm coming up hcre -- the patient's coming up here to you before they're paraplcgic. They're coming up with a problcm.
A. Right.
Q. All right?

And you do the neurological checks and say "This fellow has a hematoma forming in his spinal area and the neurological checks that we're doing is showing that there's – that the hcmatorna is pressing -- beginning to press on the cord" --
A. Uh-huh.
Q. "-- but there's no paraplcgia."
A. See, you --
MR. TREU: wait, wait, wait, wait.
Objection, because those facts have nothing to do with this case since we know that seven and a half hours before this man's paraplegia developed, that he was moving all his extremities, so your – your hypothetical makes no sense --
MR. CUNNINGHAM: Okay.
MR. TREU: – in the context of the facts of this case.
MR. CUNNINGHAM: Just make your objection. You can make your objection.
THE WITNESS: I guess the problem I'm having with the hypothetical situation is you're describing a dynamic process when I don't know if we can really do it.
When I look at an MRI, when you're looking

at this MRI and describing this hematoma forming, that implies a dynamic process. That's not the case.

An MRI identifies a specific point in time and the way to describe it is there's a hematoma there.

BY MR. CUNNINGHAM:

Q. Okay. Let's stop.

A. It ain't forming, it ain't dissolving; it's there.

Q. Let's stop right there.

A. That's why I can't -- let me just finish.

That's why I can't say that this is going to be something that is going to develop.

Now, if you tell me you got an MRI here and you got an MRI here and there's two hematomas and the one later on is bigger --

Q. Bigger?

A. -- then I can agree with you and say "Yeah, looks like it's forming," and many times we'll do that.

We'll do serial MRIs to quantify the dynamic process here; but looking at a single point in time --

Q. Could that --

A. -- you can't say that it's forming.

Q. Could that have been done in this case?

A. Could that have? Certainly.

Anything could have done in this case.

Q. He could have had serial MRIs --

A. He could have. It wouldn't --

Q. -- after -- once the Heparin was started on?

A. Sure, he could have.

Q. Yeah.

A. Could I have ordered it? No.

I have to have an indication for ordering an MRI and just a clinical suspicion of a hematoma forming based on, "Gee, it might form because I did a bloody tap 13 hours ago and now I'm giving Heparin" would not be enough to make me order another MRI.

It's simpler and certainly less expensive just to see how the patient's doing.

Q. Don't you think if neurological checks would have been done in this case, that the formation of the hematoma would have been caught earlier than 3:00 o'clock on -- 3:00 or 3:30 on the 10th?

MR. TREU: Objection.

THE WITNESS: If the hematoma occurred before 3:30 it may have, but I don't know

if it did or not.

The only thing I have to go on is the patient saying "My legs aren't moving."

I know at 8:00 o'clock he's alert and oriented and I've never seen a patient who's alert and oriented who's not moving their legs who hasn't told me "Hey, I'm not moving my legs."

So presuming worst-case scenario that at 8:00 o'clock we have a nurse's note that says he's moving all extremities and then there's no nurse's note after that. presuming, giving you the benefit of the doubt, that the paraplegia started at 8:01, I find it inconceivable that Mr. Davis being alert and oriented as noted in the nurse notes would not have mentioned something between 8:01 and 4:00 o'clock when it was finally mentioned to a nurse.

BY MR. CUNNINGHAM:

Q. What neurological *checks* were done on Joseph Davis during the time period of November 8th, 9th and 10th?

MR. TREU: Do you want him to go through the entire chart and tell you that?

MR. CUNNINGHAM: He can tell me. That's a simple answer. I think he can tell you that.

THE WITNESS: It's not a simple answer --

MR. TREU: No, it's not.

THE WITNESS: -- because it involves multiple points in time.

MR. TREU: It involves all kinds of places in this chart.

BY MR. CUNNINGHAM:

Q. Well, you've read the chart, haven't you?

A. Of course I read the chart, but I haven't memorized the chart.

Q. Okay.

Well, let's take five minutes so can you look at it.

A. Okay.

Q. I don't *think* it will take you that long.

A. You want all neurological examinations?

Q. Yeah.

Let's begin, if it would make it easier for you, Doctor, after the beginning of the Heparin --

A. Okay.

Q. -- so that would be after the angioplasty.

If you want to write them down --

A. No, I'll just make a note here.

Q. Okay.

A. Okay. I got the 11/9.
The Hcparin was bcgun on 11/9, corrcct?
Q. It was bcgun on 11/9, 7:00 a.m. --
A. Yeah, I'm just looking for --
Q. -- so you can start at 7:00 a.m. I gucss.
A. On the 9th?
Q. On the 9th.
A. All right.
The first neuro exam I have listed here is on 11/10/91 at 0750.
Q. What is that?
A. "Ncuro: Alert; better time orientation, computation better."
I can't read the writing here. Something "better. Motor intact, extraction improved.
11/10/91, "Ncuro - Slightly improvcd."
Q. 11/10 what time?
A. It doesn't have a time.
11/10, 4:00 p.m. "Cross-coverage."
That's when he said cannot move lcgs and then his motor cxam at that time flaccid, "No response to Babinski. Reflexes plus 1.
"Scnsory: Scnscs hip joint movement otherwise --"
Q. That was aftcr?

A. That was after -- paticnt said "'Cannot move Icgs, '" in quotations.
Scnsory level at -- it says qucstion "sensory level at L1. No scnsation to touch. Consult neuro."
Q. Okay.
A. Thcn wc havc neurology on call 11/10, 1700.
"Exam: Alert, oricntcd -- alert, speech normal.
"Motor: Zero out of 5 bilateral lowcr extrcmities with fasciculations. Left calf decreased tone, 5 minus out of 5 upper extremities.
"Scnsory: Decreased pin prick, joint position sense, light touch."
I'm using --
Q. Whcn was that donc?
A. That was at 11/10, 1700.
Those scnsory dcficits arc bclow L-1 level bilaterally csscntially referring to the legs.
"Negative cremasteric bilaterally," that's an abnormal reflex in the -- or that's a reflex that should be prcscnt in the lowcr extremities that is not in this casc.
Q. Now, thosc arc scnsory exams?

A. Right.
"Positive anal wink," meaning he has intact --
Q. Sphincter?
A. -- sphincter, "Positive abdominal reflexes," and that's the end of the neuro exam there.
They talk about the --
Q. Well, it appears that that exam was done in 1700 on the 10th, Doctor --
A. 1700 after the onset of the paraplegia.
Q. -- and --
A. I'm sorry.
I simply read through the neuro exams --
Q. Yeah.
A. -- from the time that the Heparin was Started.
Q. But at least at that point they were doing -- at that point they were doing some sensory exams, weren't they?
A. At that point they're primarily documenting where he's at, at that particular point.
Q. Ycah, and doing a scnsory exam?
A. At that time, ycah,
Q. And also reflex exams?
A. Right.

Q. Do you see -- I had seen in the hospital, other than doing somc push-pulls that E noted, I didn't see any push-pulls or any ncurological exams on the -- on October 10th up until the time that he stated at 1500 hours that he couldn't move his legs.
Did you notice any?
A. No.
The only thing I noticed was -- at 8:00 a.m. was whcn they had "Moves all extrcmities," and then nothing after that.
Q. Okay.
A. As I mentioned in my note hcre, the only other note being at 8:45, the nurse's note saying that at 1530 he was found flaccid with - in both lower extremities.
Q. What was that?
A. I was just referring to the neuro exam.
Q. What was --
A. Wcll, he did - he was having pulses checked, pedal pulses checked, but you wcre specifically asking me about the neurological examination --
Q. Yeah.
A. - and that gcncrally is not part of the

neurological exam.
He had other portions of the examination --
Q. Yeah.
A. -- but I only mentioned the neurological examination.
Q. But even if you're paraplegic, you do the pulses, you'd still have those, wouldn't you?
A. Oh, sure.
Q. That doesn't change the fact?
A. No, not at all.
That's why I didn't mention it.
Q. Yeah.
Doctor, let's -- we'll get through hopefully quickly now.
I wanted to go through the reports that you said you read of the Plaintiff's experts.
A. Okay.
(Thereupon, Plaintiff's Exhibit 3 of the Kalfas Deposition was marked for purposes of identification.)
BY MR. CUNNINGHAM:
Q. I'm going to hand you what's been marked as Kalfas Exhibit No. 3 which is Dr. McPherson's report.

MR. MURPHY: Let me just note an objection as to any questions regarding Dr. McPherson's report. At this point in time it's still up in the air as to whether he will or won't be an expert.
MR. CUNNINGHAM: Yeah. All right.
MR. TREU: I'll join in that.
BY MR. CUNNINGHAM:
Q. Okay.
You've read that report, Doctor?
A. Yes.
Q. Let's go through the report.
The first paragraph, it's the same reviewing the medical records.
Those are the same records you reviewed of University Hospital --
A. I presume so.
Q. -- of Joe Davis from 11/6/91 to 11/21/91?
A. I presume so.
Q. The next paragraph, "Mr. Davis was transferred to University Hospital on November 6th, '91 in the early evening from Aultman Hospital and came with a diagnosis of cardiac

arrhythmia," do you agree with that?
A. Yes.
Q. Okay.
The third paragraph, Doctor, "From my review of Mr. Davis' medical records, the following important neurological data is as follows: Upon admission on November 6th, 1991, Mr. Davis was lethargic," will you agree with that?
A. I would agree, yeah.
Q. And "His neurological cognitive function progressively worsened," would you agree with that?
A. Yes.
Q. And he states on "November 9th. '91 he was oriented only to himself and not to time or place."
Would you agree with that?
A. Yes.
Q. In the next sentence, "Later that day he was agitated," agree?
A. Okay.
Yes.
Q. "Mr. Davis was treated with Valium," would you agree with that?
A. I don't know, but I'll have to take his word

for it.
Q. "On November 8th, '91, he was disoriented to place and time"?
A. Again I don't know, but I'll take his word for it.
Q. "These neurological cognitive assessments were performed prior to his neurologic assessment on November 8th, 1991," do you agree?
A. Okay. Yes.
Q. Now I want to go to the fourth paragraph and I'll read the sentence and with the question do you agree or don't agree.
A. Okay.
Q. "On November 8th, '91, neurological consultation was performed, and a decision was made to perform a lumbar puncture and to initiate Heparin."
A. Do I agree with that; is that what you're saying?
Q. Yes.
A. "To initiate Heparin," I think a recommendation for Heparin was made, but I don't think the neurologist was the one to start the Heparin.
Q. Okay.

A. The note merely said "May start Heparin."
Q. The next sentence, "That lumbar puncture required three attempts and was described as a traumatic lumbar puncturc."
A. correct.
Q. Mr. Davis was treated with aspirin beginning Novcmbcr 7th, '91 until November 9th, 1991."
A. Correct.
Q. "Heparin was instituted on Novcmbcr 9, 1991."
A. Correct.
Q. "On November 9, '91, Mr. Davis underwent an emergency PTCA."
A. Corrcct.
Q. "On Novcmbcr 10, 1991, at approximately 1500 hours, Mr. Davis complained of inability to move his lcgs."
A. Roughly 1500, corrcct.
Q. "An emcrgcncy MRI of the lumbar spine was performed, and this confirmed a large hematoma at T12-L1 with inter --" pronounce that for mc.
A. It should bc "intrathecal."
Q. Intra, right, "intrathecal component at L3 through the sacral levels."
A. Correct.

Q. "An unsuccessful neurosurgical dccomprcssion was attempted."
A. Wcll, the dccomprcssion was successful, the results were not, so I gucss it's semantics, but I'll -- you know, I'll grant him -- 1'11 grant -- I'll agree with that.
Q. "Mr. Davis remained paraplegic postoperatively."
A. Correct.
Q. The ncxt paragraph, "The following are my mcdical opinions bascd on a reasonable degree of mcdical certainty: 1. Based on review of Mr. Davis' mcdical rccords, there was no clear indication for a lumbar puncture on November 8th, 1993."
A. I don't necessarily agrcc with that.
Q. You don't necessarily disagree?
A. No, I don't agree -- I don't agree with this particular statcmcnt.
Q. Okay.
A. I was trying to bc polite.
Q. Wcll, don't bc polite.
A. Okay.
Q. "Mr. Davis was admitted to University Hospital on Novcmbcr 6th, '91 confused requiring restraints."
A. Correct.
Q. "On November 7th, '91, he was struggling against restraints and appeared confused."
A. Corrcct.
Q. His agitation on November 7th, 1991 required not only physical restraints but also the use of Valium."
A. Correct.
Q. "There was no febrile episodes."
A. Correct.
Q. "However, there was clear evidence of anoxic episodes suggestive of an anoxic encephalopathy as well as disorientation secondary to his hospitalization in the coronary care unit."
A. I don't know if you can make a clear-cut diagnosis of anoxic encephalopathy.
Certainly that would be included in your differential diagnosis, but I wouldn't necessarily classify it as being able to make the diagnosis on my impression at that time particular time.
Q. Though that was --
A. That's in the differential certainly.
Q. But on the discharge summary they did make that diagnosis. didn't they?

A. Eventually they did.
Q. Ycah.
Is that a rcvcrsible or permanent event, anoxic encephalopathy?
A. Depends on the degree and the time.
Q. What do you thiik in this case from the hospital records?
A. Well, not knowing all the particulars with the testing and not having been there, it's difficult to make a determination as to whcthcr or not something's going to be reversible or irreversiblc.
I haven't seen Mr. Davis so I can't say whcthcr or not he has any permanent deficits relatcd to anoxic encephalopathy.
From what I have read in the records, though, it doesn't -- it doesn't appear that he has had an irreversible damage as a result of any anoxic enccphalopathy.
Q. All right.
The next scntencc, "There was no clear indication for this patient to be treated with Heparin as recommended by the ncurologist after the spinal tap."
A. I probably would not havc instituted it at

that time.
Q. "Mr. Davis was not in atrial fibrillation, and prior to the introduction of Heparin after the spinal tap, if there was a concern about embolization, then an emergency echocardiogram would have been the appropriate course of action."
A. Not being a cardiologist, I don't feel qualified to comment on that.
Q. Do you know whether an echocardiogram was done?
A. I don't know.
I can't recall off the top of my head if a cardioechogram was done or not.
Q. The third opinion, "The spinal tap was difficult to perform and required three attempts."
A. Correct.
Q. "4. There was 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."
A. Like I say, we get down to semantics again because there is a note at 8:00 o'clock on the day that he developed the paraplegia that demonstrates "Moves all extremities."

Now, whether or not Dr. McPherson classifies that as neurological checks to closely monitor Mr. Davis' lower motor function or his sensory function I don't know, but it certainly is a means of monitoring that function.
Someone says "Moves all extremities," I presume that his motor function is allowing him to move his legs and his arms.
MR. TREU: well, along with the physician note that morning as well of a neuro check --
MR. CUNNINGHAM: what Was that?
MR. TREU: – 7:50 a.m. He read it to you --
THE WITNESS: Yeah.
MR. TREU: – whcn you asked about neuro checks.
THE WITNESS: It was on one of those.
MR. CUNNMGHAM: Well, just so we're on the -- all on the same page, Kris, point this out.
MR. TREU: 11/10/91, 7:50 a.m.
THE WITNESS: Yeah.

MR. CUNNINGHAM: Is that in his report?
MR. TREU: Neuro.
MR. CUNNINGHAM: In whose report -- this is --
MR. TREU: In the records. You asked him --
MR. CUNNINGHAM: Oh.
MR. TREU: – to identify this earlier and he did.
MR. CUNNINGHAM: Well, let's see – let's get – we didn't mark that, did we?
MR. TREU: Probably in the early part of the chart.
THE WITNESS: Yeah, it's fairly early.
MR. CUNNINGHAM: Let's take a break until wc find this. Then we can go on.
(Thereupon, a recess was taken.)
MR. CUNNINGHAM: This will be No. 4.
Kris, would you circle what you're talkiig about here?
MR. TREU: well, he's --
MR. CUNNINGHAM: Oh, he read --

MR. TREU: He's testified about it already.
MR. CUNNINGHAM: Okay.
BY MR. CUNNINGHAM:
Q. Why don't you circle it, Doctor.
A. I just read the neurological examination here.
Q. Okay.
We'll mark this Exhibit 4, and it's Bates number 000020.
(Thereupon, Plaintiff's Exhibit 4 of the Kalfas Deposition was marked for purposes of identification.)
MR. TREU: I think you mentioned that note as well?
THE WITNESS: Yeah, I did mention that note, but that was --
BY MR. CUNNINGHAM:
Q. What's that?
A. – without a time there.
Q. Which note?
A. No, it was the note immediately bclow the 4:00 p.m. note where it says "Cannot move legs."
That note of 11/10 with no time there merely

said "Neuro - Slightly improved," for whatcvcr that's worth.
Q. Well, you think -- let me look.
A. It's vague and I wouldn't put much weight on it eithcr way.
What's improvcd I havc no idea judging from that note.
MR. TREU: Here's your copy.
MR. CUNNINGHAM: Okay. We'll make this Bates numbcr 21. It's Kalfas 5.
(Thereupon, Plaintiff's Exhibit 5 of the Kalfas Deposition was marked for purposes of identification.)
BY MR. CUNNINGHAM:
Q. Would you circle that again?
A. (Indicating.)
Q. Now, you're saying that this has no time on it?
A. Corrcct, but I'm just alluding to the Licbaman note thcrc on 11/10/91. It didn't xcrox well on that particular copy, but on my copy it's listed hcrc 11/10/91 and it's obviously somewhere bctwccn 7:50 a.m. and 4:00 p.m. on that samc day.

Q. Whcrc it says "Neuro - Slightly improvcd"?
A. Right.
Q. Okay.
And you don't know what that means?
A. I havc no idea.
Q. Okay.
Can you read who that is?
Maybe Kris can tcll mc.
MR. TREU: I don't know whose note that is.
THE WITNESS: It's Lieberman's scrvicc.
I don't know who the resident would be thcrc. It doesn't look like Cerino, is the only name that I'm familiar with.
MR. TREU: It's not Cerino's writing.
THE WITNESS: Okay. And it's not Kcrchynski, bccause her name is down below; and ccrtainly docsn't look like Woo, so I don't know.
MR. CUNNINGHAM: Would you be ablc to find that out for mc, Kris?
MR. TREU: Is that Licbcrman's? Looks like an "RAL."

MR. CUNNINGHAM: "R.A. Lieberman," yeah.
MR. TREU: Is that his note, Pat --
THE WITNESS: Looks like it is.
MR. TREU: -- on the loth?
THE WITNESS: Here's "RAL" over here and it looks like the same over here.
MR. TREU: It looks like Lieberman.
THE WITNESS: *Yeah.*
MR. CUNNINGHAM: Okay.
MR. TREU: Tell me if I'm wrong, Pat.
MR. CUNNINGHAM: Hold on. I wanted to -- okay. We got --
MR. MURPHY: Trying to compare it with something else, but I think it might be his.
MR. CUNNINGHAM: That's okay. Let's go on.
I think it's Liebcrman.
If you dctcrmine it's someone else, would you let me know?

MR. TREU: Sure.
MR. CUNNINGHAM: Put that in the record so we can depose that pcrson before all of a sudden he shows up in court.
MR. TREU: Sure.
BY MR. CUNNINGHAM:
Q. We're down to, before we wcre talking, "There *are* no documented neurological checks to closcly monitor Mr. Davis' lowcr extremity motor or sensory function post lumbar puncture until his complaints of inability to move his legs."
A. And that's when I said there were some neurological chccks there --
Q. All right.
A. -- 'cause the notations of "Moving all extremities" implies that there was neurological checks.
Q. Okay.
So you're referring to Kalfas Exhibits 1, 2, 4 and 5?
A. Corrcct.
Q. I'll let you look at them before you say "Correct."
A. I saw what you had out thcrc.
Q. Okay.

A. I was just kind of looking to see what 3 is. What is 3? Arc we missing 3?
Q. 3 is -- 3 is Dr. McPherson's report.'
A. Gotcha. Okay.
Those all note neurological examinations of the paticnt.
Q. Okay.
First of all, there's no showing that any of those neurological examination -- quote "examinations" -
A. I'm sorry.
Q. - that you -- there's no showing in any of those, quote, "neurological examinations," unquote, that they're -- that either motor or sensory function -- well, that sensory function was done?
A. I don't know.
Can I look at thcm onc more timc?
Q. Surc.
A. No, sensation is not rcfcrrcd to.
Q. All right.
But you take it from those exhibits that motor function was --
A. I take it from those that thcy -- it was tcstcd, correct, although from that "Slightly improvcd" I havc no idca what he's referring to.
Q. Okay.
A. He may be referring to motor function, he may bc referring to neuro -- mcntal status function.
Since that's bcfore the onset of paraplegia, I prcsumc it's rclatcd to his mental function, the "Neuro improvcd" notation, because if it was after his paraplegia hc would have notcd it thcre and it's also bcfore the note that first documents the paraplcgia.
Q. Wcll. you're saying the first knowlcdgc of paraplegia being whcn he says "I can't move my legs"?
A. Right, exactly right,
Q. But I think you agree you don't know whcn thc paraplegia --
A. Exactly.
Q. -- occurrcd?
A. Don't know whcn it started.
Q. All right. Just so wc can corrcct thc rccord on that. All right.
Now, thc ncxt scntcncc then, "This failurc to closcly 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."
A. Well, having already said that I probably myself would not have ordered these specific neuro-status monitoring tests after this particular -- in this particular situation, I'd have to disagree with it or I'd be saying that I was practicing an unaccepted standard of neurological care.
Q. Well, let's say this happened tomorrow and he thcn makes - and everything else happened, Doctor.
Knowing what you know now about Joseph Davis and it happened tomorrow, would you agree that a failure then to closely monitor Mr. Davis' neurological status in view of a traumatic lumbar puncture with concomitant use of Heparin was a deviation - been a deviation from the accepted standard of neurological care?
MR. TREU: Objection.
MR. MURPHY: Objection.
MR. CUNNINGHAM: Okay.
MR. TREU: Don't answer that question.
MR. CUNNINGHAM: He can answer

that.
MR. TREU: No, he can't answer that question.
That's totally irrelevant.
MR. CUNNINGHAM: He can answer that question.
You can object at the time of trial, but he can answer that question.
THE WITNESS: Well, as I said, it's retrospectively speaking. We can make all sorts of claims about what should or should not have been done.
What I'm primarily focusing on is what I would have done in a situation.
Given the fact that I've never ordcrcd monitoring studies/monitoring tests after a lumbar puncture, even a bloody tap, and I probably would not have ordered monitoring tests in this particular situation, knowing what I know now, would I do that in the future?
Probably.
Q. All right.
The next paragraph, "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."
A. I agree.
Q. "It is further my mcdical opinion within a reasonable degree of medical certainty that a lumbar puncture was not necessary in this patient to assess his mental status."
A. I don't agree.
Q. "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 ncurologic status in anticipation of the formation of an epidural hematoma with concomitant cauda quina syndrome."
A. That is, as I said, retrospectively I would agree with that.
Q. All right.
A. At the time I would have ordered those tests -- or had that monitoring.
Q. Okay, Doctor.
Now, let's go now to Exhibit 5 which will be --
A. 6.
Q. Do we have a 5?

MR. TREU: 5 is one of those pages.
AIR. CUNNINGHAM: You're right. Off the record.
(Thcreupon, a discussion was held off the record.)
(Thereupon, Plaintiff's Exhibit 6 of the Kalfas Deposition was marked for purposcs of identification.)
BY MR. CUNNINGHAM:
Q. This is 6. This is Dr. Cox.
A. Okay.
Q. Okay.
I wanted to go through Dr. Cox the same way. I'll go through each sentence.
MR. TREU: Is it really necessary? I mean, can't you hit the high points?
MR. CUNNINGHAM: Okay.
BY MR. CUNNINGHAM:
Q. Lct's go through -- all right.
But when I givc thc scntencc, I'll ask you is it correct or incorrect.
A. Okay.
Q. All right.

Let me ask you when you read over the first one, two paragraphs finishing up at the top of page 2, is there any corrections that you can see there?
A. Basically he outlines -
Q. Yeah.
A. -- the course of Mr. Davis' hospital stay and I don't note any major deviation --
Q. All right.
A. - from what's been testified to.
Q. What about the first complete paragraph on page 2, Doctor, beginning "At the time of the patient's admission"?
A. Okay.
Give or take a few pints which I can't remember off the top of my head, it looks fairly accurate.
Q. All right.
And then the next paragraph beginning with "Despite the fact"?
A. Okay.
I'll take his word for it. As I said, I'm not a hematologist, so I'm not expert --
Q. All right.
A. -- enough to make that conclusion.

Q. Now let's go to the last paragraph and we'll do this by scntcncc.
A. Okay.
Q. "It's my belief, within a reasonable degree of mcdical certainty, that the subdural hemorrhage within the lower spinal canal was due to the concomitant administration of aspirin and Heparin."
A. I would only add that and the lumbar puncture.
Q. Right. Okay.
"It does appear, from a review of the chart, that the patient was cognizant of a lack of feelings in the lower extremities since the morning of November 11th."
A. I did not find that in the record.
Q. Okay.
"Clearly, had the patient received periodic neurological examinations following his traumatic lumbar puncture, most specific - especially in the light of the fact that it's well-documented in the chart the patient was receiving aspirin and immediately following his lumbar puncture was placed on Heparin therapy for a subsequent PTCA, that neurologic signs of early compression of his

spinal cord would have been ascertained before he irrevocable damage was accomplished by compression due to the subdural hematoma."

A. I can't agree with that simply because of the way I explained it earlier that we never really know at one particular point in time where irrevocable damage occurs, so you really can't draw that conclusion.

Q. "In addition, appropriate lab studies should have been accomplished, most especially in light of the above hemothcrapy occurring in concert with the traumatic lumbar puncture."

A. I don't feel qualified to comment on that.

Q. "These laboratory studies may well have given the clinicians a more precise picture of his coagulation state."

A. I'll have to take his word on that.

Q. Okay.

Now we'll go to Dr. Saltis, which will be Exhibit 7.

(Thereupon, Plaintiff's Exhibit 7 of the Kalfas Deposition was marked for purposes of identification.)

BY MR. CUNNINGHAM:

Q. If you could read the first page and tell me if there's any corrections that you see, otherwise that you would agree with it?

A. He mentions removal of a subarachnoid hematoma.

It's difficult to really remove a subarachnoid hematoma, but other than that I didn't see any other corrections needed.

Q. Okay.

Now I want to go down to his comment where you start with "When the patient was anticoagulated."

Do you see that fourth line down?

MR. MURPHY: Oh, on page 2 of his report?

THE WITNESS: Fourth line down?

MR. CUNNINGHAM: Yeah.

BY MR. CUNNINGHAM:

Q. "When the paticnt was anticoagulated some 12 hours latcr, a hematoma evolved bccausc of lcakagc of blood from the previously tom subdural and arachnoid veins surrounding the spinal cord and cauda equina."

A. That's --

Q. Would you agree with that?

A. That's an assumption.

It's certainly a possibility that it was a leakage,

Q. What else would it have been?

A. It could be an abrupt rupture too --

Q. Rupture?

A. -- that can result - an acute rupture that may result in acute formation of a hematoma.

Q. That would be in an inadvertent puncturing?

A. Either that or from - you *can* have a situation where the - you have a weakened blood vessel that will essentially open up as a result of a spiking in blood pressure.

So if you have an episode of hypertension, then that can result in bleeding, and we know that from our experiences with this problem in the brain.

Q. All right.

Then this situation is a known complication of the anticoagulating a patient who has suffered a bloody tap from an LP?

A. It's certainly a known complication that it can occur after a bloody tap, or with an anticoagulation in the absence of a bloody tap it

can occur too.

Q. All right.

Now, I won't quote the next sentence 'cause you -- we've already gone through this on the laminectomy checks.

A. Right.

Q. Have we not?

A. Correct.

Q. Then Dr. Saltis says "It's a reasonable medical certainty that, had these laminectomy checks been done, the evolving spinal cord compression in the area of the hematoma would have been identified and more expeditiously treated."

A. I can't agree with that because I don't know when the hematoma began; and if I have a notation in the chart that mentions their first notation of the hematoma at 4:00 o'clock, I have no way of knowing when that hematoma actually began.

If someone tells me we have an MRI that shows this hematoma at 12:00 o'clock and they're first noting it at 4:00 o'clock, then I would agree with Dr. Saltis.

But again not trying to difficult, I just can't pinpoint in time when this hematoma began and that's basically my whole problem with the --

with the statement here.
Q. And the last scntcnce, "It is my medical opinion that standard care dictates that laminectomy checks be done during the time of anticoagulation after an LP has bccn done whcthcr an LP is bloody or not bloody."
A. I would say retrospectively I would agree with that now.
Q. Okay.
Now, let's go to --
MR. TREU: Object and move to strike any references to retrospective opinions just so that's clear on the record.
MR. MURPHY: Join in that.
MR. CUNNINGHAM: - Kalfas NO. 8 is Wanda Bums.
(Thereupon, Plaintiff's Exhibit 8 of the Kalfas Deposition was marked for purposes of identification.)
BY MR. CUNNINGHAM:
Q. She's a registered nurse.
Is there anything in the first page?
A. The looks fairly straightforward.
Q. Okay.

You would agrcc with that?
A. More or less, yes.
Q. What's more or less mcan?
A. More or less csscntially I can look up on the 3:00 to 11:00 shift or I can look up at 11:20 a.m. percutaenous angioplasty; but csscntially having perused it previously, I agree with everything that's thcrc.
Q. Okay.
Pagc 2, the first paragraph?
A. "Can't movc legs."
Q. And I understand you would not know whether Mr. Davis is now a paraplegic except I told you that.
A. Correct.
Q. Okay.
So I don't want you to --
A, Okay.
I agree --
Q. Okay.
A. -- with that first paragraph.
Q. All right.
Now, the standard nursing care for a patient, would you know that, Doctor?
Is that beyond your --

A. Not off the top of my head, no.
Q. All right.
Let's pass by it.
A. I mean, I'll take her word for it but -
Q. No, no.
That's okay. I don't want you to -
A. Okay.
Q. The - so we'll skip the standard of nursing care paragraph, and then following are the summary of neuro assessments performed on Mr. Davis after the lumbar puncture.
You have read this report before, have you not?
A. Yes, I have.
Q. Did you have a chance then to go through to check -
A. Correlate?
Q. - correlate with the hospital records?
A. Yeah, I essentially outlined that on my notc and just as far as correlated it with this and all the other records that I had here; and what she has here I'm having difficulty with as far as 11/9/91, 3:00 to 11:00 shift "No documentation regarding neuros" and there's that - I think that one exhibit that mentions "Moves all extremities."

Q. That's the one --
MR. TREU: That was on the 10th.
THE WITNESS: On the 10th. I'm sorry, I'm sorry.
MR. CUNNINGHAM: Yeah.
THE WITNESS: 7:00 to 3:00, 7:00 to 3:00 shift then is the one I have problems with; 11/10, 7:00 --
BY MR. CUNNINGHAM:
Q. Which one?
A. 11/10/91, 7:00 to 3:00 shift, second from the bottom.
Q. Okay.
A. "No documentation regarding neuros," and the nurse's note there mentions "Movies all extremities."
I think it was No. 1, "Moves all extremities."
Q. Exhibit 1--
A. Correct.
Q. -- what you're referring to? All right.
A. That was the only problem I had with that scenario she outlined.
Q. And Doctor, would you know at the end where

she has -- the last paragraph, would you be qualified to either agree or disagree with the opinion as far as nurses --
A. Not from a nursing standpoint, no.
Q. All right, okay.
How long did you review these records? Did you have a time?
A. Oh, gee, I probably spent -- this particular thing and these --
Q. Yeah.
A. -- probably about three hours, two and a half to three hours.
Q. Okay.
Did you take handwritten notes?
A. I probably did back in March, but I certainly don't have those right now.
Q. Do you have them somewhere?
A. No.
Q. They're destroyed?
A. I probably threw them away.
Q. Okay.
A. Just jotting things down so that I can dictate it.
Q. Okay.
A. I doubt that I would have filed something

like that.
Q. And the report that you gave was from your -- that was your dictation?
A. Correct.
Q. Okay.
Are there any other -- have you had any other reports that you've given to anybody else other than this?
A. Regarding this case, no.
Q. Yeah.
A. No.
Q. Okay.
Have you -- you intend to testify at this trial?
A. If asked to, yeah.
Q. Is there anything in your testimony that you anticipate, if you give it, that will be different than what's in your medical report or what has been given here --
A. No, I'll be as consistent --
Q. Hold on.
A. sure.
Q. -- or what's been given here in this deposition?
A. No.

Q. All right.
You haven't been asked to do anything else?
A. I don't understand the question.
Q. You haven't been asked to do anything else than what was in your report and what we talked about here today?
A. Correct, exactly.
Q. Okay.
I asked that so that there's no surprises from my end --
A. I gotcha.
Q. -- when you come to the stand and --
A. No, no, no.
Q. -- and you have a different charge.
A. I won't blindside you.
Q. Okay. Good. Thankyouverymuch.
A. Okay.
Q. You have a right to read the -- or waive it.
A. Yeah, let me --
MR. MURPHY: Dick, I got a couple questions for clarification.
MR. CUNNINGHAM: Oh, okay.
MR. TREU: Pat may have some questions.
MR. CUNNINGHAM: I'm Sorry, Pat.

MR. TREU: He represents Dr. Lieberman.
THE WITNESS: Gotcha.
CROSS-EXAMINATION
BY MR. MURPHY:
Q. When you started going through the reports, "Do you agree with these," this paragraph, that paragraph, the other thing, there was some things I saw and there may be others, but a couple things I saw.
Look --
MR. CUNNINGHAM: Which?
BY MR. MURPHY:
Q. Looking at Dr. Cox' report, it would be over on the top of page 2, which is a preface to my question, Dr. Kalfas.
The question was basically "Do you agree with the chronology of events set forth there," and you said "Basically I do."
I see a sentence Dr. Cox has there "At this time," referring to 1600 hours "the patient indicated that he had been unable to move his legs this a.m."
A. Okay.
Q. I do not see that anyplace in the medical

record whatsocvcr, that the paticnt said hc couldn't move his legs in the morning.

In fact, that notc says that he could move them in the morning.

A. I don't find that in the rccord cithcr.

Q. Okay.

Let me -- —justI'm referring to the 11/10 4:00 p.m. note.

A. Uh-huh.

MR. CUNNINGHAM: Which one is that? Is that an exhibit?

THE WITNESS: It's on Exhibit may be 5.

MR. TREU: 5 or 6.

THE WITNESS: 5 where we circle "Neuro - Slightly improved," but below that we did not circle the note that first documents his "Cannot move Icgs."

MR. MURPHY: Okay.

BY MR. MURPHY:

Q. We'll use the exhibit since it's already marked.

On Exhibit 5, which was a 4:00 p.m. note, docs that indicate that the paticnt was able to movc his legs this a.m. at shift change?

A. Yes.

Q. Okay.

Another question with respect to Dr. Cox' report, generally he makes rcfcrencc in there as to some perhaps hematologic opinions with respect to the relationship bctwccn Heparin and aspirin and you commcntcd you take him at his word and that that's not your area?

A. Yeah, I do not havc expcrtise to commcnt on that.

Q. Okay.

For clarification, you're not saying that you agree nor that you disagree with that; you just don't have an opinion on those issues?

A. Corrcct.

Q. Okay.

MR. MURPHY: That's all I havc.

MR. CUNNINGHAM: Okay.

MR. TREU: Okay.

You want to rcad it when it's typed up, Doctor?

THE WITNESS: Yes.

MR. TREU: Okay. Indicate to him you will not waivc signature thcn.

THE WITNESS: I will not waive signature.

(Thereupon, the deposition was concluded at 7:36 o'clock p.m.)

- - -

I, IAIN H. KALFAS, M.D., F.A.C.S., do verify that I hive read this transcript consisting of 138 pages *md* that the questions and answers are correct.

IAIN H. KALFAS, M.D., F.A.C.S.

Sworn to before me, _____, Notary Public

this _____ day of _____, 1995.

Notary Public in md for the State of Ohio.

My commission expires _____.

- - -

CERTIFICATE

STATE OF OHIO.)
) SS:
SUMMIT COUNTY.)

I, Michael Christy, a Stenographic Reporter and Notary Public within and for the State of Ohio, duly commissioned md qualified, do hereby certify that the within named witness, IAIN H. KALFAS, M.D., F.A.C.S., was by me first duty sworn to testify the truth. the whole truth md nothing *but* the truth in the cause aforesaid; that the testimony then given by him was by me reduced to Stenotypy in the presence of said witness, afterwards prepared and produced by means of Computer-Aided Transcription a d that the foregoing is a true and correct transcription of the testimony so given by him as aforesaid.

I do further certify that this deposition was taken at the time a d place in the foregoing caption specified and was completed without adjournment.

I do further certify thrt I am not a relative, counsel or attorney of either party, or otherwise interested in the event of this action.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal of office at Akron, Ohio on this 7th day of August. 1995.

Michael Christy, Stenographic Reporter and Notary Public in and for the State of Ohio.

My commission expires February 12.1997.

JK

CICU BASELINE ASSESSMENT

DATE 11/10/91 TIME 0800

CARDIOVASCULAR STATUS ☒ AP Regular

SR rated, ectopic PVC, PVCs increased. Denies chest pain, skin warm & dry. Periph pulses (+).

RESPIRATORY STATUS ☒ Breath Sounds Equal, Clear ☒ O2 Nasal can.

JK

NEUROLOGICAL STATUS Alert, oriented to person, place at times. Slept for long periods, easily arousable. MAE, (R) knee immobilizer

SKIN INTEGRITY (R) groin site stable slight oozing noted. Sandbag in place.

GASTROINTESTINAL STATUS ☐ NPO ☒ PO

☐ NG ☒ Abdomen Soft nontender. Bowel sounds (+).

GENITOURINARY STATUS Output ☒ OS ☐ Foley Bladder ☒ Non-Distended

Urine is clear, heme (-).

VASCULAR ACCESS IV site (L) H, (L) IV ☒ No Phlebitis or Infiltration

SG ☐

A LINE ☒ (R) groin via sheath

CVP ☐

DRSG's dated ☐

I.D. BAND/ALLERGY BAND ☒ Checked

NTG.

Hep

JK

NURSE'S SIGNATURE [illegible]

DATE 11/10/91 TIME [illegible]

CARDIOVASCULAR STATUS ☒ AP Regular NSR

RESPIRATORY STATUS Breath Sounds ☐ Equal, Clear ☐ O2

NEUROLOGICAL STATUS

SKIN INTEGRITY

GASTROINTESTINAL STATUS ☐ NPO ☐ PO

☐ NG ☐ Abdomen Soft

GENITOURINARY STATUS Output ☐ OS ☐ Foley Bladder ☐ Non-Distended

VASCULAR ACCESS IV site ☐ No Phlebitis or Infiltration

SG ☐

A LINE ☐

CVP ☐

DRSG's dated ☐

NURSE'S SIGNATURE

CICU BASELINE ASSE

DATE TIME

CARDIOVASCULAR STATUS ☐ AP Regular

RESPIRATORY STATUS Breath Sounds ☐ Equal, Clear ☐ O2

NEUROLOGICAL STATUS

[redacted]

SKIN INTEGRITY

GASTROINTESTINAL STATUS ☐ NPO ☐ PO

☐ NG ☐ Abdomen Soft

GENITOURINARY STATUS Output ☐ OS ☐ Foley Bladder ☐ Non-Distended

VASCULAR ACCESS IV site ☐ No Phlebitis or Infiltration

SG ☐

A LINE ☐

CVP ☐

DRSG's dated ☐

NURSE'S SIGNATURE

PLAINTIFF'S EXHIBIT # Kalfas 1

CCL000

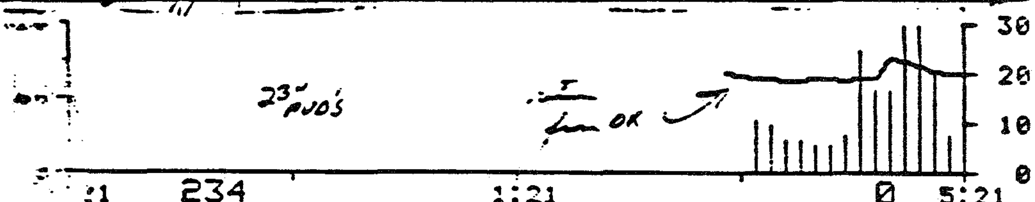
UNIVERSITY HOSPITALS OF CLEVELAND

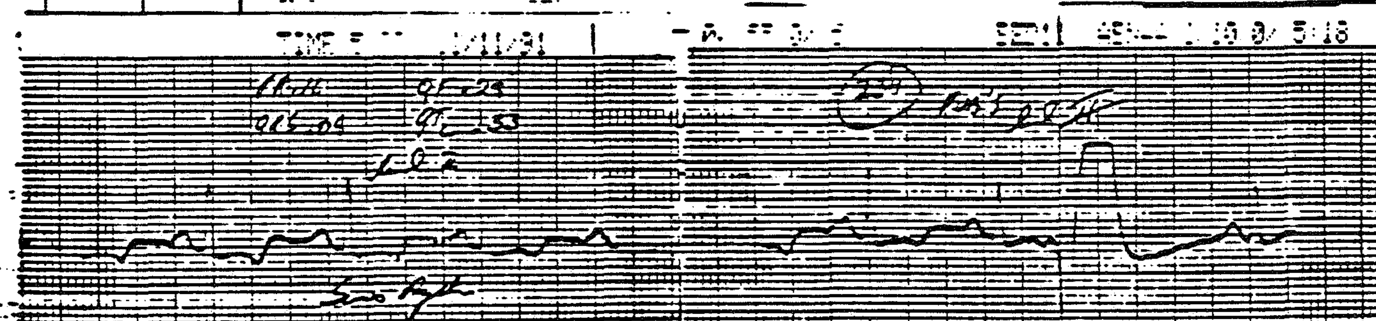
ND

NURSING NOTES

DAVIS, JOSEPH
15[illegible]39 11 06 91 C
012-[illegible] LKSD CIC 0000
Service
M B [illegible] 1928 P. No. 0
LIEBERMAN RANDY
DPV 5912

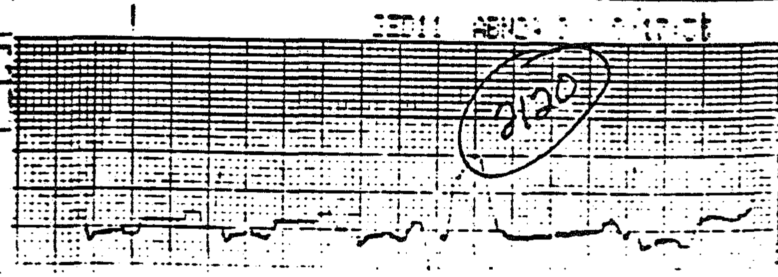
DATE	HOUR	
11/10/91	0730 / 1830	SPPTCA: (R) groin site slight ooze noted. (R) DP/PT pulses (+). feet equally warm. Sheath in place (transduced). Thigh circumference stable. Resting most of shift due to [illegible]. NTG/Hep continued. [illegible] [illegible] dose [illegible] for [illegible] BP control. [illegible] [illegible] — [illegible]
11/10/91	2345	Pre-op — Patient discovered flaccid in LE bilat @ 1530 today. Taken for stat MRI revealing epidural [illegible] hematoma causing spinal cord compression. No other [illegible] to mention @ this time. [illegible]
11/10-11/91	2330-0700	Monitoring [illegible] (OR [illegible]), [illegible], [illegible] -234 [illegible]
		(E) Freq. [illegible]. [illegible] — T. G[illegible]





T. G[illegible]

DATE	HOUR	
11/11/91	0730 / 1930	Assign (1830)



SELSON clinics

June 2, 1995

Richard T. Cunningham
Amer Cunningham Brennan Co.
Attorneys and Counselors at Law
Society Building, Sixth Floor
159 South Main Street
Akron, OH 44308-1322

RE: JOSEPH E. DAVIS, et al VS. UNIVERSITY HOSPITAL OF CLEVELAND et al

Dear Mr. Cunningham:

I reviewed the medical records pertaining to the hospitalization at University Hospital of Joseph E. Davis from 11/6/91 to 11/21/91.

Mr. Davis was transferred to University Hospital in Cleveland on 11/6/91 sometime in the early evening from Aultman Hospital in Canton with a diagnosis of cardiac arrhythmia.

From my review of Mr. Davis' medical records, the following important neurological data is as follows: Upon admission on 11/6/91, Mr. Davis was lethargic. His neurologic cognitive function progressively worsened. On 11/7/91, he was oriented only to himself and not to time or place. Later that day, he was agitated. Mr. Davis was treated with Valium. On 11/8/91, he was disoriented to place and time. These neurologic cognitive assessments were performed prior to his neurologic assessment on 11/8/91.

On 11/8/91, neurologic consultation was performed, and the decision was made to perform a lumbar puncture and to initiate Heparin. That lumbar puncture required three attempts and was described as a traumatic lumbar puncture. Mr. Davis was treated with Aspirin beginning 11/7/91 until 11/9/91. Heparin was instituted on 11/9/91. On 11/9/91, Mr. Davis underwent an emergency percutaneous transluminal coronary angioplasty. On 11/10/91, at approximately 1500 hours, Mr. Davis complained of inability to move his legs. An emergency MRI of the lumbar spine was performed, and this confirmed a large hematoma at T12-L1 with interthecal component at L3 through the sacral levels. An unsuccessful neurosurgical decompression was attempted. Mr. Davis remained paraplegic postoperativley.

The following are my medical opinions based on a reasonable degree of medical certainty: 1) Based on review of Mr. Davis' medical records, there was no clear indication for a lumbar puncture on 11/8/91. Mr. Davis was admitted to University Hospital on 11/6/91 confused requiring restraints. On 11/7/91, he was struggling against restraints and appeared confused. His agitation on 11/7/91 required not only physical

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(216) 673-9641 • Fax (216) 673-9335

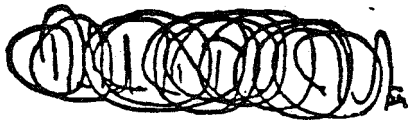
☐ Selson Clinics II: Suite 200, 2725 Abington Court, Akron, Ohio 44393
(216) 836-5333 • Fax (216) 836-1775

PLAINTIFF'S EXHIBIT
KALFAS 3

restraints but also the use of Valium. There were no febrile episodes. However, there was clear evidence of anoxic episodes suggestive of an anoxic encephalopathy as well as disorientation secondary to his hospitalization in the coronary care unit. 2) There was no dear indication for this patient to be treated with Heparin as recommended by the neurologist after the spinal tap. Mr. Davis was not in atrial fibrillation, and prior to the introduction of Heparin after the spinal tap, if there was a concern about embolization, then an emergency echocardiogram would have been the appropriate course of action. 3) The spinal tap was difficult to perform and required three attempts. 4) 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. 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.

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. 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. 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 dosely monitor the patient's neurologic status in anticipation of the formation of an epidural hematoma with concomitant cauda equina syndrome.

Sincerely,



Selwyn-Lloyd McPherson, M.D.
Neurologist/Epileptologist

SLM/jma
faxed

11-9-91 Medicine / CICU

Events of today noted:
- s/p PTCA w/o complication
A/P: - Continue Heparin
Monitor.
r/o MI

11.10.91 DISPOSITION
0750 S/P SUCCESSFUL PTCA YESTERDAY
REMAINS Ē SHEATHS IN ; NO c/o CP
MEDS SOB.
DILTIAZEM STILL CONFUSED, BUT SOMEWHAT IMPROVED —
ASA AGITATED AND RESTLESS
NTG 36[2] 97 18 170/90
HEPARIN I 2950 O 2670
CAPTOPRIL CHEST : CLEAR
CV : RRR EQUAL PULSES IN LE
ABD : SOFT NT ND NABS
NEURO : ALERT · BETTER TIME ORIENTATION
COMPUTATION BETTER RECALL BETTER
NAMING INTACT ABSTRACTION : IMPROVED

LABS TELE : PVC PAIRS 3-4 BEAT RUN
K 3.7 BUN 20 / Cr .9 HCT 35

ISO	#1	#2
	540(–)	402(–)
	199(–)	213(–)
	42	47

PLAINTIFF'S EXHIBIT
KALFAS 4

PLAN
POSTULATED ISCHEMIA LIKELY CAUSE OF V-ARREST
SO TAKEN TO CATH TO OPEN PROBABLE NEWLY
OCCLUDED CORONARIES. SUCCESS. OVERNIGHT STILL
REQUIRES CAREFUL MONITORING
CONT HEP + NTG
CONFUSION SOMEWHAT IMPROVED

000020

PATIENT'S NOTES

CIL-ACARE LXSD CJC CCDC
M E 25 1928 P C
T LIIBERMAN RANDY
BPV 8912 U

ADDENDUM

11-10-91 EKG: - NSR c̄ FREQ PVC LEFTWARD AXIS
LAT ST DEPRESSION

[signature]

- Lieberman / CICU Attending - [initials]

Pt. seen + examined.
24° monitor stable, occ couplets overnight.
Neuro - slightly improved [initials]

- Will plan on d/c Sheath (PTCA) AM.
- Replete K+ to 4-4.5

H.H.C next week + EPS if stable.

[signature]

11/10 4⁰⁰ PM Xcoverage Note
CTSP for "cannot move legs".
Apparently pt able to move legs this AM. At shift change, pt states he is unable to move his legs + can't feel people touching.
By my exam: Reflexes: +1 no response to Babinski
Motor: flaccid
Sensory: senses hip joint movement otherwise
⊖ proprioception
⊖ pinprick variable exam
? Sensory level @ L1
⊖ sensation to touch
Consult neuro

[signature] MD

PLAINTIFF'S EXHIBIT
VAFAS 5

000021

FORENSIC/NEUROPATHOLOGIST
7384 McSHU LANE
HUDSON, OHIO 44236-1848

Coroner, County of Summit
Telephone: (216) 643-2102

August 24, 1993

Jack C. Weisensell, Esquire
Amer Cunninghan Brennan Co.. L.P.A.
Attorneys and Counsellors at Law
Sixth Floor
Society Building
159 South Main Street
Akron. Ohio 44308-1322

Re: Joseph E. Davis
No. 1583-659

Dear Mr. Weisensell:

As you have requested, I have reviewed the medical records of the above referenced-to patient concerninq his admission to University Hospitals of Cleveland on November 6, 1991, with his subsequent discharge on November 21, 1991. If I may, I would like to review only the essential issues which I believe played a role in the development of this patient's decrease in strength and motion in his lower extremities.

On November 8, 1991, at 1730 hours. the patient had a lumbar puncture performed. in order to assess the patient's altered mental status. This attempt was unsuccessful. and another attempt at a lumbar puncture was accomplished at 1815 hours. which was also unsuccessful. A third attempt was accomplished at 1845 hours, which did appear to be successful. The patient was to undergo a Percutaneous transluminal coronary angioplasty, which was accomplished on November 9, 1991. In preparation for this procedure. the patient was placed on Heparin, which was initially begun at 1.200 units per hour, commencing somewhere between 0600 hours and 0700 hours on November 9, 1991. At 1145 hours, on November 9. 1991, the patient received 10,000 units of Heparin I.V.. At 1205 hours, on November 9. 1991, the patient was to receive Heparin at the rate of 1.200 units per hour. At 1235 hours, on November 9, 1991, the patient received 3,000 units of Heparin IVP. At 1245 hours, on November 9, 1991, the patient underwent the percutaneous transluminal coronary angiographic procedure. The patient received a bolus of Heparin, amounting to 3.000 units, subsequent to which the patient received I.V. Heparin 25,000 units in 250 cc. of D5W-NS at the rate of 12 cc.

per hour, (1,200 units per hour). On November 9, 1991, at 1455 hours, an order was written that I.V. Heparin was to be discontinued at 0600 hours on November 11th, pending sheath removal. At 2110 hours, on November 9th, the patient received 1,000 units of Heparin I.V., followed by I.V. Heparin at the rate of 1,300 units per hour. On November 10, 1991, at 1600 hours, the patient indicated, "cannot move legs". At this time, the patient indicated that he had been unable to move his legs this a.m.. At shift change, the patient states he is unable to move legs and can't feel people touching. A neurologic exam was commenced, and it confirmed compression of the lower spinal cord.

At the time of the patient's admission to University Hospitals of Cleveland, it was noted tkat one of the medications the patient was presently receiving was aspirin, along with Pronestyl, Lidocaine, and Nitroglycerin. This is noted in the chart on November 7, 1991, Page 9. On November 7, 1991, it is noted, at the bottom of Page 10, that Lidocaine and Pronestyl are discontinued. However, at 1000 hours on November 7, 1991, on Page 11 under Addendum, it is noted that the patient is still on Nitroglycerin, as well as aspirin. On Page 13, a note is written by the PTCA fellow, in which he notes that the patient is presently on Nitroglycerin and aspirin. On November 8, 1991, a note is written on Page 15, in which again it is noted that the patient is on Nitroglycerin and enteric-coated aspirin. On November 8, 1991, the lumbar puncture was performed as described above. On November 9, 1991, in the early morning hours, Heparin therapy is commenced. Heparin therapy is continued through November 10, 1991. At 1600 hours, on November 10, 1991, the patient reports he cannot move his legs.

Despite ths fast it is noted in multiple places in the chart, there is no indication that the treating physicians were cognizant of the fact of the pharmacological inter-reaction between Heparin and salicylates. Heparin has been shown to cause a relative prohemorrhagic tendency when co-administered with salicylates. The mechanism of this action is thought to be the concomitant platelet inhibition accompanied by clotting factor inhibition.

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. It does appear, from a review of the chart, that the patient was cognizant of a lack of feelings in his lower extremities since the morning of November 11, 1991. Clearly, had the patient received periodic neurological examinations following his traumatic lumbar puncture, most especially in light of the fact that it is well documented in the chart that the patient was

receiving aspirin and immediately following nis lumbar puncture was placed on Heparin therapy for his subsequent percutaneous transluminal coronary angioplasty, that neurologic signs of early compression of his spinal cord would have been ascertained before irrevocable damage was accomplished by compression due to the subdural hematoma. In addition, appropriate laboratory studies should have been accomplished, most especially in light of the above hemotherapy occurring in concert with traumatic lumbar puncture. These laboratory studies may very well have given the clinicians a more precise picture of his coagulation state.

I would like to thank you for having asked me to review this most interesting case. If there is any other way I can be help, please do not hesitate to ask.

Sincerely,

William A. Cox, M.D.
Forensic/Neuropathologist

WAC/vk

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Telephone (216) 376-1902
FAX (216) 376-1599

Neurosurgery

Richard C Zahn, MD.
Ghassan F. Khayyat, M.D.
Kamel F. Muakkassa, M.D.
Frederic Lax, M.D.

Administrator

James F. O'Donnell C.P.A.

Neurology

Jon L. Weingart, M.D.
Lawrence M. Saltis, M.D.
Thomas L. Strachan, M.D.
Hugh J. Miller, M.D.
Jose C. Rafecas, M.D.

January 31, 1995

Jack Morrison, Jr.
Amer Cunningham Brennan Co. L.P.A.
6th Floor, Society Building
159 South Main Street
Akron, Ohio 44308-1322

RE: DAVIS JOSEPH

Dear Mr. Morrison:

I reviewed the medical records pertaining to the hospitalization of Joseph Davis during the period of November 6, 1991 to November 21, 1991. As you know, Mr. Davis was admitted to the hospital with coronary artery disease and underwent percutaneous transluminal coronary angioplasty (PTCA) on November 9, 1991. According to the records, however, on November 8, 1991, a lumbar puncture (LP) was performed, because of the development of change in mental status. Presumably, the LP was done to determine the presence or absence of meningitis. The records indicate that it took some three attempts over a period of one and a quarter hours to obtain the LP because of the patient's confused and uncooperative behavior. Multiple drugs were required to sedate the patient and make him manageable during this period of time. The records indicate that this LP was a "bloody" tap, that is, one which resulted in a mixture of cerebrospinal fluid and blood, the latter likely leaking from subdural and/or arachnoid veins which were inadvertently torn by the LP needle during the procedure because of the patient's uncooperativeness. Some twelve hours after the LP had been completed, the patient was given heparin aggressively for the PTCA procedure. On November 11, 1994, it was determined that the patient had become paraplegic and studies concluded that the patient had a possible hematoma in the lumbar region compressing the spinal cord and cauda equina in the area of the LP. The afternoon of November 11, 1994, surgical decompression was performed, removing a subdural and subarachnoid hematoma in the lumbar area. Apparently, the patient continues to be paraplegic despite the surgery.

TO: Mr. Morrison

RE: DAVIS, JOSEPH

It is my medical opinion, from my reading the records, that the lumbar puncture was an appropriate procedure considering the circumstances of the patient. This lumbar puncture resulted in a known situation, that is, a bloody tap. When the patient was anticoagulated some twelve hours later, a hematoma evolved because of leakage of blood from the previously torn subdural and arachnoid veins surrounding the spinal cord and cauda equina. This situation is a known complication of anticoagulating a patient who has suffered a bloody tap from an LP. Unfortunately, the records disclose that no laminectomy checks were done. It is a reasonable medical certainty that, had these laminectomy checks been done, the evolving spinal cord campression in the area of the hematoma would have been identified and more expeditiously treated. It is my medical opinion that the standard of care dictates that laminectomy checks be done during the the of anticoagulation after an LP has been done whether an LP is bloody or not bloody.

I hope this answers any questions you might have regarding my review of this gentleman's reccrds.

Very sincerely yours,/

Lawrence M. Saltis, M.D.

LMS:dr

Wanda J. Burns, R.N.
545 Wyoming Avenue
Niles, Ohio 44446
(216) 652-5827

February 1, 1995

Mr. Richard Cunningham
Attorney at Law
Sixth Floor Society Building
159 S. Main Street
Akron, Ohio 44308-1322

Dear Mr. Cunningham:

I have reviewed the medical records of Joseph Davis that I received from your office. I have completed my review and my opinion follows.

The medical records describe a 62 year-old male admitted to University Hospital of Cleveland on November 6, 1991. Previously Mr. Davis was a patient at Canton Aultman Hospital and was transferred to University Hospital due to cardiac arrhythmias.

A patient history, physical assessment and nursing data base was obtained upon the admission of Mr. Davis to University Hospital. The physical assessment describes Mr. Davis as alert and oriented to person, place, and time. Skin is healthy, warm with good trugor, abdomen soft nondistended with bowel sounds present. All peripheral pulses were normal and Mr. Davis had full range of motion of his extremities and was able to move his extremities against full resistance. He was intubated and on a ventilator.

On November 8, 1991, on the 3-11 Shift, a lumbar puncture was performed with difficulty. The puncture was attempted three times before success. A progress note written on November 9, 1991, at 3:15 a.m. states the lumbar puncture did not clear and it is difficult to interpret the results and Mr. Davis will need a repeat lumbar puncture in the future.

Mr. Davis' cardiac ectopy continued and on November 9,1991 at approximately 11:20 a.m. he underwent a percutaneous transluminal coronary angioplasty (PCTA) via the right femoral artery and IV heparin was started post PCTA.

PLAINTIFF'S EXHIBIT 1 KALFAS 8

On November 10,1991 at 4:00 p.m. a progress note is written stating Mr. Davis "cannot move legs" and a neuro consult was obtained. A diagnosis of a epidural hematoma extending from the 12th thoracic vertebrae to the 1st and 2nd lumbar vertebrae was made. At 10:25 p.m. Mr. Davis was sent to surgery for evacuation of the hematoma. Mr. Davis is now a paraplegic.

Standard nursing care for a patient who has undergone a lumbar puncture would include:

> Visualization of the lumbar puncture site for leaking of fluid, blood, swelling or discoloration, pain in the back at or around the puncture site. The findings should be documented. In addition to checking the puncture site, the nurse should check the patient's level of consciousness, hand grasps, foot pushes and pulls and sensation of extremities. These findings should also be documented.

The following is a *summary* of the neuro assessments performed OR Mr. Davis after the lumbar puncture.

> 11-08-91 at 8:00 p.m. - foot push/pulls intact, equal hand grasps
> 11-09-91 at 12:30 a.m. - hand grasps/foot push/pulls intact
> 11-09-91 (7-3 shift) - foot pushes intact
> 11-09-91 (3-11 shift) - no documentation regarding neuros
> 11-09-91 (11-7 *shift)*- no documentation regarding neuros
> 11-10-91 (7-3 shift) - no documentation regarding neuros
> 11-10-91 at 4:00 p.m. - discovery of flaccid lower extremities

There is not any assessment of the lumbar puncture site for any of these shifts.

Nervous tissue is very fragile and diagnosis and treatment of any *neuro* condition that compromises the spinal cord must be rendered in a timely fashion to avoid permanent damage. The Nursing Practice Act of Ohio mandates Registered Nurses are required to have specialized knowledge, judgment, and skill derived from the nursing science principles when rendering nursing *care.* Nursing Care consists of identifying actual or potential problems through nursing assessment and executing the nursing process.

Daily nursing practice involves performing and documenting a complete and accurate assessment based upon the Nursing Process. The Nursing Process includes:

1. Assessment
2. Nursing Diagnosis

3. Plan of Care
4. Implementation
5. Evaluation

The nurses that rendered care to Mr. Davis fell below the standard of care in that the nurses did not properly assess the neurological status or the lumbar puncture site of Mr. Davis. If you have any questions, please contact me.

Respectfully submitted,

Wanda J. Burns R.N

Wanda J. Burns, R.N.
545 Wyoming Avenue
Niles, Ohio 44446
(216) 652-5827

THE CLEVELAND CLINIC FOUNDATION

A National Referral Center An International Health Resource

Iain H. Kalfas, M.D., F.A.C.S.
Department of Neurosurgery S80
216 444-9061 Office

March **23,1995**

Mr. Kris Treu
1100 Huntington Building
925 Euclid Avenue
Cleveland, Ohio **44115-1475**

RE: Joseph E. Davis **vs.** University Hospitals of Cleveland, ***et al.***

Dear Mr. Treu:

I **reviewed** the medical records pertaining to the hospitalization of Joseph Davis from November 6, **1991** to November **21, 1991.** The salient points that I gathered fiom the record indicate that Mr. Davis was transferred to University Hospitals of Cleveland on November 6, **1991, from** Aultman Hospital in Canton. **His** diagnosis at that time was cardiac arrhythmias.

On November 8, he was noted to be confused and agitated. The CT **scan** of the brain was unremarkable. **A** neurology consultation **was** obtained. The neurologist recommended **a** lumbar puncture **as** soon **as** possible. He then stated that Heparin could be started following the lumbar puncture.

On November 8, ***at*** 5:30 p.m., a lumbar puncture was attempted. This attempt and another attempt were unsuccessful. At **6:45** p.m., **a** third attempt to obtain spinal fluid fiom the lumbar region was **successful.** Laboratory analysis of the spinal fluid showed no evidence of meningitis but did show evidence of a large number of **red** blood cells in the spinal fluid. **This** was most likely secondary to the spinal **needle** inadvertently injuring **a** vessel within the spinal canal. **This** is termed **a** traumatic lumbar puncture. In and of itself, it is usually not clinically significant.

On November **9, Mr.** Davis subsequently developed recurrent ventricular fibrillation and cardiac arrest prompting an urgent coronary angioplasty. In preparation for this procedure, **Mr.** Davis was placed on intravenous Heparin at approximately 7:00 a.m. on the morning of November 9. This would be approximately **13** hours following the lumbar puncture.

The angioplasty **was** performed and **Mr.** Davis' clinical status stabilized. He was continued on intravenous Heparin per standard post-angioplasty protocol.

On November 10, the nurse's note at 8:00 a.m. indicated that Mr. Davis was moving all extremities. The next pertinent nurse's note occurs at 8:45 p.m. on November 10. There is a preoperative note that states that Mr. Davis was found flaccid in both lower extremities at "1530 today."

An MRI of the lumbar spine was obtained somewhere between 5:00 p.m. and 7:00 p.m. on November 10. This demonstrated a large hematoma at the T12-L1 level with an intrathecal component at the L3 through sacral levels. A neurosurgical consultation was obtained and a surgical decompression was recommended.

The surgical procedure began at 10:25 p.m. on November 10 and lasted until 12:45 a.m. on November 11.

It is my opinion that the intrathecal hematoma was a result of the 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. However, given Mr. Davis' critical cardiac status, it does not appear that the Heparin could have been avoided.

The surgery to remove the hematoma was begun approximately seven hours after the patient was noted to be plegic. Given the need to obtain an MRI and stabilize a cardiac patient for surgery, I felt that the surgery was commenced in a reasonable interval of time.

The question is whether or not the paraplegia could have been identified earlier. The latest note stating he had normal lower extremity function was at 8:00 a.m., November 10. This preceded identification of the paraplegia by approximately 7 1/2 hours. Presumably, the weakness began in that window of time. Whether or not identification of the leg weakness a few hours earlier would have changed the outcome in this case is difficult to determine one way or the other. In my experience with spinal surgery and procedures to decompress the spinal cord in similar settings, I can state with a reasonable degree of medical probability that earlier identification of this problem by a few hours would most likely not change the outcome in this case. I state this because I have had a number of patients who have had improvement of neurological deficits following surgery that occurred at an interval greater from the onset of the patient's symptoms than occurred in this case.

In summary, I feel that the intrathecal hematoma was related to the lumbar puncture and Heparin therapy. The appropriate studies and treatment was performed within the standards of medical care for this condition.

If you have any other questions regarding Mr. Davis, please do not hesitate to contact my office.

Sincerely,

Iain H. Kalfas, M.D., F.A.C.S.

IHK/hb

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August 7, 1995

Kris H. Treu, Esq.
Suite 1100, Huntington Building
Cleveland, Ohio 44115-1475

RE: Joseph E. Davis
vs.
University Hospitals of Cleveland, et al.

Dear Mr. Treu:

Enclosed you will find a copy of the deposition of Iain H. Kalfas, M.D., F.A.C.S., which was taken on August 3, 1995.

You will recall that at the time of the deposition signature was not waived. Please have the witness read his deposition and make any corrections on the correction sheet only and sign the signature pages.

When this has been completed, please return a signature page and correction sheet to our office.

Sincerely,

Michael Christy

cc: Richard T. Cunningham, Esq.
File