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

Doc. 440

Ralph E. Major, et al,)
)
Plaintiffs,)
)
vs.) No. 236224
R.D. Thompson, M.D., et al,
Defendants.)

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Deposition of ARTHUR E. VAN DYKE, M.D., a Defendant herein, called for cross-examination by the Plaintiffs, taken before Michelle A. Bishilany, a Registered Professional Reporter/CM and Notary Public within and for the State of Ohio, at the Lakeland Medical Building, 25701 North Lakeland Boulevard, Cleveland, Ohio, on Monday, the 17th cay of October, 1994, at 2:16 p.m.

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APPEARANCES:

Spangenberg, Shibley, Traci, Lancione & Liber, by
Mr. John G. Lancione,

On behalf of the Plaintiffs;

Jacobson, Maynard, Tuschman & Kalur, by
Ms. Anna M. Carulas,

On behalf of Defendants
Arthur E. Van Dyke, M.D.,
Thomas E. Driscol, M.D.;

Jacobson, Maynard, Tuschman & Kalur, by
Mr. R. Mark Jones,

On behalf of Defendants
Kent H. Johnston, M.D.,
University Surgeons, Inc.

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ARTHUR E. VAN DYKE, M.D.,
of lawful age, a Defendant herein, called for cross-examination by the Plaintiffs, being by me first duly sworn, as hereinafter certified, deposed and said as follows:

CROSS-EXAMINATION

BY MR. LANCIONE:

Q. Would you state your full name for the record, please?

A. It's Arthur Edmund Van Dyke.

Q. I have a CV here, Doctor, that consists of four pages. Is that an up-to-date document?

A. There are a couple of additions that I could make for more recent professional service activities.

Q. What about publications?

A. No additional publications.

Q. Back in March of 1991 what were your professional activities?

A. I practiced internal medicine and cardiology with a subspecialty in cardiology.

At that time went to Geauga Hospital and Meridia Hillcrest, Euclid and Huron Hospitals.

Also was director of the cardiac catheterization lab at Meridia Hillcrest Hospital,

on the quality assurance committee and the chairman of that committee. At Meridia Hillcrest Hospital on various committees, including coronary care committee at both Hillcrest and Euclid.

I don't know how much -- these are all repetitious of what's in the CV. If you want me to keep going --

Q. Did you have a single professional address?

A. This is where we're s tting today is my main address. But we have other offices that we use.

This is **25701** North Lakeland Boulevard in Euclid, **44132.**

Also have an office in Hillcrest Medical Building on Mayfield Road.

Also we were subleasing some office space in Chardon from Drs. Ansari and Mayer at that time.

Q. What were your catheterization activities insofar as the performance of cardiac catheterizations in March of 1991? Were you performing them?

A. Oh, yes, absolutely.

Q. Where?

A. I was performing them at Meridia Euclid, Meridia Hillcrest and Meridia Huron Hospitals.

Q. Was this done on a rotating basis? There

were certain days at certain institutions? Or was it by appointment? Just how was it done?

A. We would schedule -- each of the cardiologists would schedule our own patients. There was no rotation.

If we had a patient who needed it, we would call up and check with scheduling and when there was an open slot then we would go ahead and schedule the patient then.

Q. Was there any kind of a team that you had at each institution that you worked with?

A. There were cath lab technicians and nurses we worked with which were different people at each of those three institutions.

Q. When you performed the catheterizations did you have any other physicians that assisted you at any of the institutions where you did that work?

A. No.

Q. So you would have been the only cardiologist present --

A. Yes.

Q. -- during the routine type of a catheterization?

A. That is correct.

Q. Approximately how many catheterizations are

you performing weekly, monthly or yearly? Whatever way you can give me an explanation.

A. I would say roughly 200 to 250 counting angioplasties, or 150 to 250. I don't have an exact number for you. Ball park that's about right.

Q. Is that still about the same?

A. Yes.

Q. How did you happen to become involved with Ralph Major as a cardiology consultant?

A. He presented as I recollect to the best of my recollection at the Euclid emergency room.

Since I had spent a number of years and my partners also at University Hospitals of Cleveland, it is quite often that if a patient whose internist is from University Hospitals of Cleveland has a patient who arrives there they'll call our group since they don't come there to help them out.

My partner, Dr. Botti, Junior, admitted the patient, saw him on the first day. And then since he could no longer go to Euclid because of some scheduling conflicts I picked up the case the next day.

Q. When did you first see Mr. Major?

A. March 9th of 1991.

Q. Prior to that time your partner, Dr. Botti,

saw him?

A. That is correct.

Q. When you saw Mr. Major did you familiarize yourself with his history?

A. Yes, I did.

Q. What did you learn about him?

A. Well he was a gentleman who had been having chest discomforts described as tightness lasting two to five minutes on occasion with lightheadedness. No associated shortness of breath or sweating. Several of his episodes had occurred after meals.

He never had any radiation of the discomfort to his jaw or his arms. He did have some fleeting radiation to his right scapular area, which is the shoulder bone in the back.

All of these episodes were at rest rather than with exercise. He had had some mid abdominal discomfort along with this discomfort.

I also was aware in terms of his -- what we call his cardiac risk factors: That he was not a smoker, did not have high blood pressure, did not have diabetes and that his cholesterol was normal.

I was also aware of the results of the laboratory data and the chart, his EKG's and his ultrasound results.

Q. Were you aware of the records that were generated prior to your seeing him?
A. Yes, sir.
Q. Emergency room records?
A. Yes, I would have looked at that.
Q. The history and physical --
A. Yes.
Q. -- from the 8th of March?
You would have read those over?
A. I would have looked at those, yes, sir, and read them.
Q. In fact, you countersigned the admission progress notes, didn't you?
MS. CARULAS: What pages?
Q. It looks like Botti --
A. Yeah.
Q. -- and Van Dyke. I'm not sure who wrote that.
A. Yes, Dr. Botti wrote that and I countersigned it, meaning that I had read it.
For precision, that's Dr. Botti, Junior since I have two partners who are Dr. Botti.
Q. Okay. Was there anything about the impressions of Dr. Botti, Junior or his plan that you disagreed with?

A. No, sir.
Q. What was your impression?
A. My impression was that this gentleman had some chest discomfort and I was unsure of what was causing it.
One possible cause was the heart, coronary artery disease and that it might be angina.
Another possibility was that it was not the heart, of which the most likely cause at that point since I had access to the results of the ultrasound and his elevated bilirubin was gallbladder,
But I also agree with Dr. Botti, Junior's note that other possibilities such as gastritis or peptic ulcer disease were lower probabilities but were possibilities.
Q. What EKG's had you looked at at that time on the 9th of March?
A. I would have looked at all that had been done at Euclid as of that date.
I would have for sure seen the one dated March 8th. And I would have seen the one on March 9th as well. Those would have been the two.
Q. Your opinion about those was that there were no abnormalities?
A. That there were no ischemic type changes.

There's some minor abnormalities such as left axis deviation, but nothing to make me think of active acute coronary artery disease, that is correct.

Q. Was there anything that indicated previous ischemic injury?

A. Not to -- not in my opinion.

Q. Is angina pain from muscle ischemia; is that the originator of it?

A. Angina is discomfort that occurs because of ischemia or a lack of adequate blood supply to the muscle relative to the then-current demands of the heart muscle. We talk about a supply and a demand ratio.

Q. Were there clinical features of Ralph Major's presentation that were inconsistent with acute MI?

A. Yes, very strongly.

Q. What were they?

A. The brevity of the symptoms definitely mediated against an acute MI. We're talking just about symptoms right now as opposed to labs?

Q. Yes, symptoms.

A. The fact that it was not coming on with exertion but was coming on after meals was not consistent with its being an acute MI.

The fact that it was not associated with shortness of breath.

The fact that it -- those are the main things.

Q. What about the laboratory results?

A. The cardiac enzymes, so-called CPK's, were all normal as well and mediated against this being a heart attack or an infarct.

Q. Were Mr. Major's chest pains relieved by

A. I'm about halfway down that page as we're talking here. Let's see.

He did have an episode of pain 4:55 p.m.

Q. He described it as a knot; is that what you're talking about?

A. A knot in the right breast area, that is correct.

And up higher under medications there is an indication that he received nitroglycerin.

Q. Does it say nitropaste?

A. There was also nitropaste, that is also a nitroglycerin to the skin, yes, sir.

It's not clear to me from reading this whether his discomfort, which only lasts two to five minutes anyway, responded to that nitroglycerin or was destined to go away whether he took the nitroglycerin or not.

I also do not see on the emergency room notes anywhere where it says that the nitroglycerin relieved the pain.

Q. Is there any difference in the appearance of the tracing on EKG when there is heart muscle ischemia from either a clot that closes down an artery or whether it is from an acute episode like that or a gradual clotting from plaque formation?

Is there any difference in the appearance of an ischemic event?

A. I'm sorry. Can you --

Q. I'm not putting that very clearly, I'm afraid.

There is an appearance that's typical of an ischemic event on an EKG; is that right?

A. There are multiple possible appearances.

Oftentimes there are changes on the EKG during an ischemic event, that is correct. But there's not just a single characteristic pattern, there are multiple possible patterns.

Q. Does all ischemia whether it's acute or in the past present in a similar fashion on an EKG?

A. No.

Q. What causes a differing appearance?

A. Well, for example, if the ischemia results in an infarct, then you will have findings or you may have findings of an infarct.

If the ischemia is acute and transmural you may have ST segment elevations.

If the ischemia is subendocardial then you may have ST segment depressions, the ST segment may go down and your T waves may flip over.

So there are multiple patterns,

Q. From any of those patterns can you tell the cause of the ischemia or the actual death of tissue other than the fact that it's not getting oxygen and that's why it's happening?
A. You cannot tell what the underlying pathoanatomy is, if that's what you're getting at. Although statistically speaking we know what it is in most cases.
Q. What is that?
A. In most cases it's coronary artery disease with atherosclerosis, either with an increase in the demand -- in other words, if someone went out and ran around and then rested they might get their ischemia because their demands went up or because of a decrease in supply.
Q. As a result of your examination of the patient and your review of the history and the records what did you determine should be done from your cardiology viewpoint?
A. At that point we're talking about the first day I saw him?
Q. Yes.
A. I thought that we needed to exclude a heart attack which was in the process of being done. And that we also needed to exclude a major acute

elevation of his liver function tests.

And lacking those two phenomena I thought he needed a heart catheterization to look for the most common cause of cardiac chest pain.

Q. What transpired? What was done?

A. We did indeed -- I went over his ultrasound with the radiologists. I went over his ultrasound with the surgeon, Dr. Niemczura.

We discussed this with the patient, discussed the risks of and rationale behind doing a heart catheterization.

He consented to that catheterization and I performed that catheterization and found only minor disease.

Q. What was it that you discussed and reviewed concerning the ultrasound?

A. Well I went and looked at the ultrasound with the radiologist. And he indicated -- the radiologist indicated to me, since I don't read ultrasounds of the gallbladder, that there was the presence of a gallstone but without any thickening or dilatation of the gallbladder wall, and that the gallstone was in the area of the neck of the gallbladder where it has a tendency to obstruct and cause symptoms.

Q. You recommended after that that he have a catheterization?
A. Well it looked to me like he was going to need gallbladder surgery and I wanted to make with reasonable certainty sure that it was safe for him to undergo that surgery. And yes, I did recommend that.

There's nothing to say that people can't have two things going on at once. And the lack of the dilatation of the gallbladder and the lack of the thickening of the gallbladder wall made me want to be as sure as reasonable --

Q. You performed the heart catheterization?
A. Yes, sir, I did.
Q. During the catheterization did you have a monitor to observe?
A. Yes.
Q. Or was it afterwards that you reviewed it?
A. There are multiple monitors that we observe during the case. If you clarified the question I'll be happy --
Q. Well, do you make permanent records?
A. Yes, we take actual x-ray film which is developed.

We have temporary records in the form of

video tape.

I also see the actual images while they're being taken live under fluoroscopy.

So I'm actually looking at those images by three different modalities.

Q. Now we have what I understand to be an original tape of the catheterization, Have you seen that7

A. Yes, I would have seen that when I dictated this report.

Q. Have you seen it since that time7

A. No, sir.

Q. I think that is in the form of a 35 millimeter film?

A. Cineangiogram, that's correct.

Q. Are there any other films or x-ray type documents that have been produced from the catheterization other than that cineangiography tape?

A. Well there would have been the video tape, but by now that gets -- once we develop the film that gets taped over. So, I mean, that's long gone.

Q. All sight.

A' But it basically is a lower grade resolution replica of what you see on the cineangiography

films.

Q. All right. Anything else? Any blowups of the cineangiography films?

A. No, sir.

Q. What were the abnormalities, if any, that you found as a result of the catheterization?

A. We measure pressures inside of the heart in pulling back across what's called the aortic valve which lets the blood from the main pumping chamber of the heart out into the body. And there was an elevation of what we call the end diastolic pressure within that cavity.

Q. What does that mean?

A. That means that the pressure was higher than normal. That often reflects either an old heart attack, which was not the case in this man's case, or a stiffening of the left ventricle that can come from multiple causes.

It can also reflect drug usage. And indeed he was on a beta blocker type drug and that can also cause this.

So there are multiple possible causes.

There was some minor irregularity in the coronary arteries themselves, a 10 to 20 percent narrowing in what's called the left main coronary

artery.

The left anterior descending also had a 10 to 20 percent narrowing in its mid vessel that was fixed, as well as a 50 to 60 percent what we call a myocardial bridge or a systolic compression.

The left circumflex was large and dominant and was normal. The right coronary was small and nondominant and was also normal.

And the left ventricle showed completely normal squeezing down or contractions.

That myocardial bridge or systolic compression means that during the contraction phase, we call it systole, the heart that -- that artery tunnels under a little bit of muscle and so it basically is squeezed during systole.

During diastole when the heart is filling and resting the vessel was completely open with no obstruction. And that is when most of coronary artery blood flow occurs is during that resting phase in normal people as well as in this gentleman.

There was absolutely no narrowing where the myocardial bridge was during diastole, that's why I know it's due to tunneling under the muscle.

Q. What were the abnormalities?

A. All of the things I just listed for you.

Q. All the things? They were all --
A. It's not normal to have any -- it's not normal to have any narrowing of the coronary artery.
Q. Were any of those findings consistent with any kind of diminution in blood supply to any part of the heart?
A. Not at rest when this man's symptoms were present.
Q. Is there any way to detect clots that might be in any of the arteries of the heart during a catheterization?
A. There are certain specific angiographic appearances, appearances that we see on the film that we referred to earlier that would be suggestive of clot, yes, sir.
He did not have those.
Q. What are they? What do they look like?
A. There's a fuzziness of the margins. Sometimes you can see a filling defect with the dye flowing around it with irregular margins. Sometimes you can see a little tail actually floating in the breeze and flapping around off a little pedicle or stalk.
So again there are multiple different types of appearance.

Q. Would that be different than something that would indicate an ischemia? In other words, what you're telling me is that you can see things on the angiography that give the appearance of a clot.

I'm talking about any other manifestations that would indicate not simply a clot, but some kind of an ischemic event going on.

A. Well I would have expected if there was an acute ischemia for the patient to have chest pain. We monitor their EKG throughout the test; I would have expected to see changes there.

I would have expected a reasonable likelihood of seeing a change in the wall motion on his left ventricle, and on his left ventriculogram that was completely normal.

If there were another cause such as a major atheroma or cholesterol, I would expect that these 10 to 20 percent narrowing I told you about when he's at rest would have been 90 percent or greater.

So again a multiplicity of possibilities.

Q. Do you recall making any observation of his platelet count prior to the time of your catheterization?

A. I would have looked at Dr. Botti's note which I countersigned, and that meant I would have seen it

there. It's listed in his note.

I would have also looked at all of his lab results. And I believe I even comment on his liver function tests completely -- specifically.

But I would have looked at all of those prior to the catheterization, yes, sir.

Q. When you became aware of his elevated platelet count what significance did that have to you?

A. By far the most common cause of an elevated platelet count is a reaction to something else, something that's called an acute phase reactant. It's a very nonspecific finding in the vast majority of cases.

I've seen it many times after people with infectious processes. I've seen it in people with acute gallbladder problems. I've seen it with people with cancers can sometimes have it elevated. It's a nonspecific finding.

And usually the significance is what's causing it to be high, you look for what caused it to be elevated.

In this case I had a reasonable explanation in the acute gallbladder process.

Q. Who usually determines the cause or the

significance of an elevated platelet count?
A. In my particular practice? I'm not sure what you mean by that.
Q. First of all your practice.
A. In my practice if I have another cause for it that's a reasonable cause for it, then I make that determination as an internist.
I've been trained at University Hospitals of Cleveland in general internal medicine and this is one thing that we look at.
If I see no explanation for it or if it's greater than a million, which is the level at which I was taught that it's something that may start causing a problem, then at that point I will call in a hematologist to get a second opinion.
Q. What are the possible complications that might relate to the symptoms of chest pain when you have an elevated platelet count?
MS. CARULAS: I'm going to object to that. I don't understand it.
THE WITNESS: I don't understand the question, so I'm going to ask him to rephrase it anyway.
Q. Relating to a platelet count of over **800,000**, is there **any** possibility that you know about that

thromboemboli may be something that the patient suffers from?

MS. CARULAS: Objection.

A. Thromboemboli are something that can happen no matter what the platelet count.

So if you're asking can it happen above **800,000**, yes. It can also happen with a normal platelet count. It can also happen with a low platelet count.

Q. Well have you gotten consultations from hematologists where patients have had a platelet count either over 800,000 or over a million?

A. I believe I have. But they're relatively rare that they're greater than a million in general.

I mean, I have a patient that I saw in the office last week and now, I mean, his platelet count is about 650 to 700,000, and I've got another cause for his elevated count also which is he's got an inflammatory syndrome after bypass surgery.

And because of this case I've gone back to check on my knowledge and have spoken to other hematologists and they continue to reaffirm what I was taught, which was that unless it's greater than a million we generally don't worry about it.

Q. Do platelets have anything to do with

coagulation?
A. Yes, sir.
Q. Is that any consideration, is that of any importance to you as a cardiologist to be concerned about either greatly elevated or greatly diminished platelet counts?
A. Yes, sir.
Q. But under the circumstances of this case I take it that you felt that the gallbladder disease was enough of an excuse for the platelet count to be elevated to the 800,000 level?
A. A cause.
Q. A cause.
A. Right. Wouldn't call it an excuse.
Q. You didn't think it could have anything to do with his chest pain?
A. It was unlikely to have anything to do with his chest pain at that level. If it had been greater than a million it would have had a greater likelihood of having some relationship to his symptoms.
Q. Why?
A. Because not being a hematologist that's what I was taught, I was taught in the textbooks I've read and I was taught by hematologists that rarely

above -- below a level of a million does a high platelet count result in any clotting problems.

Q. Is a clotting problem the thing that will be the risk if someone had an extremely elevated platelet count?

A. Either a clotting problem or a bleeding problem. They can both happen; depends how the platelets work. It's not just the number, it's what they're doing.

Q. Would a clotting problem possibly relate to chest pain in a patient?

A. If it occurred in the coronary arteries it could, yes.

Q. You didn't feel the necessity to consult with any hematologists in this case then?

A. No, sir. Elevated platelet counts are very common as a nonspecific reactant. And we had another explanation for this man's problems, not just mine but also agreed to by the surgeon I had see this man along with me.

Q. The surgeon here or at --

A. Surgeon at Euclid Hospital.

Q. Euclid Hospital?

A. Right. I discussed this personally with him and we reviewed the ultrasound.

Q. Well did you discuss the platelet count with him, too?
A. I don't recall, sir, at this -- it's years ago. But I asked him for a normal consult and I'd asked him to review the chart and review the patient and look at the labs.
It certainly would have been my understanding that he would have looked at those. It's hard to do the consult without looking at the data.
Q. Right.
He recommended gallbladder surgery, didn't he?
A. Yes, sir.
Q. Did Ralph Major have unstable angina at any time?
A. That was a consideration when he came in. And after doing his cardiac catheterization it was my impression that he had not had that.
But that was in what we call the differential diagnosis, that was one of the possibilities, and indeed that's precisely the reason I did the heart catheterization.
Q. After Mr. Major was discharged did you ever see him again?
A. No, sir.

Q. Did you talk to any of the physicians that took care of him later at University Hospital?
A. Yes, sir, I did.
Q. Who did you talk to?
A. I spoke to a Dr. Thomas Driscol.
MR. JONES: I'm sorry. What was the name?
THE WITNESS: Driscol, D-R-I-S-C-O-L, or two L's. I'm not sure.
MR. LANCIONE: I think it's two L's.
Q. When did you talk to Dr. Driscol?
A. After the -- after the gallbladder surgery and after he had had a heart attack and after he had had the paralysis. The patient I'm talking about, not Dr. Driscol.
Q. What was your discussion about?
MS. CARULAS: Objection.
You can go ahead.
A. Okay. I'd been informed by Dr. Niemczura that he had heard from someone, and I don't remember who, that Mr. Major had had a complication.
And as in all cases where I've been involved in a patient's care I always seek to try and find out what was going on in terms of their care. If

there's a complication and a heart attack when I've done a heart catheterization which showed no cause for it, it's something I wanted to discuss to see what had happened.

Q. Did you find out what happened?

A. No. I mean, I found out he had a heart attack but I did not find out a reason for it other than the fact that they did find that his blood vessel was blocked. And I'm not sure whether that's what you're after.

He had the heart attack because his blood vessel was blocked, his left anterior descending.

Q. Blocked with a clot?

A. That it was blocked presumably with a clot, that's the most likely cause by far.

Q. Well did you find out specifically whether there was a clot? Did they confirm that there was a clot that blocked the artery?

A. I do not recall.

But again statistically speaking that would be most likely the cause, given that the vessel was open just a few weeks earlier at my catheterization.

MS. CARULAS: Just *so* the record is clear, too, Dr. Van Dyke did send a letter to Dr. Thompson which was a one page

letter.

A. I probably called Dr. Thompson also to discuss this man as he was going home. I don't directly recollect that or have any direct knowledge of exactly what I said. But I would have phoned him as well.

That would have been before anything at University Hospital itself, before his admission to University Hospitals.

Q. So due to the fact of your catheterization results you would not have suspected that any of his arteries could have closed down in that short period of time, but rather that there would have been a clot in one of the major arteries that was responsible for his heart attack at University Hospital?

A. The most likely statistical cause would have been a clot.

MR. LANCIONE: That's all I have. Thank you.

MR. JONES: No questions.

MS. CARULAS: Doctor, you have the right to read this over or you can waive your signature.

THE WITNESS: I would like to

read it.

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Arthur E. Van Dyke, M.D.

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

CERTIFICATE

I, Michelle A. Bishilany, a Registered Professional Reporter/CM and Notary Public within and for the State of Ohio, do hereby certify that the within named witness, ARTHUR E. VAN DYKE, 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 was reduced by me to stenotypy in the presence of said witness, subsequently transcribed into typewriting under my direction, and that the foregoing is a true and correct transcript of the testimony so given as aforesaid.

I do further certify that this deposition was taken at the time and place as specified in the foregoing caption, and that I am not a relative, counsel or attorney of either party or otherwise interested in the outcome of this action.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal of office at Cleveland, Ohio, this 20th day of October, 1994.

Michelle A. Bishilany, Holland & Associates, Inc.
608 TransOhio Tower, Cleveland, Ohio
My commission expires 1-11-96.