State of Ohio, )
) SS:
County of Cuyahoga.)

IN THE COURT OF COMMON PLEAS

THOMAS M. GILBERT, etc., )
Plaintiff, )
vs. ) Case No. 374485
) Judge Coyne
EMAD DEAN NUKTA, M.D., )
et al., )
Defendants. )

DEPOSITION OF WILLIAM B. BAUMAN, M.D.
Wednesday, February 9, 2000

The deposition of WILLIAM B. BAUMAN, M.D., a witness, called for examination by the Plaintiff under the Ohio Rules of Civil Procedure, taken before me, Diane M. Stevenson, a Registered Merit Reporter, Certified Realtime Reporter, and Notary Public within and for the state of Ohio, by agreement of counsel, at the offices of William B. Bauman, M.D., 55 Arch Street, Akron Ohio, commencing at 6:00 p.m., the day and date above set forth.

APPEARANCES:

On behalf of the Plaintiff:

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On behalf of the Defendant
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On behalf of the Defendant
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WILLIAM B. **BAUMAN**, M.D.

A witness, calied for examination by the Plaintiff, under the Rules, having been first duly sworn, as hereinafter certified, was examined and testified as follows:

CROSS-EXAMINATION

**BY** MR. LOUCAS:

Q. Good evening, Doctor, we have just been introduced. My name is George Loucas, as you now know, and my partner over here is Skip Sweeney. We are going to be asking you questions about the case in which you have been asked to consult.

I take it you have had your deposition taken before?

A. Yes.

Q. So you know the rules?

A. Yes.

Q. Generally speaking?

A. Yes.

Q. I am going to ask you, please, to of course respond to all the questions verbally. But, most importantly, if you think that I am using a word that you think has a different definition or something, please stop me, let me know, so that we can get on the same playing field, if you

will. If my question doesn't make any sense, ask me to rephrase or repeat, and I think things will go much more smoothly.

As you know, the goal of my deposition is to find out each and every opinion you will be providing at trial so as not to be sandbagged or surprised at trial. You are aware of that?

A. Yes, I am.

Q. Doctor, would you please define interventional cardiology for me.

A. Interventional cardiology is the practice of cardiology whereby therapeutic maneuvers are performed in an effort to correct a specific cardiac problem.

Q. As opposed to clinical cardiology, which would be what?

A. Clinical cardiology has to do with the diagnosis and treatment of specific cardiac disorders without specifically intervening in a surgical or a mechanical way.

Q. You used the term on the former definition for interventional cardiology, therapeutic measures, and you just said surgical or what was the other term you used, surgical or --

A. Therapeutic, I think.

Q. So can you give me some examples of surgical or therapeutic measures for interventional cardiology?

A. One of the most common therapies or intervention performed in interventional cardiology is balloon angioplasty.

Q. What about angiography, is that considered part of interventional cardiology?

A. Interventional cardiology does encompass angiography or the injection of x-ray dye into blood vessels, but many cardiologists who are not, quotes, "interventional cardiologists" also perform angiography.

Q. Is angiography, though, considered, regardless of whether you are a clinical or an interventional cardiologist, is that a therapeutic measure?

A. Angiography is not a therapeutic, it is a diagnostic measure.

Q. But does it fall within that definition of interventional medicine meaning you are intervening the body with a catheter and introducing a foreign substance, namely, a contrast material, into the heart?

A. Not in the usual way that cardiologists would refer to interventional. Interventional is the

intervening or the giving of specific therapy when you are doing the procedure

Q I see we have come to a crossroads because you are saying that the introduction of a contrast material into the coronary arteries is diagnostic, and yet it is still a measure of intervention. So how would you reconcile that?

A. You may be confusing invasive cardiology versus interventional cardiology. So invasive cardiology would be the diagnostic testing that encompasses angiography And, as you stated, to perform angiography, you do have to place a catheter within a blood vessel and the injection of x-ray dye to take a picture So that is an invasive procedure.

Q. That would be invasive, not interventional?

A. That's correct.

Q. Intervention would be related solely to angioplasty or placement of a stent for instance?

A Balloon angioplasty, dilating of a coronary vessel, balloon valvuloplasty, where you would open valves that are narrow, would be considered interventional cardiology

Q. How were you contacted and when in this case?

A. I was contacted by Mr. Meadows back in 1997.
Q. How did he contact you?
A. I believe he called the office. I had no prior dealings with Mr. Meadows.
Q. Did you speak with him yourself?
A. I think I did. I don't recall specifically.
Q. What information was given to you at that time?
A. The usual situation would be that the law firm, in this case Reminger & Reminger, calls and talks to my secretary and asks if I would be willing to review a case.

And then, depending on the time line, I may say yes or no. In this case I said yes, I would review the case.

Q. What time line are you referring to?
A. Well, I guess what I am saying is that if it needs to be done within a week and I don't have the time available in a week, i would say no. If it is a case that is likely to proceed in the usual fashion, take a number of months or perhaps years, most of the time I would review those.
Q. What information did you receive?
A. I received --
Q. Before you even go through that pile I see in front of you, does this represent your entire

file?

A. Yes.

Q. I don't see any correspondence from this vantage point,. Where would that be, if any?

MR. VADNAL: There is some in there.

Q. Do you have the contact letter with what was sent to you?

A. You know, I don't have that, and I didn't even have a copy of my report, and in part related to the fact that the case was dismissed and then it was reopened. So I have not been able to resurrect those files. I probably have them somewhere in my office, but I haven't been able to find them.

Q. Do you recall whether recitation of the facts was sent to you for your review?

A. You will have to clarify what that is.

Q. Like a summary of the case, chronological time line, something like that.

A. I don't know if it was sent or not.

Q. I would like to know what you first reviewed, like in the first batch of materials.

A. As I recall, I reviewed the hospital records.

Q. And do you have that chart in front of you,

please?

A. Yes.

Q. Did you review Dr Selvaraj's office chart?

A If it is in there. I did Yes.

Q. Did you find anything there that indicated she received inappropriate care, or anything to that extent, or something that was not done that perhaps should have been done?

A. Let me just clarify. I reviewed that particular chart in 1997, so I did not rereview it for this particular deposition

Q Did you review the care rendered to Mrs Gilbert at Lutheran?

A Yes. I did

Q I take it you had no criticisms of that care?

A. I don't recall that I had any criticisms of that care.

Q What ere you asked to do in the case, specifically?

A. I was asked to review the entire case, but specifically the complication that occurred leading to aortic dissection.

Q. As best you can recall, and I may have already asked you this, the first group of material you received, was it just this chart, or was there

anything else at that time, as well?
A. I believe the first thing I received was the chart.
Q. Mow about the tapes of the procedures themselves?
A. I met with Mr. Meadows after I had reviewed the chart, and we reviewed the videotapes, the tapes and also the films, actually.
Q. Was this all prior to you producing this report of December 23?
A. I don't know whether I met with Mr. Meadows before or after that. I know I did review the videotapes before I prepared the report, but I am not sure.
Q. Your report indicates that you reviewed the videotape in preparation for writing this report. So may I safely assume that you read the chart, reviewed the capes, and then met with Mr. Meadows and then wrote the report?
A. That is probably the way it worked out, but it has been a number of years. I met with Mr. Meadows once, I am sure of that.
Q. After you reviewed the hospital chart, did you arrive at any preliminary opinions as to whether or not the defense of Dr. Nukta had merit?
A. Yes, I thought it had merit, yes.

Q. What was the basis at that point, before you sat down with Mr. Meadows, but at that point, just based upon the hospital record?

A. Well, as you stated, I am not sure that I reviewed the chart separately and then on the videotape. I probably did them in concert before I did the report.

Q. But I want to know after you just reviewed the chart, you said that you arrived at an opinion that his defense had merit, and I want to know what was in this chart alone after seeing the videotapes which led you to that opinion?

A. As I said I think before I wrote the opinion and did the letter I think I did review the videotapes.

Q. In the material that was sent to you, did you request additional information before arriving at an opinion?

A. The only additional information that we talked about was actually looking at the films, and I don't recall whether I looked at the films before the videotape or after the videotape. But I did review both the film and the videotape.

Q. You mean the cine. film?

A. The cine. film.

Q. I know that they were just brought down here recently because they went over to Kris Treu's office and then down here. So I take it you reviewed them at some point in the last week?

A. I reviewed the cine. films about a half an hour ago, 45 minutes ago, today.

Q. And you said you reviewed them before, as well?

A. Yes, I reviewed them back in 1997.

Q. When would you have reviewed them at that time? In other words, under what circumstances would you have reviewed the films at that time, or if you can just help me out here?

A. The films I remember because the films were damaged because a number of other people had looked at the films. And I had one of our technicians at the hospital actually repair the film. And I reviewed it at the hospital.

Q. Did you review it with the chart near you or the VHS tapes or by themselves?

A. I don't recall.

Q. Did you review them in the company of Mr. Meadows?

A, I don't believe I reviewed the cine. films with Mr. Meadows. We did review the videotape.

Q. Did you review the cine. films before the videotapes?

A. I don't recall which way it worked, but I reviewed both of them.

Q. Did you need to review both before you arrived at your opinions?

A. I don't recall whether I wrote the opinion before or after I reviewed both of the videos, the videotape and the catheter films.

Q. Well, when you were reviewing the case initially, did you find yourself saying, "You know, I would like to look at something else?" Did you arrive at that opinion at all?

A. No.

Q. Would you have been able to arrive at your opinions looking at just the cine. films without the VHS tape?

A. It was my understanding that the VHS tape was a copy of the cine. films.

Q. That is accurate. So your answer is you didn't need just the cine. films to form your opinions or --

MR. VADNAL: Well, what is the question? Can you restate the question again because I am not --

Q. I wanted to know whether or not you needed the cine. films or the VHS tapes to form your opinion,

or is one satisfactory in forming your opinion?

A. The VHS tape and the cine. films share the same information. The VHS tape is not a high quality -- is not as high quality as the cine.. films.

Q. And between the cine. films and the VHS, first of all, were you still able to see on the VHS tapes everything that you were able to see on the cine. films for purposes of forming your opinion in this case?

A. In a general way, yes.

Q. What, specifically, were you not able to form an opinion about where you had to go to the cine. films?

A. The cine. films are a better quality, so there may be some loss of information on the videotape that you would pick up on the cine. films.

Q. Well, we are specifically talking here about two RCA dissections and an aortic dissection. Was there any loss of the quality that you are talking about that you noticed in the VHS between that and the cine. film?

MR. VADNAL: I am going to object.

MR. LOUCAS: Okay.

MR. VADNAL: I think he has answered it already.

A. VHS tape does not have the same amount of information as the cine. film. The cine. film has a higher quality image. So, by definition, the cine. film is better than a VHS tape.

Q. All I want to know is whether or not you were able to provide all of the opinions you have in this case based upon your review of this VHS. In other words, are you going to walk into the courtroom and say, "Well, you aren't able to see something on the VHS that you can see on the cine."?

A. I really don't know. You would have to show me A and B and ask me, "Can you see it on A and not on B?" I really don't know how to answer that.

Q. Well, with regard to visualizing the film on the VHS in an effort to formulate your opinions about the merits of Dr. Nukta's defense, were you able to see everything that you needed to see on the VHS tape?

A. If you could be more specific and ask me what I need to see, I could answer your question. But just in a general way, I can't answer the question.

Q. Well, that goes back to my original question. Was there anything that you were looking for in

arriving at your opinions on the VHS tape that you were unable to find and had to go to the cine. film? For instance, laying the stent, deployment of a stent, or a dissection, we have two in the RCA and one in the aorta.

A. You can see the dissection in the cine. film, and

Q.

had to go to the cine. film to see?

A. I am not sure what you are driving at. There is always more information on the cine. film.

Q. And in this case what information -- you said "always." Therefore, I am assuming that means in this case, as well, there is more information in the cine. So what additional information were you able to glean from the cine. over the VHS tapes?

A. I guess what I am saying is information. There are always more data points, if you will, on the cine. film.

Whether it makes a difference in this particular case or not, I don't know. You will have to specifically address an issue on the VHS

tape version as the cine film.

Q What is a data point?

A I guess what I am saying is that when you have cine. film there are more pieces of information available on cine. film.

Q. Cine. films are available to the operator in the surgical suite, correct?

A. They are available after the case is finished. They have to be developed.

Q The field of vision, if you will, between the cine. film and the VXS was identical, or was there more of a view in the operative field in the cine. film versus the VHS? And if you need to take a look, please do so.

A I would have to take a look to see

Q. I would ask you to take a look and see whether they are the same or whether the VHS made it a smaller visual field than the cine.

A e can do that.

MR VADNAL: I guess for point of clarification, I mean, do you want him to look at the whole tape on the VHS and then look at the whole tape with the cine , or are you asking about a specific point in time?

Q One of the issues here, and I want to talk about,

for instance, standard of care of having to keep this catheter -- and I forget the name of the catheter that was used to deploy the second transport stent. Was it a Judkin's?

A. No, it was an Amplatz.

Q. That one is known to have an increased likelihood of causing a dissection. Do you agree with that opinion or not?

A. Yes, it does.

Q. Therefore, would you agree that there is a duty or a responsibility on the part of the operator to monitor for that complication when using that catheter as a result of that increased likelihood of a tear being caused?

MR. VADNAL: Objection.

A. The operator has to monitor for dissection regardless of what catheter he is using.

Q. This Amplatz catheter, is it know to specifically cause increased likelihood of tear at the junction of the right coronary artery with the aorta?

A. No.

Q. Where is it known to cause increased likelihood of tear?

A. Usually it is in the coronary artery itself.

Q. How about with the ostium and gaining access to the RCA? Let me finish the question. would there be an equal likelihood of increased incidence with use of that catheter at that area versus the artery itself?

A. Restate your question. I don't know if I understand.

Q. You said typically that catheter is associated with an increased incidence of complication in the RCA itself, correct?

A. Yes.

Q. Is that increased incidence associated not only within the RCA but at the ostium, as well?

A. Well, in order to do a cardiac catheterization, an angioplasty or a simple angiography, you have to place the catheter into the right coronary artery in this case. No matter which catheter you use, there is always a risk that you can have a dissection.

Q. But then would you define for ne how it is that this catheter possess an increased risk?

A. This particular catheter has a tendency when you turn the catheter into the right coronary artery to advance down the coronary artery more so than a Judkin's catheter, which tends to stay more at

the ostium or the opening of the coronary artery.
Q. So how is it, based upon the dynamics of what you just explained, that it has an increased risk of causing a tear?
A. It has an increased risk of causing a tear compared to other catheters because of the tendency of the catheter to, quote, "dive" into the right coronary artery.
Q. So then does it still cause an increased risk at the junction of the RCA with the aorta and the ostium?
A. Not usually.
Q. Is it lesser?
A. I don't think there is enough information out there where you could say that.
Q. Nevertheless, the standard of care still requires observation or monitoring of that area, the ostium, as well, for a dissection?
A. When one performs cardiac catheterization, you monitor the position of the catheter visually, and you also monitor the position of the catheter by the pressure curve that one records from the tip of the catheter.
Q. Where would that be recorded? Is that on a monitor, or is that recorded, as well, or where

is that?

A. When one is performing the cardiac catheterization, you are looking at an x-ray monitor to see where the catheter is in the x-ray field, and you are also looking at a hemodynamic monitor which measures the blood pressure from the tip of the catheter.

Q. What is it about the pressure that you monitor from the tip of the catheter with regard to preventing this complication? How does that work?

MR. VADNAL: Objection. Go ahead.

A. The pressure curve gives you an idea of whether the end of the catheter is within the lumen or the opening of the coronary artery or whether the tip of the catheter is against the wall of a vessel, whether it be the aorta or the coronary artery.

Q. And where is it supposed to be?

MR. VADNAL: Objection. Go ahead.

A. You want to position the catheter within the opening of the coronary artery.

Q. There has been reference made to a sinus

injection. What is a sinus injection?

A. The aorta, large blood vessel from the heart, has three sinuses, and the sinuses are cul-de-sacs, if you will. The coronary arteries come off of the coronary sinuses.

So when you do a sinus injection, you inject contrast out of the tip of the catheter into the sinus without the catheter being engaged in the coronary artery.

Q. So that means that the tip of the catheter would be up against the wall of the aorta, within the cul-de-sac, or otherwise?

A. No.

Q. It would be -- I am sorry.

A. It would be free within the aorta within the sinus.

Q. So the pressure curve would not be affected?

A. The pressure curve -- you would not do the injection if the pressure curve wasn't correct.

Q. So what if the tip of the catheter is in a flap, would that affect the pressure curve?

A. You have to define what **you** mean by "flap."

Q. I don't know if you noticed, I am sure you have now, it has been the entire point of contention, but eventually in the film of September 14 there

appears to have been a flap that was lifted, the intima from the media.

A. Right.

Q. And did you notice whether or not at any point in time whether an injection was made on that film when the tip of the catheter was within that flap?

A. When one looks at the cine. film or the videotape, you are looking at a two dimensional view. It is impossible to exactly pinpoint whether the catheter is within the dissection flap or behind it or in front of it or adjacent to it. It is very hard to tell that.

Q. Visually?

A. Visually.

Q. That is why I asked how it would show up on a pressure curve when something like that happens.

A. You could have a catheter within a dissection and have a normal pressure unless the catheter is against the wall.

Q. So excuse this archaic kind of a thing, if this is the flap being lifted, (indicating), and the catheter tip goes down into the flap, and this is the media, this is the intima, and it is down here, would that affect the pressure, more likely

than not?

A. Again, if the end of the catheter is against the wall, then it would likely affect the pressure

Q. I know that for the EKG portion of that monitor there are tracings that can be made

A. Yes

Q. Would those tracings reflect the pressure, as well?

A. The only time tracings are really made during the catheterization is when the physician asks the technician to record a tracing, for instance, a tracing in the aorta to record the blood pressure, a tracing within the left ventricle to record the pressure in the left ventricle But there isn't a tracing that is made in a continuous fashion during the whole catheterization.

Q. But my question was the tracing itself, would that reflect the pressure, the pressure curve that we just talked about, from the tip of the catheter?

A. A tracing or a recording of the pressure would reflect the blood pressure

Q. Forgive my ignorance So if this monitor is showing the EKG, it is also showing, as you said,

the pressure curve, correct?

A. Yes.

Q. So that if the physician requests the tracing be made of that, of any moment during the procedure, would then whatever information appears, meaning the EKG and the pressure curve, would that show up on the tracing?

A. Usually it would, but different monitoring labs have different recording devices. Most labs record the EKG and the pressure together.

Q. Going back to where I was before with the Judkin's catheter, then, despite whether it has an increased likelihood of causing dissection in the RCA itself or at the junction, there is still a duty or a responsibility to monitor that area, correct, meaning the ostium as well as the RCA?

MR. VADNAL: Objection.

A. You are referring to the Amplatz or the Judkin's?

MR. VADNAL: Amplatz.

Q. Amplatz. Thank you.

A. Can you restate the question?

Q. I just wanted to know whether or not there was a duty to see the whole picture, meaning not only the catheter in the RCA, but where it is at the junction, too, of the RCA where it is coming

around the bend from the aorta into the **RCA?**

**MR. VADNAL:** Objection.

A. The standard of care is to monitor visually and also monitor the pressure while you are performing the catheterization procedure. That is standard.

Q. So that the answer to the question would be yes, then?

A. The answer to the question is, as I stated, it is the standard of care to monitor both visually and also your pressure when you perform the cardiac catheterization.

Q. My question, though, was whether it was appropriate to keep within the visual field not only of the RCA itself but the junction, you know, the right coronary ostium where that catheter is coming around the bend and getting into the RCA?

A. Oh, I see. When you are performing a cardiac catheterization and you are moving the tip of the catheter, you have to look at the tip of the catheter and keep that in your field of vision.

Not uncommonly when you are performing interventions you are working at a different area of the coronary artery, and it is impossible to

keep everything in the field of vision.

Q So I guess the answer is no, then, there is no duty, then, to keep both the junction of the RCA where the catheter is engaging the RCA with the artery itself?

A. I didn't say that. I said it is impossible in certain cases to monitor where you are working in the coronary artery, which may be at the bottom section of the heart, with where the guiding catheter is, which may be within the coronary artery at the top section of the heart It may be impossible to fit that all in the field of vision.

Q. Are you able to give me a distance as to what field of vision is provided, meaning, is it like ten centimeters or would it be five centimeters, or how much of the area of the anatomy that you are able to see?

A. Well, it varies from cath. lab to cath. lab and it also varies depending upon the level of magnification you are using during the procedure.

Q Generally, for laxma 's purposes, are you able to give an idea of what the field of vision is? I mean, is it yay big (indicating) or as big as a baseball?

A. In general terms, when you are working on the coronary arteries, you have a magnified view to give you a clear look at a very small artery two or three millimeters in diameter.

When you are honing in on this very small artery, you don't have the entire heart in the picture.

Q. How does this magnification take place?

A. There is a switch.

Q. So it is up to the operator whether or not to magnify?

A. Yes.

Q. And the VHS tapes and the cine. films, do those show magnification or not?

A. Those are recorded in the usual coronary arteriogram magnified mode.

Q. Is that separate from the switch, then or is that additional magnification?

A. It is magnification. They are magnified views.

Q. But is there another switch, or does the operator have the ability to obtain additional magnification of these two to three millimeter arteries, if necessary?

A. Again, it depends on the cath lab

Q. These films, are they true to life sizes, or do

these show magnified arteries of Janice Gilbert?
A. They are magnified,
Q. Based upon your lab, for comparison sake, did it appear as though the magnification potential of your lab is greater than what you saw on these films?
A. In general terms, no, it is very similar.
Q. It is impossible to have it all within the visual field. How about in the instance of Janice Gilbert at or about the time that the second stent was being attempted to be placed, was it appropriate not to have that within the field of vision or not?
MR. VADNAL: Objection,
A. In this particular patient's situation, when one is working on a specific blockage angioplasty deploying a stent, one usualiy puts that particular area in the center of the field.
Q. And then does one attempt to keep the junction of the RCA, the ostium, within the field, as well?
A. It may be within the field, but there is no obligation to keep that in the field of vision.
Q. You used the word "deployed." I have learned since coming aboard on this case that getting a stent out there is different than plastering it

up against the wall, right?

Are there two different terms for getting a stent up to the dissection itself versus using the high pressure balloon to put it in place?.

A. When this case took place, there was a difference. Now, present day, in the year 2000, it is all done as one maneuver.

Q. So if you say deployment now, then that is the whole act of getting it into the right location and putting it into place?

MR. VADNAL: Objection. Go ahead.

A. Presently, today, most of the time the stent is delivered on a balloon, the balloon expands the stent, and you take the balloon to a high enough pressure to make sure that is firmly engaged into the wall of the artery.

Q. Whereas before, in Janice Gilbert's era, as a matter of fact with Janice Gilbert, how did it happen?

A. The type of stent that was being used with Janice Gilbert was delivered with a sheath, that is a covering over the top of the stent. The covering had to be removed. The balloon was inflated to stretch the stent, and then the guide wire was

left within st . Heath's system was removed , and a balloon was then -- a different balloon was then passed over the guide wire into the stent to completely expand the stent against the walls of the artery.

Q. That would be the Cobra high pressure balloon?

A. Cobra is one of the balloons that were being used in 1997, yes.

Q. Do you know which balloon was used here?

A. I would have to look and see which one it was.

Q. So how do you remove the Heath? In other words, the balloon is -- and back then would it still be 'Deployed'? Could you still use "deployed" for both of those acts, getting it out there versus the high pressure balloon, or are those two different words?

A When the stent is expanded with the balloon that comes on the stent, the stent is against the wall of the artery. The idea of using high pressure is to be sure that the stent is fully opposed to the wall of the artery. The dilatation balloon or the delivery balloon may have done that. But just to be sure that the stent is fully expanded, it became the practice to use high pressure dilatation of the stent.

Q. So would it be fair to say, then, that in 1995 the fact of getting the stent out there would be the delivery of the stent, versus making sure that it is opposed to the walls would be the deployment, or it is not so formal?

A. When you deploy the stent, you are expanding the stent, I guess you would say. That is what we call it when we deploy a stent, that means the stent is being expanded.

Q. But you said the beginning of expansion occurs even on the first delivery -- on delivery, correct?

A. The whole job may be done by simply delivering the stent, deploying the stent. The high pressure is insurance to be sure that the stent is completely expanded.

Q. So back in 1995, deployment is the same term, meaning from beginning to end, to getting a stent placed?

A. One could use deployment in that sense. You could use it that way.

Q. Based on your experience and recollection of that time period, were two words more often than not used, delivery versus deployment, or was it the deployment of the stent?

A I don't know.

Q Well, there is a lot of talk about deployment of the stent back in 1995 What does it mean to you?

A When I say "deployment of the stent," and what it means in our cath. lab is the expansion of the stent within the artery.

The delivery of the stent is the process of getting it through the guiding catheter, down the coronary artery, across the area where you want to place the stent. So I would call that delivery of the stent

Q Do you have to shoot a film with each of these steps that you are talking about? In other words, you have to deliver it, then you have to remove a sheath, and then you have to stretch with the balloon, right, correct?

A. Yes.

Q. And then the guide wire is still in. You deliver the Cobra balloon, if that is the first you are using, then the sheath has to be removed?

A No, there is no sheath removed

Q My question is: Through fluoroscopy is the technique that is used to visualize as you are doing this procedure; is that correct?

A. That's correct.
Q. With each introduction of each piece of equipment, as this is going on, must you use fluoroscopy to visualize?
A. Yes.
Q. So then with each one of these steps, for instance, to get the stent down, how many times would one, on average, have to use fluoroscopy to image getting this stent down an RCA?
A. Perhaps the words we are using are not correct. Fluoroscopy is the live image that you see while you are working. What is recorded on the cine. film is what you have to record when you push your foot on a pedal to save that piece of fluoroscopy, if you will.
Q. So fluoroscopy, though, is the visualization to help you do the procedure?
A. That's correct.
Q. And that is what we just talked about, you have to use fluoroscopy to visualize each time you want to introduce a piece of equipment or something like that, correct?
A. That's correct.
Q. Or I guess otherwise you would risk causing a dissection, or something of that sort?

MR. VADNAL: Objection.

A. You just can't do the procedure unless you are looking at what you are doing.

Q. So to lay a stent in 1995 with Janice Gilbert, for instance, the first stent that was placed here, on average, how many times would you utilize or a physician utilize fluoroscopy just to deliver the first stent?

A. I don't understand what you mean by how many times.

Q. Well, does it only take one shot to see if you are there? How does a physician actually --

A. It is continuous. You have your foot on the pedal, and you are looking on an x-ray screen and you see the patient's heart beating. You see the catheter. You see the guide wire. And you can see movement of the stent as you advance it.

Q. Then when would you use the contrast material?

A. The contrast material, okay. You would use the contrast material to gain better definition of where you are delivering the stent.

Q. So with each of these things that we talked about, sheath delivery of the stent, removal of the sheath, stretching of the balloon, etcetera, would you have to use the introduction of

contrast material?

A. You would not have to use introduction of contrast material for each step, no.

Q. When should you or would you use that?

A. You would use contrast material to further define where you are placing the stent,

Q. Is it more difficult to place a stent over a stent to deliver one stent through -- to deliver a distal stent over a proximal? Does that make sense?

A, It is more difficult to deliver a stent through a stent.

Q. Can you tell me how it is more difficult?

A. Specifically in this case?

Q. Yes.

A. In 1995 the stent system that was being used required a sheath or another tube, if you will, to cover the outside of the stent and protect the stent as you delivered the stent, as you moved the stent over the guide wire through the catheter through the artery.

In order to deliver the stent downstream from the first stent, you would have to pass the delivery system through the first stent downstream from the first stent and then remove

the delivery system back to then be in a position to deploy or expand the second stent.

Q. And with regard to the road map of her arteries, meaning whether or not this was on a curve or a bend, or something like that, did that make it more difficult for Janice Gilbert?

A. In general, this was not a tortuous or curvy artery to deliver a stent. It was not straight, but it wasn't nearly as tortuous as some arteries when it may be impossible to deliver this type of a stent.

Q. [redacted] at one time in this case was familiar with the types and the various associated terms used to describe the difficulty with which one would approach placing stents or working on arteries. Are you able to do so with hers in this one? In other words, the lesion in her RCA, was it a Type I, II, III, or some other description?

A. An A, B or C lesion.

Q. A, B or C.

A. The lesion itself was not a complex lesion, it was an A lesion.

Q. And the likelihood of success of angioplasty of that lesion would be what, or the success rate for that type of a lesion?

A. It is high.
Q. Are you able to give me a number? Is it above 98 percent?
A. I don't think it is above 98 percent, but I would say it is 90 percent successful.'
Q. Before this case started, I take it *you* had heard of Dr. Cabin?
A. Yes.
Q. Did you know of him at all before this case?
A. I actually knew of him before because one of my patients had a catheterization in New Haven, and he happened to be the physician on the cath. film. That is how I knew.
Q. Did you read his deposition prior to today?
A. Yes, I did.
Q. He said that the field of vision in the surgical suite or to the operator was greater than what is captured on cine. and VHS. Do you agree or disagree with that?
A Actually, what I think he said was the field of vision may have been bigger, may have been larger.
Q. That is why I am asking what your opinion is. Why don't you tell me what your experience has been as to whether or not it is the same, lesser

or greater than what you capture on cine. or VHS?
A. It is not uncommon that what one captures on cine. film is a portion of what the operator sees on live fluoro. So there may have been additional information around the edges of the picture, if you will, that will not show up on the cine. film.
Q. And as you testified today, the VHS, the clarity of the VHS is less than the cine. and, likewise, the clarity of the cine. is less clear that what actually appears live in the cine. suite; is that accurate?
A. No, that is not accurate.
Q. What is your opinion on that?
A. The clarity, in general, back in 1995, the clarity of the picture is best with cine. film.
Q. Why is that?
A. It has to do with the physics of recording the information.
Q. That the cine. will be better than what the doctor is actually viewing?
A. That's correct.
Q. Now, is that because of the reproduction from analog or digital?
MS. MASSEY: Impressive.

A. The cine, film is not recorded on analog or digital. It is directly recorded from a camera as the x-ray penetrates the patient and takes the picture on the cine. film.

Q. Have you had occasion to use one or both analog. or digital? Let me ask the question just directly. Which one is better, in your experience, analog or digital?

A. Well, you can't answer it simply. And the reason for that is right now most labs don't record cine. film any longer. Most labs record the catheterization in a digital format on a CD. And the quality of the image on the CD digital is very similar to the quality on the film, but not quite as high quality as you get on cine. film.

Q. What are you all using in your lab?

A. We have a digital lab.

Q. How long have you been using a digital lab?

A. Probably about four years.

Q. So 1995 would have still been analog?

A. The term "analog" usually refers to the VHS recording system that one sees in the cath. lab, and also the fluoroscopy is usually analog, except if you have a digital lab, then you have digital fluoroscopy.

MR. VADNAL: Just let me note an objection and move to strike any question or answer pertaining to equipment or the use of equipment that was not in existence with Janice Gilbert.

Q. Well, you have thoroughly confused me now, so I will just ask this question: Is there anything about the cine. films OF VHS tapes that you have reviewed that would lead you to believe that we have a better viewing capability of what was going on with Janice Gilbert now from these two sources than Dr. Nukta from his operative suite on that day?

A. The live fluoroscopy is never as good as the cine. film. And, in fact, sometimes the cine. film is developed when there is a question of what one has acquired during the catheterization.

Q. How long does it take to develop the cine. film?

A. Usually about 20 minutes or a half an hour.

Q. Is it customary that a cine. film is usually developed by the end of a procedure?

MR. VADNAL: Objection.

A. The cine. film is usually developed after the cine. is completed.

Q I think you have testified to that already. But

the physician still has the capability to go back and review something, a previous injection, while he or she is in the operative suite, correct?

A. The playback information is usually recorded on a videotape format. And that videotape format may be analog or it may be digital.

Q. So had Dr. Nukta wanted to, he could have had the analog VHS, if that is the equipment that was being used, to see what was going on to gain a better picture, if you will, than the fluoroscopy screen itself?

A. No.

Q. Because -- go ahead.

A. The fluoroscopy screen and the review on VHS is played over the same chain of communication, telecommunication chain. It will look the same.

Q. Well, this tape that we have then looks the same as what was being played there? No, because this was made for the cine. film. And is a VHS tape kept of the analog procedure that was done?

A. Usually there is a backup tape system, VHS tape system, in catheter labs in case something would happen to the cine. film before it gets developed.

But most labs do not keep two copies, a VHS copy, which is usually inferior in quality, if

you will, to the cine. film.

Q. I am going to go to your report now, Doctor, if you want to take a look. Dissection is different than perforation as a complication, correct?

A. Yes. Perforation would mean a hole in the artery.

Q And when you say "rare complication" in the first sentence of your second paragraph, first of all, you were referring to the dissection, how rare is that complication?

A. The dissection of the aorta during a cardiac catheterization is exceedingly rare.

Q. Are you able to give me any numbers?

A. No.

Q. Would you defer to the numbers that are reported in the literature in that regard?

A. Yes, I would defer to the numbers reported in the literature, which are in the order of one out of 50,000 or one out of 10,000, one out of 100,000. It is very unusual.

Q. And when you are talking about a rare complication for her, are you talking about the circumferential dissection, or any dissection being one millimeter or greater?

A. Significant dissection is rare of this type in

the ascending aorta.

Q. Well, do you have any opinion, for instance, when hers started in the aorta how big it was when it irst started?

A. Well, by definition, all dissections when they start have to start small and then get larger.

Q. Or extend? That would be another fair way of wording it?

A. They may extend or they may stop.

Q. So dissections can begin as small as less than one millimeter, even; is that a fair statement?

A. Well, the dissection begins as a separation, as a split, if you will, in the lining of the aorta. So that could occur as a large split or a small split.

Q. So it could occur even less than one millimeter?

A. It could occur as a very small area, yes.

Q. Do you have any opinion as to how rare the complication of a zero to five millimeter dissection is versus one like Janice Gilbert's?

A. I am sure that small dissections, the type you just mentioned, are more common than large dissections.

Q. Do you have any idea what the numbers are?

A. I do have an idea, and this is based primarily on

my experience over 20 years or more.

Q. Would you attribute the same numbers to a small, zero to five millimeter dissection, as you did just a moment ago, one out of 50,000 or 100,000?

MR. VADNAL: 10,000 or 50,000.

Q. Why don't you clarify, I am trying to get a feel for how often you think it occurs, zero to five versus the --

A. Aortic dissection of the ascending aorta must occur in one out of 5,000 to 10,000, maybe 20,000 times. Very rare. I mean, once you get into those high numbers, how rare is it? Very rare, most rare, the rarest.

Q. Have you ever seen a small dissection, zero to five, in the aorta?

A. I have seen a dissection in the ascending aorta.

Q. When you say "a," you mean just one in your career?

A. Two.

Q. How large were those two?

A. The one dissection actually extended from the ascending aorta and progressed all the way down to the level of the kidney arteries.

Q. Was that iatrogenic?

A. This was a catheter-related dissection.

Q. Do you know, was that your patient or a colleague's?
A. It was a colleague's.
Q. How were you made aware of it?
A. I actually performed a catheterization on that particular patient from a different approach so as not to enter the dissection area.
Q. You mean you were called in to assist?
A. I was called in to perform a catheterization from the femoral artery, and the dissection had occurred from the brachial or the arm approach.
Q. What artery was being worked on when this dissection occurred from the brachial approach?
A. The dissection actually occurred when the catheter entered from the shoulder, right shoulder area, into the aorta.
Q. Did it instantaneously extend all the way down to the kidney?
A. In a rather short period of time, yes, it did.
Q. Were you able to tell me how short of a period of time that happened?
A. Within a number of hours.
Q. One, two, three, four, five?
A. The timing of this particular dissection is difficult to pin down because the only way you

really see the dissection is if you put x-ray dye into the aorta.

Q. And --

A. So we knew there was a dissection. I then came back and did a catheterization after the arm catheterization had been completed, and we found that there was a large dissection.

Q. But why was it hard to pin down, I mean, the timing of the dissection because of the x-ray, the contrast or -- you lost me on that.

A. In order to see the dissection, the only way you can see the dissection on x-ray is you have to inject x-ray dye. So if you are not in a position to inject x-ray dye, you will. not see the dissection.

So the patient may be having a dissection watching television in bed, and you nay not see the dissection progress because you are not looking at it using x-ray dye under fluoroscopy or taking a catheterization of that dissection.

Q. So I take it you couldn't introduce dye on that occasion because --

A. We did introduce dye, and that is how we proved there was a dissection.

Q. That was after you were called in?

A. Yes.
Q. Why couldn't he do it through the arm approach, introduce dye?
A. He did do it from the arm approach and found out that he was in the false channel', which is in the dissection area.
Q. I am still missing something. And that is why you could not time it, then, because you had to be in there shooting dye? I don't understand why you couldn't do that while he was in there with the catheter?
A. We knew that there was a dissection when the arm catheterization was performed. The catheterization was stopped because the operator realized there was a dissection. The following day I went in from a different approach and was able to document that the dissection was not simply limited to the area that was evident on the day of the first procedure, but had extended all the way down to the renal arteries.
Q. And so the previous day, what was the last known length of the dissection?
A. It was not a one or two millimeter dissection, it was a significant dissection.
Q. So why couldn't he continue to inject contrast to

-- why did he just stop? Why couldn't he inject more contrast to further get a better handle on this dissection?

A. In this particular case he was not within the true lumen or within the true opening of the aorta, as we are talking about in the case with -- today. Dr. Nukta was in the true lumen of the aorta. This other case he was never in the true lumen of the aorta.

Q. So I guess the answer to that question, then, is he couldn't inject more contrast, he had to stop, not inject more contrast because the tip of the catheter was in the false lumen?

A. Me actually did inject contrast and did find out that he was in the false lumen, and he stopped because of the size of the dissection.

Q. That would have Seen standard of care, correct --

MR. VADNAL: Objection.

Q. -- to stop once you have a dissection like that? I mean, he didn't continue injecting contrast material in a dissection, correct?

A. In that particular case he was not in the true lumen, there was nothing to be gained by continuing the procedure, and that is why I was called in to do the procedure using a different

route.

Q. There is nothing to be gained. In fact, it would only cause more harm before you would gain a benefit in that situation, fair enough?

A. You don't know whether it would cause more harm. You just couldn't do the procedure if you are in the false lumen. It can't be done.

Q. Standard of care, if the catheter tip is in a false lumen, would be to stop and not continuing to inject contrast material into a false lumen; is that fair?

A. We have a problem, I think, with definition and where the catheter is. In Dr. Nukta's situation, he was never within the false lumen. He was in the aorta. In this other case, the catheter was in the false lumen.

Q. I am not even talking about Dr. Nukta. I am talking about the other case. I am talking about the tip of the catheter that is in the false lumen. Are you telling me it is standard of care to inject contrast material into a false lumen?

A. Sometimes we do, yes.

Q. How about in that case, was it standard of care for him to stop or continue?

MR. VADNAL: Objection.

A. In that particular case, contrast was injected to make the diagnosis.

Q. And once the diagnosis was made, you said he stopped. And I asked you: Was that standard of care?

A. That was.

MR. VADNAL: Objection.

A. That was clinical judgment at that time in that case, yes.

Q. In that case, that would have been standard of care, correct?

MR. VADNAL: Objection, again.

A. In that particular case it was prudent to stop, yes.

Q. What harm could have occurred had he continued injecting in that case?

MR. VADNAL: Objection.

A. It may not so much be the injection, but the manipulation of the catheter that could potentially perforate the artery, get deeper into the artery, etcetera. The catheter was in a position where it should not have been.

Q. And that is in the false lumen?

A. This was in the false lumen.

Q. In which artery are we talking about?

A This was in the aorta.
Q In the aorta. I had asked you a while ago which artery he was working on, Do you recall?
A That is why I am vague. He never had the catheter in the true lumen of the aorta to be able to work on either the sight or the left artery.
Q. If he had continued to inject contrast material, he could also have extended that dissection; is that true?
MR. VADNAL: Objection.
A. I did not say that.
Q I am asking.
A I mean, if you take it to the nth degree, he puts two quarts of contrast material into a false lumen, it has to go someplace.
Q Contrast material is hyperosmolar, correct?
A Contrast material is hyperosmolar.
Q And has the ability to draw water and increase in volume, correct?
A. Hyperosmolar may do that if it stays in the false lumen. But most of the time when contrast is in a vessel, it doesn't stay there, it is dissipated. It moves wherever the blood moves.
Q. I think my original question was, however, that

continued injections of contrast material into that false lumen could have extended the dissection? Do you agree or do you disagree?

MR. VADNAL: Objection.

A. Which case are we talking about?

Q. We are talking about the one that we have been talking about, this gentleman that you were describing your experience..

MR. VADNAL: Objection again.

A. That case the catheter was in the false lumen of the aorta, it was not in the true lumen. Contrast was injected, the diagnosis was made, and the physician made a judgment not to continue to manipulate nor inject in that case.

Q. My question, Doctor, was that had he injected into that false lumen, it could have caused an extension, correct?

MR. VADNAL: Objection.

A. That is conjecture.

Q. What was the outcome of the patient?

A. The patient had his dissection treated medically.

Q. What does that mean?

A, He did not have an operation.

Q. When you say "medically," though, was that observation when you say "medically"?

A Actually, the patient was observed for a number of days in the hospital, yes

Q. Was anything done to control his blood pressure during that time period?

A. I don't recall specifically.

Q. Would that be prudent practice, in other words, to make sure that the blood pressure is not elevated so as to cause undue stress on that already present dissection?

A If you are asking me what is the treatment of aortic dissection, spontaneous aortic dissection, control of blood pressure is one of the cornerstones of that treatment, yes

Q The dissection that we were just talking about, that dissection was not spontaneous, correct?

A That was not spontaneous

Q. It was iatrogenic?

A. Correct.

Q. And that case with iatrogenic dissection, treating with observation, is it prudent medical practice to watch the blood pressure so that it does not elevate?

A. With dissection, that is a standard treatment is to control blood pressure, yes

Q And when you control it in standard treatment

form, what is the goal, to keep it at -- where?
A. All the treatment strategies for dissection have been developed in people that have spontaneous aortic dissection. So everything we say from here on is an extrapolation from the data that has accumulated regarding spontaneous aortic dissection, which is much more of a common problem than what we are seeing in iatrogenic problems like this.
Q. What is the pathogenesis of spontaneous aortic dissection?
A. It varies.
Q. Is it usually attributable to cystic medial necrosis?
A. People with Marfan's syndrome have cystic medial necrosis, that is, the glue between the inner lining and the middle lining of the aorta is not normal, so that the lining of the aorta can separate.
Q. Were you saying a moment ago that the treatment, then, for iatrogenic dissections of the aorta was extrapolated from spontaneous dissections, then?
A. There are not enough people that have had these iatrogenic dissections to study them in any controlled fashion. But it is logical, it is

logica'l to extrapolate from the experience with spontaneous dissections, some of which have cystic medial necrosis.

Q. Are you familiar with, then, how to treat spontaneous dissections that occur in the aorta, ascending aorta, specifically?

A. Yes.

Q. What is the treatment plan for that?

A. The treatment plan for ascending aortic dissections is to lower blood pressure, as you have suggested. And to decrease the force of blood ejecting from the heart.

Q. Cardiac output, specifically, or some other --

A. Shear stress. You have to reduce shear stress.

Q. Thank you, Doctor. What are the treatment parameters, then, for lowering blood pressure, how is that achieved?

A. Usually -- a number of drugs can be used, but beta blockers are often used. Sometimes a drug called nitroprusside can be used.

Q. That is the heavy-duty drug, nitroprusside, correct?

A. That's correct.

Q. What is the goal in the numbers in trying to keep the blood pressure low?

MS. MASSEY: Object.

A. Well, with spontaneous dissection, you would like to reduce the systolic pressure into the low 100s, 110, 120 range, because often these people come in hypertensive.

Q. Is that due to some compensatory mechanism, or are you saying due to the -- why don't you explain.

A. People that have established hypertension are more prone to develop aortic dissections. So some folks present to the hospital with uncontrolled hypertension and also have dissection of the aorta. So they have really two problems.

Q Diastolic, what is the goal for diastolic in treating spontaneous dissection?

A Actually, most of the focus is not on the diastolic pressure, it is on the systolic pressure, because that is the force that the intima, or the inner lining, sees is the systolic pressure.

Q. Now, extrapolating from spontaneous to iatrogenic, are those two treatment parameters extrapolated, decreasing blood pressure and shear stress?

A If one has a dissection, spontaneous, or if one

has an iatrogenic dissection; the same type of considerations arise.

Q. Are any other treatment modalities instituted for iatrogenic?

A. I can't think of any right now.

Q. I started down this road with the question of a zero to five millimeter versus an extensive dissection. May we agree that Janice Gilbert's was an extensive dissection?

A. Yes, it was.

Q. Have you ever seen an extensive dissection like that before that will allow you to qualify the patient as extensive or not?

A. The patient we just talked about was an extensive dissection, yes.

Q. Now, it just occurred to me that if it went all the way down to the kidney, nobody was ever in the ascending aorta in that patient?

A. No, that is where it began, in the ascending aorta.

Q. And then made the loop over the ascending arch and then came back down?

A. That's correct.

Q. Was it ever determined whether that person had a diseased aorta?

A. That person had a diseased aorta, yes.
Q. What was the disease?
A. Atherosclerosis.
Q. I should have asked that question, then, a contributing disease which would have propagated. Was it ever determined whether that person had a disease of the order that caused the extension in and of itself?
A. The patient did not have Marfan's syndrome.
Q. Do you have an opinion as to what caused that patient's dissections to extend like that?
MR. VADNAL: Objection.
A. The patient had a diseased aorta.
Q. I will go back to a question I asked a long time ago, and I don't know if you answered it or not, but when he stopped the procedure because his catheter was in a false lumen, and you went in the next day, how long was that dissection when he last left that patient after that last injection?
A. When he left the patient, the patient had an ascending aorta dissection for sure.
Q. Did it affect the valve at a113
A. It did not affect the valve.
Q. Do you have any opinion, then, why it is with Janice Gilbert that she was unable to be treated

through observation versus that patient who had a dissection all the way down to her back side?

A. As you may have implied from your previous comment, if the dissection involves the aortic valve, that is one of the indications for surgical operation.

Q. If it doesn't involve the valve, was hers the type that could have been observed?

A. Perhaps.

Q. What is the likelihood, though?

A. These are the kind of cases where you sit down with your surgeon and you look at the benefits and risks and then try to make a determination.

Q. But you have said perhaps if the valve wasn't involved she could have been treated through -- well, medically treated through observation.

I am saying: What is the likelihood, are you able to give me a percentage scenario, as to whether or not she would have been able, without valve involvement, to be treated medically?

A. Many patients with aortic dissections involving the ascending aorta are treated surgically.

Q. Would you agree with me that, at the minimum, treatment of a dissection of an ascending aorta would include monitoring blood pressure?

MS. MASSEY: Objection.

A. Monitoring blood pressure is standard, standard of care, yes.

Q. What was the other dissection that you saw?

A. Actually, the other dissection was a patient that I had, and it occurred at some point after this case, and it involved the ascending aorta, and it involved the right coronary angioplasty.

Q. And what happened?

MR. VADNAL: I am going to get a continuing objection to every question and answer pertaining to this other patient, irrelevant and not likely to lead to the discovery of admissible evidence, but go ahead.

MS. MASSEY: Me, too.

A. The dissection involved the ascending aorta. It was during a right coronary angioplasty. And the dissection involved a substantial amount of the ascending aorta, did not involve the valve, and was treated conservatively.

Q. The patient survived, then?

A. Yes.

Q. No surgery?

A. No surgery.

Q Did you stop the procedure when you saw the

dissection?
A. Actually, I didn't.
Q. What did you do?
A. I had to complete the procedure.
Q. What did you do to complete the procedure?
A. It was an angioplasty stent procedure of the right coronary, not too dissimilar from this case.
Q. Why did you have to complete the procedure?
A. Because the objective of the procedure was to open up the right coronary artery.
Q. How occluded was it?
A. I don't remember specifically, but it was not a situation where we could simply stop and come back another time. We had to complete it. We were in the process of doing the procedure.
Q. Where did the dissection originate in tnat patient?
A. That dissection originated in the proximal right coronary artery and extended distally down the right coronary and also up in the aorta.
Q. I take it, then, did you ever take the catheter and inject it into the flap created in the aorta, in the dissection itself?
A. One of the things I think that is important to

realize is when you are doing this type of procedure there is a guide wire that is down in the coronary artery, and the guide wire guides the tip of the catheter. So even if you wanted to put the tip of the catheter into the dissection, not saying you wanted to, but even if you wanted to, you couldn't do it because the guide wire guides you into the artery, guides you into the right coronary artery.

Q. And assuming that to be true, that means that the catheter tip would be injecting contrast material into the coronary artery?

A. It doesn't necessarily have to inject it into the coronary artery. The catheter tip could be in the aorta.

Q. Did you take any steps to make sure that the catheter tip was engaged in the RCA rather than in the area of the dissection, so as to avoid injecting contrast and extending into the dissection and extending it?

MR. VADNAL: Objection.

A. This particular case, the mechanism involved was after the blockage in the right coronary artery had been stretched or dilated with the balloon there was a dissection as a result of that. It

had nothing to do with the catheter itself, the catheter tip.

Q. I am sorry, what caused the dissection?

A. When you open up a blockage in the coronary artery, the mechanism for that opening of the blockage is that you develop a dissection, a tear or a split in the artery that then allows the artery to relax.

Q. And it is that tear that went ahead and proceeded up the ascending aorta?

A. And also went downstream, too.

Q. When you said you continued, then, I take it what was your next step, you went ahead and placed the stent?

A. Yes.

Q. Did you take steps to control her blood pressure, the patient's blood pressure, I should say?

A. I don't believe the patient's blood pressure was significantly elevated in this case.

Q. Do you know Morton Kern?

A. I don't know him personally, no.

Q. Have you ever met him?

A. No, I haven't.

Q. Have you ever talked to him?

A. NO.

Q How about Dr. Botham?
A. No.
Q. Dr. Jeffery Graeber?
A. No.
Q. Alan Feit?
A. I have never talked to Alan Feit. I saw him present a paper at a meeting.
Q. What meeting was that?
A. It was either the American Heart Association meeting or the American College of Cardiology meeting.
Q. Do you know what his paper was about?
A. Cardiogenic shock.
Q. Is he a competent physician, as far as you know?
A. I don't have any reason to think he is not.
Q. I take it you haven't talked with any of the other experts in this case, correct?
A. No, I haven't talked to any of the experts in this case.
Q. You said you have never worked with Bill Meadows on a case other than this, or I think up to that point you had not worked with him, correct?
A. I don't believe I have.
Q How about since then have you worked with Bill on any other matters?

A. I don't think I have, no.
Q. I take it he has never contacted you about another case, then, correct?
A. Not that I recall, no.
Q. How about any of the other lawyers from Reminger & Reminger, have you ever consulted with any lawyers from their firm, past or present?
A. Yes, I have.
Q. Let's start off with how many, if more than one?
A. I gave an expert opinion in at least one other case, maybe more than that, in the Cleveland Reminger law firm.
Q. When you say at least, maybe more than one, can you approximate for me about how many?
A. Are you asking how many cases I have reviewed?
Q. Yes, let's say reviewed.
A. I have probably reviewed maybe ten cases.
Q. Over what period of time?
A. Probably eight years, maybe.
Q. Is that just the Cleveland office?
A. I have reviewed a case for Reminger in the Columbus office, and also one in Cincinnati.
Q. Of the ten cases that you reviewed, how many did you actually become involved in out of the Cleveland office to consult on a continuing

basis?

A. Two.

Q. And the other eight, did you tell them that the case was not defensible?

MR. VADNAL: Objection.

A. No, not all of them, no.

Q. Out of the ten, are you able to estimate for me how many you felt were defensible versus not?

A. There were some that I felt were not defensible, and there were others that I felt were defensible. I don't know the exact number.

Q. So when you say just reviewed, that is just to look at a chart, send it back, and no other involvement in the case?

A. A number of those, that is all I did, yes, maybe send a letter or something else.

Q. Well, to me, if you send a letter, that is tendering a report, you are actively involved consulting.

Is there a difference to you between simply getting a chart, giving an opinion, and sending the chart back and not: continuing to have involvement versus sending a report?

A. Yes, there is a difference.

Q. Over the last eight years, how many did you

review, consult on, produce a report, etcetera?
A. I am not very good with numbers on these things, but I would say that there were some cases that I looked at and I said, "I don't think this is defensible, I think the doctor is liable in this case"; other cases I reviewed and the attorney would say "Well, I don't need a letter or anything, just we will see where this case goes"; and there are other cases where I did send a report, some of the cases were settled, some went to court.
Q. In total, then, about how many times have you even been called by Reminger on a case?
A. As I said, probably about ten times total.
Q. And that would be just Cleveland, right?
A. No, that would be --
Q. Columbus and Cincinnati, as well?
A. Right.
Q. Are you presently consulting with Reminger in any other cases?
A. Yes, there is one in Columbus.
Q. How long have you been reviewing med. mal. cases?
A. Oh, probably for 20 years.
Q. Out of those that you review for Reminger, did any of those other cases have similar issues as

to this?

A. Aortic dissections?

Q. Yes.

A. NO, I don't believe so.

Q. And in the last 20 years, can you give me a number as to how many you were involved in for the defense of a medical care provider versus the patient?

A. I have not testified in court in that situation.

Q. I am sorry, which situation?

A. Against a medical provider.' But I have given opinions that I felt the physician or the medical care provider was clearly in error.

Q. I take it there is a reason, then, that you would give an opinion but you wouldn't testify in court?

A. No, it just never came up. I would testify if it came up.

Q. So over the last 20 years, about how many have you been reviewing on a yearly basis?

A. Early in my career, not often. And in the last, what did I say, eight years, more often than in the first ten years.

Q. So about how many did you do in the last eight years on a yearly basis, how many cases are you

involved in?

A. I would say a couple a year.

Q. When you say at least a couple a year, in how many of those are for the medical care provider versus the plaintiff?

A. Well, with Reminger, they are primarily a firm that is in the practice of defending physicians, so pretty much by definition they are not going to ask me to testify for the plaintiffs.

Q. My question is: Of those that you -- I mean, is it only Reminger that you review for, or are you reviewing for other people, as well?

A. I have reviewed for other firms.

Q. Are most of them Reminger cases that you reviewed?

A. Not necessarily. I have reviewed some for Roetzel & Andress here in town.

Q. My question was: Out of those you review on a yearly basis, how many are for the medical care providers versus the patient?

A. The majority are for the medical care providers.

Q. Is it nine out of ten, or can you give me a number?

A. I can't give you a specific number, but the majority.

Q. How about an approximation, 80 percent, 90 percent?
A. More than 80 percent.
Q. Do you know any members of the Reminger firm on a personal level?
A. No, I don't.
Q. How many occasions have you found yourself -- you said you have never testified for a patient, correct?
A. Yes.
Q. Did you mean in court or deposition testimony?
A. I have given deposition testimony on behalf of a patient, yes.
Q. How many times have you ever testified in court for a medical care provider?
A. Twice.
Q. When you reviewed the tape, at what point did you see the dissection in the aorta?
A. I saw the dissection the first time I reviewed it.
Q. At what point in the procedure, though, did you see it? You can describe it for me any way you can.
A. It was toward the end of the procedure, toward the end of the procedure.

Q. And that is the first time you ever saw the tape?
A. Yes.
Q. Did you run it through normal speed, or did you use a combination of running it through normal and partially slow motion, or how did you do it?
A. All of the above.
Q. Is that what happens in an operative suite, as well, if you are trying to diagnose something using all the stuff we talked about, the ability to go back and come forward, to check out a situation if one has to?
A. No, the video is usually better in an operative suite because it is specifically designed for replay. This particular tape, as you mentioned, is a videotape of a catheter film.
Q. I am sorry, I asked whether or not, as you said you did all of the above in looking at that for the first time, is there that capability, then, in diagnosing or checking out a problem in the operative suite that is similar, I mean, where you have the capability to use that equipment at hand?
A. Most catheter labs have a replay mechanism where you can review what you have previously recorded.

Q. You said it was late in the procedure. Did you take a look at the time code when you did it?
A. I did look at the time code, yes.
Q. But you have no recollection today as to where you felt it was based on the time code?
A. I am reading my report to see whether I mentioned the time code.
Q. Well, I am sure you didn't. I would be very. surprised if you did, even if I didn't read your report. But I am asking you, as you sit here today, do you remember the time code where you first the saw the dissection?
A. I don't remember the specific number, no.
Q. How about as you sit here today, do you recall the number where you first found the dissection?
A. I don't remember the specific number.
Q. So as we sit here today, you don't know the number where you first see an aortic dissection?
A. It was somewhere around 10, something had to do with 10.
Q. So you have it written down, then?
A. No, I don't. Those are my notations on the tape going back to 19 -- I guess '97.
Q. So what does the "101" represent?
A. I don't know.

Q. "105" and "108," and what is your handwriting there?

A. I said stent, 108 I can see a stent.

Q. But you believe the dissection occurred subsequent to placement of that stent?

A The dissection certainly occurred after the first stent, and you can definitely see it after the second stent.

MR. LOUCAS: I am sorry, could you repeat that.

(Record read;

Q. (Continuing.) We are talking about the aortic dissection, right?

A We are talking about the aortic dissection.

Q From that statement I take it you mean it happened after t e first but before the second stent, but you can definitely see it after the second?

A For sure you can see the dissection after the second stent has been placed, which also is after the first stent had been placed.

Q. This is true. Have you ever authored any articles dealing with this subject matter?

A. No, I haven't.

Q. You have read all of the experts' depositions so

far, with the exception, of course, of Graeber, that has not been taken?

A. I have read Alan Feit's, Henry Cabin's, and --

Q. Well, here is Feit's. Here is Morton Kern's. Have you read that one?

A. And Morton Kern's.

Q. Did you see any evidence in this case to support an argument that her dissection was spontaneous?

A. No.

Q. I see that you have certain portions of Dr. Kern's testimony marked with stars. Can you tell me why?

A. I received that copy last night and those are not my markings.

Q. So page 45, Pine 9, that would not be your marking?

A. No, none of the markings are my markings.

Q. Or 47, line 13; 49, line 3; 51, line 16; 53, line 24; 56, line 19; 59, line 7; 61, line 3; 62, line 20; 64 line 21; 65 line 24; 71, line 22; 73 line 14; 75, line 4; 78, line 4; 81, line 4 and 19; 83, line 1; 84, line 8; 86, line 7; 87, line 7; 88, line 13; 89, line 18.

Then whose markings would they be, Doctor?

A. I don't know. They are not mine.

Q. Or page 101, line 18; 103 line 7.

MR. VADNAL: I assume those were all read correctly, right?

MR. LOUCAS: I hope so. I hope so.

Q. (Continuing.) Let's take a quick look at the tape, Doctor, and I think we will call it a day.

Doctor, on the September 14 tape, did you find any evidence of calcification on the VHS tape of the September 14 procedure?

A. I didn't specifically note that.

Q. Well, do you want to run it through quickly, please, and tell me whether you see any evidence of calcification?

MR. VADNAL: I am going to have to rewind it because when I put it in it played a little bit.

Q. Doctor, if you want, I ax offering that to you. I mean, if you are comfortable stating here today that you did not see any and you want to rest on that opinion, that is fine. But if you want to take that opportunity, I would rather you have a look.

Is that one of Janice Gilbert's tapes on the machine there?

A. Yes.

Q. Which one is on the machine now?
A. 'Phis is the cardiac catheter.
Q. Okay. The 12th, or this is the 14th?
MR. VADNAL: No, the 14th is on there.
A. I am sorry, the 14th is on there,
Q. Would you prefer to use the cine. rather than that?
A. It is better quality.
Q. Okay. Why don't you go ahead and run through that and tell me whether you see any evidence of calcification.
A. Specifically where are you looking for calcification?
Q. Just period. We won't bite if the lights are out.
A. This is the left coronary. We are not interested in the left coronary.
Q. I want you to tell me if you see any calcification.
A. You can see calcification.
Q. Would you tell me what you just visualized? Was that the left coronary still?
A. No, it is not the left coronary, it is probably the right coronary, probably the right coronary.

Q. Please describe for me -- I know you went to the left, to the artery that appeared furthermost to the left.

A. We are now looking at the injection into the left coronary artery, and there is a linear area of calcification in another area, which is probably the right coronary artery, which perhaps we can confirm or deny as we go through.

MR. VADNAL: And just the record should reflect when the doctor was speaking he did have the cine. film in a stopped fashion or in a freeze-frame fashion.

Q. Go ahead, Doctor. At this point why don't we limit it to the aorta.

MR. VADNAL: Calcification in the aorta?

MR. LOUCAS: Yes, calcification in the aorta.

A There is calcification of the right coronary artery.

Q. I said at this point let's just do it in the aorta.

A. There is an area of calcification in the aorta.

Q. And why don't you go ahead and describe that anatomically, please.

A The area of calcification is superior to the right coronary ostium.

Q. And can you tell where in the procedure you are when you are describing that?

A. This is at the diagnostic portion of the catheterization, which is using a multipurpose diagnostic catheter.

MR, VADNAL: What is your next question?

Q. Go ahead. I just wanted to know whether you see any area of calcification in the aorta. That is the whole purpose of us going through this right now quickly.

A. Yes, there is, there is calcification in the aorta.

Q. Is it in the area of the dissection, then?

A. At this point I don't see a dissection.

Q. Do you believe that that calcification is in the area of the aortic dissection that we know occurs later?

A. The calcification is in the same region of the aorta where the dissection is known to have occurred later in the procedure.

Q. And is it your opinion that that is what caused this dissection? I am looking at your report

where you talk about that she had an extensively diseased aorta.

A. The extensively diseased aorta is an opinion based upon the fact that she had a very large dissection; therefore, she had a very diseased aorta.

Q Are you familiar with any literature that supports that opinion?

A. When one has dissections, as we discussed earlier, you can have dissections with Marfan's syndrome and you can also have dissections spontaneously in patients with atherosclerosis. So usually dissections do occur in the setting of a diseased aorta.

Q. But this is an iatrogenic, and you are saying that the calcification had the same effect on her and just caused her to split like this?

A. The calcification is a marker of atherosclerosis, which is a disease of the aorta.

Q. It is my understanding that with spontaneous dissections, it is mostly due to a diseased media; is that your understanding or not?

A. Not necessarily. It can occur in patients with extensive atherosclerosis.

Q. Why don't you tell me what the breakdown

percentage is between those that occur with atherosclerosis versus a diseased media?

A. Can you state the question again.

MR. LOUCAS: Would you read it back.

(Record read.)

A. The majority of people with dissection will have atherosclerosis as their cause rather than a Marfan-like syndrome.

Q. You are talking about spontaneous, correct?

A. That s right.

Q. How about iatrogenic?

A. I can't tell you what the breakdown is. This is a rare complication.

Q. What else causes you to believe that it was calcification that caused this dissection?

A. I don't think I said that the calcification caused the dissection.

Q. Well, tell me what the association is for Janice Gilbert between her calcification and the dissection, if any.

A. The calcification is a marker of atherosclerosis. By definition, she has disease of her aorta.

Q. Finally, the autopsy documented a severely diseased atherosclerotic aorta, which may further

predispose t'o aortic dissection. Are you saying that more likely than not the extent of her calcification predisposed her to this aortic dissection?

A. What I am saying is atherosclerosis is a predisposing factor to aortic dissection. The autopsy showed she had an extensively diseased atherosclerotic aorta.

Q. But is it your belief or your opinion, I am just trying to get -- I want to know what you ar going to say trial, that is all.

A. Right.

Q. Are you going to get up at trial and say it was her calcification in her aorta that caused this dissection to extend and propagate?

A. The atherosclerosis I believe had a large portion to play in this patient's dissection that propagated, yes.

Q. Well, there is a difference between the beginning of an extension of a dissection and what we know happened to her, the circumferential total extension. And which one is it? Are you saying it caused the first one and the extension? Or why don't you just tell me fully what your opinion is going to be?

A. I believe she had an iatrogenic dissection.
Q. Okay.
A. The dissection was complicated by the fact that she had a very diseased aorta.
Q. If she didn't have the diseased aorta, would it have changed her outcome?
A. What I am saying is that if you look at people who have aortic dissections, atherosclerosis is the more common underlying cause for the dissection. She had underlying atherosclerosis.
Q. Do you think that was the cause and not the catheter, or do you think it was --
A. I think there was iatrogenic dissection of the aorta. I think the catheter caused the dissection. She also had a severely diseased aorta.
Q. So I take it she should not have been a candidate for this procedure with such a diseased aorta?
A. No, that is not true.
Q. You also mentioned blood pressure as being the culprit for propagating the dissection. Is there a difference, then, between the calcification you have alluded to as being a known cause for dissection versus the blood pressure propagating it or extending it?

A. As we discussed earlier, if someone has a dissection, blood pressure is one of a number of factors that may contribute to the progression of the dissection.

Q. Do you know what caused the 2:00 complaint of chest pain?

A. 2:00?

I am sorry, I am looking at the invasive cardiology intraoperative record.

A. Let's see.

Q. Here you go, Doctor. It should be in yellow.

A. "2:00, patient complains of chest pain. Dr. Nukta aware."

Do I know what caused the chest pain?

Q. Yes.

A. No, I don't know what caused the chest pain.

Q. De you know what the likely cause is of the chest pain? Are you able to give an opinion one way or the other?

A. Well, in her case it may have been ischemia, because she was having an angioplasty. That would be a likely possibility.

Q. Well, when you use the words together "likely" versus "possibility," that makes things very confusing, as you probably know.

So do you have a likely cause or an opinion for what caused her 2:00 complaint of chest pain?

A. You are going to have to review that. What time did the catheterization start now?

Q. I want to say 1:30.

A. 1:35 it says, yes. I would say that the likelihood is that she was having chest pain because she had a blockage in her coronary artery.

Q. And how about increasing complaints of chest pain at 2:30?

A. Again, that may have been ischemia again, coronary problems.

Q. And at 3:02, "Falling heart rate second to AV block, and the pacer is activated." Do you have any opinion as to what occurred at 3:02 necessitating that?

A. Usually AV block is associated with a right coronary angioplasty.

Q. Do you have any opinion as to the documentation as to when the dissection of the aorta occurred real time after looking at the documentation in this case?

A; I must tell you that I did not review these medical records last evening, but I reviewed them

in 1997. So the time lines are a little vague in my mind at this point.

Q. Why don't we go back to the cine., and take me to where you see the dissection, Doctor.

A. I think at this point you can see the dissection. Here we are looking at the right coronary artery. There appears to be a stent that is being delivered downstream from the first stent, and there is a linear collection of x-ray dye just below or inferior to the right coronary artery.

Q. Okay. Now, we already talked about what it means to deliver versus deploy a stent. First of all, how do you know that that is a stent right there?

A. The stent delivery balloon has two markers, one on each end. And the delivery sheath has a marker on the end. So you can see the delivery sheath outside the orifice or the opening of the right coronary artery. And you can see the two markers on the balloon.

Q. Which balloon is that?

A. This is the Johnson & Johnson balloon that expands the stent, The stent is mounted on that balloon.

Q. So now as we were talking about before -- all

right, so he is just putting it in place right now?

A. He has expanded the balloon, which expands the stent.

Q. Now, what standard of care -- first of all, is it standard of care to recognize the dissection at this point?

A. I am not sure that it would be recognizable at this point. It may have been, but it may not have been recognizable. It may not have been recognizable at this point.

Q. Why not?

A. Well, as I said, the cine. films are of better quality than what one sees on fluoroscopy when one is working in the cath. lab.

Q. So is this the only shot where you see the balloon, or is there another shot where you actually see this second stent?

A. I would have to go through it frame by frame. I didn't specifically look for that point.

Q. Is this suspicious, however, when you say may or may not, is this something that bears witnessing on the next injection or next shot? In other words, should you watch it at this point?

A. Let me say if we are going back retrospectively

looking for a dissection, looking for the first hint of a dissection, you are much more likely to detect it here on cine. film, better quality than you will when you are working in the cath. lab and your focus is going to be delivery of that stent.

Q. My question, though, was at this point should you start to watch that?

A. If you see it, you certainly need to take the steps that you normally would take to be cautious about that. If you don't see it, though, you can't react to it.

Q. Well, why would you not see it, if you are not looking at it you mean?

A. It may not be visible as clearly on fluoroscopy. And you also don't have 20/20 hindsight to be able to look back and say, "Oh, there it is, it is just beginning."

Q. Why don't you take me, then, continue through this injection, please. Is this the same injection that we just saw, you know how the screen just blanked out, or are we looking at the same injection, just to clarify?

I would like you to go to each injection now. That was an injection. Now take me to the

next, what you believe, injection.

A. Let me clarify it further, perhaps, because this is not an injection, this is a cine. picture of the balloon being inflated, There is no dye being injected on this picture.

Q. Thank you. That is because you can see the balloon without the dye; is that it?

A. If there were dye being injected, the entire right coronary artery would be opacified like the balloon is opacified. There is x-ray dye in the balloon which allows us to see the balloon when the balloon is inflated.

Q. Got you. Okay. So please go to the next documentation of something different. This is the next shot, if you will?

A. The next picture we see, the next picture we see is of the right coronary artery. The balloon system and sheath have been removed. We don't see that at this point. And we see at this point a definite dissection.

Q. The balloon system and sheath have been removed?

A. Yes.

Q. What is left, then?

A. The guide wire.

Q. And has the high pressure balloon then been

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inserted?

A. I don't see a balloon in there.

Q. Now, does this rise to the level that it should be seen?

A. This degree of dissection would be noticed, yes.

Q. At this point, what duties or what does the physician do at this point? What is the standard of care?

A. At this point you want to be sure that you have completed the right coronary angioplasty and stenting procedure.

Q. What is the benefit of that?

A. Well, let me say it the other way. The risk of not completing the right coronary angioplasty stenting procedure is you may develop an occlusion or a total blockage of the artery that you have just worked on.

Q. Now, you said before that some of the balloons are adequately delivered in the first attempt. But as an insurance policy you go back and make sure through the high pressure --

MR. VADNAL: Objection.

Q. I am paraphrasing. How do you know which of the two is going on here? How do you know, for instance, that this isn't adequate or that y u

may be jeopardizing her by completing this procedure?

A. In 1995 the standard was to deliver the system and then to go back with the high pressure. You may get an idea of the success of the procedure from angiography, or you may get an idea from ultrasound if you ran an ultrasound probe through the artery, you could see how fully the stent had been expanded.

Q. Now, I take it just injecting contrast is not the same as an angiogram to see how clear, how wide it is.

A. Angiogram is injecting contrast.

Q. So he could, technically speaking, at this point shoot some more dye in to see if it is wide enough?

A. That's correct.

Q. Now, how would you classify that dissection of the aorta right there?

A. What we see is contrast in the dissection. You don't know whether you see the entire dissection or not.

Q. Are you able to classify, nonetheless, in any way in any term that you so see fit?

A. No.

Q Does it involve the valve?
A It may involve the valve, but on a still frame you can't see that.
Q. What is the standard of care at this point with regard to that dissection, regardless of what is going on with the RCA? What can you do? What has to be done with that dissection at this point?
A. Well, the dissection will either remain as it i or get worse. Those are the two options.
Q And what do you do to insure that it remains the same?

MR. VADNAL: Objection.

A What you need to do is what is most appropriate for the patient, not for the dissection.
Q. And your opinion is to continue with the treatment at this point?
A. What I am saying is it is important for the patient to know whether you have completed the right coronary angioplasty stenting procedure.
Q. And that is through the angiogram, another shot of dye?
A. Yes.
Q. If it is sufficiently open; what has to be done, then, with this dissection at this point?

A. Nothing may need to be done, or, conversely, you may need surgical intervention.

Q. And I guess the way to find out is to treat medically first, and observe her and see if she deteriorates, or how would you do that?

A. You would want to do some additional analysis to see whether the valve is involved, as you suggested.

Q. Is one of the ways that that could be done a transesophageal echocardiogram? Am I coming close?

A. In the year 2000, transesophageal echo would be a good diagnostic tool, yes.

Q. How about in '95?

A. I don't know whether it would be available in 1995 or not.

Q. Is that one method?

A. That is one method, yes.

Q. What is another method? I think we are trying to determine whether or not she may be observed and treated medically or to determine whether she needs surgery?

A. You could do a dye injection into the aorta, which was done, an aortogram.

Q. And the aortogram, is there any risk at all, I

don't care whether it is .001 percent, of extending the dissection with an aortogram? I am talking about risk, not what actually happened here.

A. The aortogram has been the gold standard for diagnosing aortic dissections.

Q. By the time the aortic dissection is done here, you would agree with me it is already diagnosed? At that point it is a matter of determining the extent of it?

A. The extent and the treatment.

Q. In '95, that would still be the gold standard over the transesophageal echo?

A. The aortogram has been the gold standard.

Q. How about today, in this situation where you already diagnosed the dissection, you want to assess treatment and extent of dissection, which one is superior?

A. I don't know if any one is superior. There are certain areas on the aortogram that you get a better look at and others the transesophageal echo gives you a better look.

Q. Does the aortogram run a risk, though, of extending the dissection?

A. The aortogram is done to diagnose the problem. I

don't know of cases where it has extended the dissection once you have the catheter in the aorta.

Q. What is the likelihood, through observation, that this at this point in time, would have healed medically?

A. Well, in this particular case we already know that it involved a valve.

Q. Go ahead.

A. So it is a nonquestion, if you will.

Q. So you are saying as of this point when the second stent is down, do you have an opinion when the valve became involved?

A. We can run the films and try to determine that.

Yes, you can.

Q. All right. At this point in time, though, you have no opinion as to, more likely than not, what her treatment plan should have been had this procedure ended here or its success rate?

A. Can you rephrase the question?

Q. Before we move on, I would like to get a feel from you as to had he stopped right now what her outcome would have been, more likely than not?

A. Her outcome may have been no different.

Q. But more likely than not? "May" means maybe.

A. I just played the film back and forth to get an idea of whether the valve was involved. At this point in time the valve is involved.
Q. It is involved?
A. It is involved.
Q. And how was it that you based your opinion upon this film that it was involved?
A. You can see the x-ray dye when it is injected in the aorta, and also leaking into the left ventricle, which is separated by the aortic valve.
Q. And what is the significance of that, then, at this point in time?
A. That indicates that the valve is involved in the dissection process.
Q. Does that mean, then, that she would need surgery immediately on the valve?
A. Aortic regurgitation or leaking aortic valve is an indication for aortic surgery.
Q. But does it have to reach a certain grade before it is indicated for surgery? In other words, is it minimal? I know by the time this procedure was done it was at a Level III or something like that. How would you grade this aortic regurgitation at this point?

A. It is difficult to be sure because an aortogram is not being done at this point in time. But the amount of x-ray dye you see in the left ventricle suggests that it is more than minimal.

Q. Moderate or more than minimal approaching moderate?

A. It may be severe at this point.

Q. How about more likely than not more than minimal approaching moderate?

A. More likely than not it is severe.

Q. Right now she is a candidate for surgery, in your opinion, if it was severe, or is that something that you defer to the CT surgeons?

A. Obviously you have to consult with the CT surgeons, but a dissection resulting in severe aortic regurgitation is an indication for surgery.

Q. Is there any likelihood of medical treatment being enough right here if things stopped?

A. It is unlikely you are going to do anything with medical treatment to substantially change the outcome at this point in time.

Q. And that is due to?

A. Aortic valve involvement.

Q. Meaning she is a candidate for surgery, or are

you talking about changing the outcome with regard to the dissection, the extension of the dissection?

A. Which dissection are you talking about?

Q. The aortic.

A. The aortic dissection. The fact that the dissection involves the valve, and it appears that it is severe, and we certainly know that it was s r , makes her a candidate for surgery, sur

Q And has things stopped right now, what is the likelihood the dissection, aortic dissection, would have extended or not?

A. We don't know whether the aortic dissection has extended from this point forward. We don't know that.

Q. Would you please take me to the next picture, then. Did you take it back just now?

A. Yes.

Q. To the point of the second stent that we talked about before?

A Yes

Q Now you are proceeding forward again?

A Yes. At this point in time we can see the aortic regurgitation. We can see contrast in the

dissection, and we can also see the dissection of the right coronary artery at the area of the second stent.

Q. Now, is this a new picture?

A. This is the one you want me to go to, the next picture?

Q. We were at the one with the stent, and then I thought we went to one immediately after where there was no equipment there, meaning guide wires or anything. Was that the one just after that?

A. Let me go back and check to make sure that we are both on the same page here.

MS. MASSEY: I thought the last one was there was just a guide wire, no balloons, but there was a guide wire.

MR. LOUCAS: Okay.

A. That is the stent. This has the guide wire in it. You can see the dissection.

Q. Now, how is the passage, can you tell yet, of the stent?

A. As I said, you can see still a significant dissection in the right coronary artery.

Q. So the second stent wasn't placed -- I don't want to say wasn't placed properly, but the dissection is still in need of repair?

A. The dissection is not totally covered, that's right.

Q. But how about the flow through, is there impaired flow through the stent?

A. The flow of blood is one indicator we use. And the flow of blood appears not impaired at this time, although these is a significant dissection.

Q. Is the blood escaping from the dissection, the blood flow?

A. We have to determine which dissection we are talking about now. There are two dissections. There is a dissection in the coronary artery, and there is also a dissection in the aorta.

Q. When you said there was still a dissection, I thought you meant the one he was trying to repair with the stent?

A. That's correct, in the coronary artery.

Q. That RCA dissection, is there a leakage of blood flow through that dissection? You said the blood flow through the stent is adequate. I want to know whether it is leaking through the dissection into any adjoining surface or outside of the coronary artery?

A. I don't see any x-ray dye leaking out of the artery.

Q. Now, if we can go to the third picture. We have covered two now, let's go to the third. The first being, of course, the stent with the balloon.

MR. VADNAL: I just want to know, the word "third picture" could mean anything in this.

MR. LOUCAS: I am asking the doctor specifically to go to each new picture. We used his terms so that we would be on common ground.

A. This is next picture,

Q. What do you see there?

A. You can see x-ray dye in the false lumen of the aortic dissection. You can see a guide wire in the right coronary artery, and you can see the pacemaker catheter.

Q. And at this point in time this was another injection, I take it, or not?

A. Yes, another injection.

Q. Do you know the purpose of that injection?

A. The purpose of this injection, I assume, is to look at the dissection in the right coronary artery, where the stent had been deployed, placed.

Q Where is the tip of the catheter?
A. The tip of the catheter is at the ostium of the right coronary artery.
Q All right Doctor, if you could go to the next picture Before we even talk about that one, did you notice in the last one any difference in the flow through that RCA, whether it was impeded or not, or whether there was leaking outside of the RCA?
A. No, I didn't notice any difference.
Q. Now, on this one, what do you see here?
A On this particular picture, the guide wire is still in the right coronary artery The pacing catheter is still in place, and the guiding catheter has been pulled back slightly into the aorta.
Q. Now, do you know what the purpose of that would be or what the possibilities are for that?
A. This is the injection into the sinus of the aorta.
Q. And what is that purpose? What is the purpose of that injection?
A ell, when you inject into the sinus you can see the extent of the dissection about the ostium of the right coronary artery

Q. At this point in time, what is the extent of the valvular disruption that you see?

A. At this point in time there is more x-ray dye in the aorta, and you can see that the aortic valve is leaking severely.

Q. Has it worsened?

A. I don't know whether it has worsened from the previous picture or whether we are just seeing it better because the catheter is now injecting contrast into the aorta rather than down the right coronary artery.

Q. How about the patency of the RCA and the leakage outside of the stenting?

A. The dissection outside the stenting? You used the word "leakage."

Q. Leakage, is there any dye leaking from the RCA? We talked about patency of the stent and whether or not any dye was leaking in that area.

A. I guess I don't understand your question about leakage.

Q. I want to see whether or not there is a hole in the RCA which may jeopardize her and needs further repair, or whether it is okay to stop at this point.

A. Well, there was never any evidence of a hole in

the right coronary artery. But there is evidence of disruption of the lining of the artery, which is the intima, and that is dissected, you can see that.

Q. We talked about how to treat that aortic dissection before, and you said, "Well, he could go ahead and finish the job in the RCA and make sure that it is not impeded," etcetera.

A. Correct.

Q. What are the treatment options at this point in time?

A. Well, I would say at this point in time you really don't have a good picture on this one run of the right coronary artery. So we can't say anything about the dissection of the right coronary artery at the area of the second stent on this picture. We can certainly say that the aorta has been significantly dissected, and there is leakage of blood into the left ventricle.

Q. And so what is the standard of care with regard to the aorta, the aortic dissection?

A. At this point in time with severe aortic regurgitation, the patient would become a surgical candidate.

Q. That would be standard of care?

4. For this degree of aortic regurgitation, surgery would be the treatment of choice.

Q. --Please take me to the next picture, then. What do we see there?

A. The catheter has been advanced slightly to the ostium of the right coronary artery, and now the dissection in the right coronary artery at the area of the second stent is visible.

Q. Is it threatening to collapse or cause her death or risk of death?

A. Yes.

Q. So what happens now?

A. Well, at this point in time you have an option of trying to cross that dissection with a balloon or another stent.

Q. What would the purpose of the balloon be?

A. Sometimes the balloon is used to tack up or to push the dissection against the wall.

Q. What is the basis of your opinion that she is at risk of death right now?

A. Well, risk of death right now?

Q. From that coronary dissection.

A. If you look at angioplasties that are performed with significant residual dissections, there is a substantial rate of acute closure or total

blockage of that artery, which could result in a very large heart attack.

Q. What characteristics -- well, first of all, where is the stent placement with respect to the dissection? Is it at the area of dissection or is it distal or proximal to it?

A. The area of the stent is probably proximal to the area of dissection.

Q. So he never got the stent on the dissection; is that it?

A. I can't tell for sure because this particular stent is not clearly visible even on x-ray film.

Q. So you see the dissection, but you don't know where the stent is because it is not visible?

A. The stent is not clearly visible on these films.

Q. So it could be right at the area of the dissection?

A. It is probably not. It is probably prior to the dissection.

Q. What do you base that on?

A. Well, if you look at the artery prior to the stent, there is some smoothness of the contour of the artery, and that would suggest that the stent has expanded the inner lining against the wall of the artery, giving it a smooth contour.

Where you see the dissection or the irregular area, that would suggest that there is not a stent there.

Q. All right. Please take me to the next picture.

A. The next picture is the aortogram.

Q. All right. Thank you.

Do you know whether or not he ever got the high pressure balloon on the stent?

A. In reviewing his catheter note, you can correct me if I am wrong, I think he says he did not get the high pressure balloon across the second stent.

Q. So what would be an XPRT 3.0 balloon?

MR. VADNAL: R2D2.

A. It is another balloon, not a high pressure balloon, I believe. I think it is made by USCI, I believe.

Q. How about an Eclipse 3.0?

A. That is a standard angioplasty balloon, not a high pressure balloon.

Q. In light of what you saw there, in light of the dissection, the aortic dissection, had a high pressure balloon been deployed in the presence of that, would that have been substandard care or not?

A. No, I don't think so.
Q. Why not?
A. As I stated, when you are working on the right coronary artery, you want to do everything you can to try to complete that part of the procedure to insure adequate blood flow down the right coronary artery.
Q. But the stent was not at the area of the dissection, so of what benefit would it be to apply high pressure to a stent at that point in time while risking worsening of this aortic dissection?
A. Well, there would be two possibilities. One possibility is the stent that you have deployed has not been high pressured, so it is not, perhaps, fully expanded. And the other possibility is you have a narrowing or a dissection distal to what appears to be the stented segment.
Q. What risk are you running to the aortic dissection?
A. I don't think the aortic dissection is materially changed by what you do in the right coronary artery at this point in time.
Q. And why not?
A. Because your guide wire is controlling the tip of

your guiding catheter, and you are able to direct your balloons and your stents, if necessary, in the correct direction.

Q. I take it from your discussions here this evening that you are not of the opinion that when you have an aortic dissection that you have to stop the procedure?

A. I am of the opinion that you have to look at the patient and then make a decision what is the best course of action.

Q. And in this patient at no time did you have the opinion where things should have stopped and nothing more to be done with the RCA, correct?

A. In this particular patient, my particular approach would have been to complete the procedure and insure that the right coronary artery was as completely treated as possible.

Q. Do you have any idea how long the extension was at the time that he finished the angioplasty or the interventive procedures?

A. On the aortic route injection you can see that it is a very extensive dissection involving the ascending aorta, nearly an entire length of the ascending aorta.

Q. And based upon that and the operative findings,

does it extend at all from that point to the time in surgery?

A. The aortogram shows a very extensive dissection. Whether it extended further, I can't be sure.

Q. More likely than not do you have an opinion as to whether it extended further at all from the end of the procedure to the time that we see the surgical findings?

A. No, I don't have an opinion,

Q. Do you have an opinion as to what the percentage likelihood of success of surgery would have been immediately after the aortogram?

A. The success of 'surgery I think would have been the same as it was.

Q. Fatality?

A. Well, in her particular case, she died as a complication of the aortic dissection.

Q. What do you think is the cause of her death?

A. The right ventricle.

Q. You are aware that they were -- well, what is your opinion as to why her right ventricle failed?

A. Probably multiple reasons.

Q. Why don't you go ahead and list them for me.

A. One of the reasons, as I stated in my letter, was

tha surgeon was unable to deliver cardioplegia solution into the right coronary artery

Q. What are the other reasons? You said there were multiple.

A. This patient has a dissection remaining in the right coronary artery

Q. And you are saying the right coronary artery is what caused her right heart failure. What does that have to do with the cause of her death?

A. You develop right ventricular failure as a result, most commonly, of infarction or lack of blood flow to the right ventricle, which is supplied by the right coronary artery

Q You never saw by the end of that film shutdown of the RCA, correct?

A That's correct.

Q Did you find any description in the operative findings of a shutdown of the RCA?

A I don't understand what kind of description.

Q The dissection, I am sorry did the dissection -- did the flap from the RCA dissection finally close off and cause a heart attack on her?

A. There would be no way of knowing.

Q. So you saw no evidence of that on the surgical

findings.

A. The surgeon can't tell that. He can't look at that artery and tell whether that flap is closed or not.

Q. But what the surgeon did notice is that he could not give the retrograde cycloplegia?

A. Cardioplegia.

Q. Because of the state of the aorta; is that correct?

A. That's correct.

Q. And it is because the dissection was so extensive; is that correct?

A. It is because the dissection involved the origin of the right coronary artery.

Q. And he couldn't get in there because of the flap, correct?

A. By definition, the origin of the right coronary artery was involved.

Q. Do you know, more likely than not, which one caused the right heart failure, the inability to give the cardioplegia, or that a flap closed down on the RCA causing an infarct?

A. I can't tell you which one. I just know that her right ventricle wasn't working after surgery.

Q. Had this angioplasty been successful of her RCA,

do you have an opinion as to what her life expectancy would have been if she were 62 years old?

A. No, I don't have a specific opinion about her life expectancy.

Q. Is there any reason to believe that she would not have lived a normal life expectancy for a woman her age had the angioplasty been successful?

MR. VADNAL: Objection.

A. She would not have lived normal life expectancy given she is 62 with coronary disease and extensive atherosclerosis of her aorta.

Q. Thank you, Doctor. I have no further questions.

Do you have any plans to testify, as we sit here today?

A. What is the date of the trial?

MR. VADNAL: The trial is the 23rd.

A. Of this month? That is what day of the week now would I be testifying?

MR. VADNAL: That is a Wednesday.

I need to talk to him about that, so I don't know if he can answer that or not.

Q. I know I have one more for you.

At trial, would it be sufficient in

explaining the basis of your opinions to use a VHS tape, or would you feel it necessary to use a cine. film, or do you Rave any preference at all?

A. I would use a cine, film, myself,

MR. LOUCAS: Thank you, Doctor. I have no further questions.

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(Deposition concluded at $:SO p.m.)

WILLIAM B. BAUMAN, M.D.

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# CERTIFICATE

State of Ohio, )
) SS:
County of Cuyahoga.)

**I,** Diane **M.** Stevenson, a Registered Merit Reporter, Certified Realtime Reporter, and Notary Public in and for the State of Ohio, duly commissioned and qualified, do hereby certify that the within-named witness, **WILLIAM** B. BAUMAN, M.D., was by me first duly sworn to testify the truth, the whole truth and 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 transcribed by means of computer-aided transcription, and that the foregoing is a true and correct transcript of the testimony as given by him as aforesaid.

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

I do further certify that I am not a relative, employee or attorney of any 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 Cleveland, Ohio, on this 14th day of FEBRUARY, 2000.

Diane M. Stevenson

Diane M. (Stevenson, RMR, CRR
Notary Public in and for
The State of Ohio.

My Commission expires October 31, 2000.

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