IN THE COURT OF COMMON PLEAS

CUYAHOGA COUNTY, OHIO

Doc. 387

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SHARON BRANAND, et al.,
Plaintiffs,

vs.

NATALIE C. BLEVINS,
Defendant.

Case No. 343745
Judge McDonnell

- - -

Deposition of PAUL C. SHIN, M.D., a witness herein, called by the Plaintiffs for direct examination pursuant to the Rules of Civil Procedure, taken before me, Michael Christy, a Stenographic Reporter and Notary Public in and for the State of Ohio, at the offices of Paul C. Shin, M.D., 14601 Detroit Avenue, Lakewood, Ohio, on Tuesday, the 26th day of May, 1998, at 6:28 o'clock p.m.

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APPEARANCES:

On Behalf of the Plaintiffs:

Hollister, Leiby, Hanna & Rasnick

BY: Timothy H. Hanna, Attorney at Law
2100 One Cascade Plaza
Akron, Ohio 44308

On Behalf of the Defendant:

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PAUL C. SHIN, M.D.

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

DIRECT EXAMINATION

(Whereupon, Plaintiff's Exhibits 2, 3 and 4 were marked for purposes of identification.)

MR. HANNA: May we stipulate to the waiving of the filing of the deposition?

MR. JEPPE: Yes.

BY MR. HANNA:

Q. Doctor, can you please tell us your name?

A. Name is -- full name is Paul Charles Shin.

Q. And Doctor, what is your profession?

A. Field of anesthesiology with the added certification in pain management.

Q. And are you licensed to practice medicine in the state of Ohio?

A. Yes, I am.

Q. And when were you licensed?

A. 1991.

Q. And can you please tell us about your medical education?

A. Medical school, allopathic medical school, Medical College of Ohio in Toledo '86 through 1990, graduate there; did my internship at The Cleveland Clinic Foundation and did my anesthesia training, a residency training, then after that one year of a special fellowship in pain management.

Q. Okay.

Do you hold any board certifications?

A. Yeah.

I'm board-certified in American Board of Anesthesiology, also board-certified in American Board of Anesthesiology with added certification in pain management.

Q. And can you tell us what is anesthesiology?

A. It's -- actually it's a complex field.

Anesthesiology is a field that really deals with perioperative care, also includes operative surgical anesthesia, providing anesthesia for people that are going for surgery; perioperative care meaning that preoperatively preparing patients for surgery and anesthesia; and also postoperative course, which is pain management, acute pain management as well as other things such as nausea and other hypertensive.

Blood pressure control and all those --

oxygenation, those are part of like field of anesthesia.

Q. Okay.

And what do you have to do to become board-certified in anesthesiology?

A. Well, you have to go through a four-year residency program that are accredited by American College of Graduate Medical Education.

Now, you'd have to go through a year of clinical training and internship, by a three-year residency that -- that -- it's a discipline that goes through all different parts of anesthesia which may include -- or which does include cardiac, cardiothoracic, obstetrics, pediatrics, general, vascular, neuroanesthesia, critical care medicine, also pain management subspecialties.

Those rotations, once you were completed those rotations in satisfactory level and three years of training, you go through a written board process.

Once you're past the written boards, then you are eligible. Then you have to go through oral board process; and once you pass the oral board examination, then you become American Board of Anesthesiology board-certification.

Q. And what additional education do you have to

go through to qualify for certification in pain management?

A. Once you've graduated from residency program, then you apply for a fellowship program and --

Q. Now, what does fellowship mean?

A. Fellowship means further training, further special training.

These are people that have completed the residency, so they do have background knowledge, they know about the field of anesthesia, they know about some aspect of pain management so they're not somebody without any clue as to what pain management is, but they have some background.

Those people that are interested in pursuing that field go in for a one-year fellowship.

Q. Doctor, we've already heard comments concerning different other specialties like orthopedic surgery and now we've heard of pain management and anesthesiology.

What's the difference between those two subspecialties, orthopedic surgery and pain management anesthesiology?

A. Well, we work closely with orthopedic surgeons.

When orthopedic surgeons are involved in doing

a case in the operating room, for instance, they have a broken leg, a broken femur or knee replacement or hip replacement, they require -- patients require anesthesia so we work closely with the orthopedic surgeons.

The orthopedic surgery in general are a department of surgery, so they're mainly involved in correcting a surgical lesions which may be a joint replacements, ligamentous tear such as rotator cuff tear, broken bone, trauma cases.

They're mainly dealing with sports medicine, mainly dealing with patients who require join replacements, but they basically as a field is a surgical field, so they're really responsible for surgeries.

Q. Okay.

And what is the difference between the subspecialty of orthopedic surgery --

A. Uh-huh.

Q. -- and your subspecialty of pain management?

A. Okay.

Pain management is a complex field.

Now, it came to -- really into a light -- into a light that as a specialty in -- back in 1950s and it's sort of grown kind of slowly, but pain

management is a field that are -- that are trained under anesthesia as well as neurology as well as physical medicine.

People have different approaches about pain management in general because pain management is a kind of a loose term.

You can almost say it's a pain medicine. It's like an internal medicine, so it's like a wide field.

People are doing different things. People are doing invasive procedures, people are doing treatments with therapy, people are doing treatments with even just the medication adjustments.

So there are different field, but in -- generally in -- what we talk about in pain management in generally, we talk about the same thing.

It's a pain management. People with chronic pain, may have an acute pain, cancer pain, people with a certain types of disease entities like people with fibromyalgia type of pain and there are different types of pain out there, but generally people that are in pain management deal -- they deal with all different types of pain.

Q. Can you tell us what hospitals are you

affiliated with?

A. I'm affiliated with The Cleveland Clinic Foundation, I also work at Lakewood Hospital, I also spend a day at Meridia Huron Hospital as well.

Q. And the orthopedic surgeons at The Cleveland Clinic, are they generally involved in pain management treatment of patients?

A. Traditionally at Cleveland Clinic the postop pain management after the operation are dealt with -- dealt by anesthesiologist.

So when the surgery is patient's out of the surgical OR, basically the perioperative care/postoperative care for pain management is left to anesthesiologist.

So in Cleveland Clinic the anesthesiologist and the pain management specialist manage postoperative care.

We work closely with them in outpatient. Most the pain patients, they do not have any clinical diagnosis or surgical diagnosis are referred to our clinic for our evaluation.

Q. That was my next question.

Are there patients that are treated at The Cleveland Clinic at The Pain Management Center that are non-orthopedic patients?

A. Yes.

Q. Okay.

Can you explain that to the jury, how you can have a patient that is treated by doctors such as yourself who don't have anything to do with orthopedic surgeons?

A. Well, we have at The Cleveland Clinic -- I can't give you exact figure, but the percentage of referral from orthopedic departments may be about 30 percent, so 70 other percent of the patients are referred by other services that come to us.

They may be through a rheumatologist, palliative medicine, cancer -- oncologist for cancer pain, people with prolonged postoperative course pain that have had surgeries. This may be general surgery, colorectal surgery, it could be neurosurgery, plastic surgery.

So we have all these referrals, so orthopedic department isn't the primary referral. They are part of the referral source, but we do see an array of patients that are from other departments.

Q. Okay.

So if you have a patient who has a non-orthopedic pain syndrome, they would come to a doctor such as yourself as opposed to an orthopedic

surgeon?

A. Right.

Usually the case is that the patients usually go to -- go to their physicians in general, their primary care physicians.

Q. Like Dr. Gannon?

A. Yeah, absolutely.

They go to the primary. In these days with HMOs they can't come to even a specialist directly, so they have to be referred by the primary care physician.

So they go to primary care physician, primary care physician may facilitate some diagnostic studies.

If the patient does not have any specific disease entities or it's something that can't be done, then they're -- and they can't put a finger on exactly what's going on but they're having chronic pain, they refer to The Pain Center.

Q. Okay.

And what type of pain management or pain management syndromes do you deal with?

A. Oh, boy. All -- all kinds.

I deal with -- my area of interest is a postlaminectomy syndrome, patients who've had

multiple back surgeries yet they have chronic pain.

I deal with cancer pain, people with shingles pain, herpes zoster. You've heard of shingles pain?

People with -- that's a neuropathic pain, diabetic neuropathy pain, people with just lot -- myofascial type of pain.

That is the most -- the frequently seen patients at our clinic and they do carry diagnosis myofascial pain and I do see a large number of patients with a diagnosis with myofascial pain.

Subcagetory of myositis, fibrositis, fibromyalgia, interstitial myositis, these are all the sort of terms that people have placed in the past by other specialty groups, but they're really under the category of myofascial pain syndrome.

Q. Myofascial pain syndrome, is that a recognized medical diagnosis by the doctors here at The Cleveland Clinic?

A. Absolutely.

Q. And in the medical community is it recognized as a --

A. Absolutely.

Q. There's been some testimony by a doctor who's going to testify in this case that he considers

myofascial pain syndrome a wastebasket term.

Would you agree with that?.

A. No, I don't agree with that.

If I can further explain that, myofascial pain in general as I mentioned came sort of a new-vogue term.

Like I said, it's a -- it's a classification of fibromyalgia, myositis, fibrositis and these are the terms that they've used in past, in the back in the '60s and '50s and older -- older profession.

As we know more about these skeletal injuries and pain, there are more research and more articles that are coming out and I think that these weren't in the textbooks in the '70s or '60s.

I think more and more coming out these days and I think more and more as we explain more of these pain syndromes, I think the medical communities are more aware of it and they are -- they are understanding of what this pain process is.

Q. We're coming up-to-date.

A. Absolutely.

Q. Doctor, do you know Sharon Branand?

A. Yes, I do.

Q. And how do you know Sharon Branand?

A. She was a patient of mine that was referred by

Dr. Patricia Gannon.

Q. And who is Dr. Gannon?

A. Dr. Gannon is an internal medicine primary care physician with The Cleveland Clinic.

Q. And Doctor, when did you first see Mrs. Branand for her condition?

A. Believe I saw her March 28th of 1997 and she was referred by Dr. Gannon with chronic pain complaints involving the right side upper neck and upper shoulder area.

Q. Okay.

Did you take a history at that time?

A. Yes, I did.

Q. And what history were you given?

A. She basically stated that she was in the usual good state of health until she was involved in a motor vehicular accident where she was a pedestrian, and that occurred March of 1994, and the patient stated that initially she had a lot of difficulty with her pain complaints.

She did go having multiple evaluations, including MRI, the CT scan, the x-rays which were all negative.

She was treated conservatively and then did well, however, she apparently had a normal pregnancy

and just did deliver a healthy baby girl, and after delivery of her baby and her becoming more active with housework and taking care of the child, she apparently had a flareup of her pain symptoms, went to Dr. Gannon, Dr. Gannon basically referred the patient to me for further evaluation.

Q. And that was on March 28th of '97?

A. Uh-huh.

Q. And can you please tell us what examinations you conducted at that time?

A. I did rather complete examination.

Basically she really at that time was not in any acute distress.

She -- examination of the neck revealed she had excellent range of motion.

Her motor sensory examination of the upper extremities were really within normal limits.

She had good deep tendon reflexes throughout. They were equal and symmetric.

Upon closer examination of the spine, she had normal alignment of the spine, yet upon palpation around the -- the superior border of the trapezius as well as the lateral aspect of the thoracic/perithoracic musculatures and just medial to the right scapular area she demonstrated these

pain -- painful areas.

By palpation, a light palpation of this area produced similar reproduceable pain that she has been experiencing.

Really otherwise the rest of the examination really unremarkable.

Q. Okay.

Doctor, you testified earlier that you were aware of the fact that she had MRIs and nerve conduction studies that were normal.

A. Uh-huh.

Q. What significance did that have to you relative to a myofascial pain syndrome patient?

A. Well, it's -- it's nonrelated in a primary.

There are obviously -- there are -- there are two types of myofascial pain, primary and secondary what we call it; but by having these CT scan, MRIs and EMGs, what we're looking for is a surgical lesion.

What we're looking for is a lesion that needs to be operated, that needs to have intervention done.

By having those things normal and having her -- having Sharon Branand having persistent pain symptoms, that adds to a diagnosis of myofascial

pain.

We know that there is a soft tissue injury, there is a skeletal muscle injury.

In her case it's become a chronic nature where she has exacerbation of her pain symptoms.

So by having those studies are being negative, nothing -- and having the pain symptoms, that clearly says that she does have myofascial pain syndrome.

Q. And you also talked about her having an excellent range of motion and motor function of the extremities and normal alignment when you saw her on March 28th, 1997.

What if any effect did those findings have on your diagnosis and treatment of Sharon Branand for myofascial pain syndrome?

A. Basically she was very functional, and let me get back to other thing.

She was breast-feeding her child at that time and she was very functional, yet some of the things that she was doing at home were exacerbating her pain symptoms.

And my assessment was that she did have at that time chronic myofascial pain, that she could be treated conservatively, and that would be the first

thing I usually consider in the patient with myofascial pain anyway.

That would be adjustment of medication, it may include some nonsteroidal anti-inflammatory, may require use of the short course of muscle relaxants, sometimes antidepressants, but also get those patients into a therapy program.

That may include massotherapy, myofascial release program as well as routine physical therapy evaluation.

Q. Doctor, if you could quickly for us so that we understand the difference between a range of motion and motor function and alignment versus myofascial pain, can you explain that to us?

A. Yeah.

She -- she doesn't have any neurological findings obviously. She doesn't have any nerve damage, she doesn't have any findings of that sensory damage.

So there is no loss of functioning, but some of those -- some of those activities that she does are limited by the repetitive nature of her -- what she does.

In fact, if she was lifting something, initially she won't feel any pain, but as she does

more and more of repetitive type of activity, she'll have -- basically have worse range of motion because of the pain.

If she rested, went through the program, whatever, then she would have a regain of full function again, but the pain is there.

Her range of motion may decrease because she won't be able to do the extension or flexion. There are -- there are normal range of motion.

Q. So it's almost like a machine.

The machine can function, but in a human being pain will limit the ability to function?

A. Absolutely.

Q. Okay.

Doctor, I have behind you an illustration that's been marked as Sharon Branand and I believe it's marked as Plaintiff's Exhibit 3.

I've given you a pen here, and if you could for us, can you mark on that exhibit those areas on Sharon Branand that you found to be positive for the myofascial pain syndrome?

A. Yeah.

Basically she had couple areas of tender spots, and when she demonstrated the first she came in, she actually had pain -- the most -- most

pronounced over here about -- about this location here, okay?

She also had some mild tenderness just above this area and also right about this area, but this was the area of most significant amount of pain that she had on that -- on that side; and if you look at, that's the superficial -- looking at this, it's more superficial musculature -- muscle group.

Q. And when we're talking about superficial muscles, we're talking about those muscle groups that are closest to the skin?

A. Absolutely.

Q. Okay.

A. There are a number of levels of muscles in the back and back is very complex.

There are a lot of small muscle fibers that run -- cross transversely as well as this vertically, but what you see is one level deeper actually. This is a deeper level.

She'd have tenderness that -- that if you were to correlate with that would be somewhere over here and the pain also over here and over here.

Q. And Doctor, the testing that was done on Sharon Branand, the MRIs, the x-rays, the EMG studies, would those studies be specific for the

injuries to the muscle groups that you have just marked on that Plaintiff's Exhibit 3?

A. No.

Q. Okay.

Now, Doctor, based upon your examinations and the history that you were given on March 28th, 1997, what was your diagnosis at that point in time?

A. My diagnosis at that time was chronic myofascial pain syndrome with chronic thoracic strain component.

Q. And can you explain that to the jury --

A. Well --

Q. -- so I can understand it?

A. Well, it's a -- it's sort of a -- you know, once again, this -- the pain symptoms or pain diagnosis is not a disease entity.

These aren't your appendicitis or gastritis.

These are something that are part of a multitude of presentations that make up this diagnosis of chronic myofascial pain syndrome and thoracic strain component.

Thoracic strain component really is a part of a myofascial pain syndrome.

It's explaining that there was a strain involved somewhere along the line of the skeletal

muscle injury that basically led to myofascial pain syndrome, but what it really is explaining is that the patient does have pain symptoms that are really related to the strain component, which is the sprain, which is like a stretching or injury of the skeletal muscle fibers.

Q. And is that diagnosis consistent with someone who's been hit by a car?

A. Well, it's by consistent with a trauma.

For instance, if you -- if you got a severe sprain of your ankle, you're going to rupture tendons and muscles and ligaments.

Same thing. If you were hit by something, even if you ran.into something, hit something, you can have these injuries.

So any type of trauma, they may disrupt skeletal fibers, may lead to chronic myofascial pain syndrome.

Q. Okay.

Doctor, I have what's been marked as Plaintiff's Exhibit 2.

Can you tell me what that is and tell me if that would aid you in explaining this syndrome in more detail to the jury?

A. Well, it looks like this is a -- sort of a --

sort of we call it -- we would call it as almost like a nursing level or layman's level of explaining what trigger points are and what the myofascial pain syndrome is.

It -- it goes through -- what it -- what it visualize here is that mostly the muscle fibers. What you see is all these diagrams of muscle fibers at different part of the body.

What that really explains in trigger point is that you have skeletal muscle injury.

When there's a skeletal muscle injury, what happens is that there is going to be some scar tissues that form where there was an injury there.

Just like if you cut your skin with a knife, when it heals back up you're going to have a scar tissue there.

If you ruptured or pulled or strained your muscle severely, you're going to get these fibrotic areas of the muscle tissues; and what you're going to get is some of these deposits, hyalin deposits.

These are -- these are fiber deposits. When you injure a salient component, they're are going to some excretion these hyalin component.

These are like a substance that makes a body heal, but they form scar tissue.

What happens is that then these -- these muscles fibers that are normally aligned like this will have -- that move like with this your contraction and -- and extension, what happens is that there's a disruption of these muscle fibers so that you can't have a normal contraction and extension activity with the muscle fibers that are injured.

Q. Doctor, if we look at in more detail Plaintiff's Exhibit 2, would that help you in explaining again the superficial and the deep muscle trigger point aspect of the myofascial pain syndrome?

A. Yeah.

I'm going to just kind of -- since -- I'm going to go over this just a little bit.

Obviously we talked about different -- different groups of muscle levels in the back.

What you're seeing is a superficial level here. That means it's just below the skin, close to the skin.

You can have any -- any part of this along this muscle fibers you can have disruption.

Now, if you were to take this apart and deeper level -- and I see that you see some deeper levels

here -- you do have a muscle fibers that are deeper by the spine, you also see muscle fibers that are going across from the spine to the ribs, also see that you have the muscle that go from the neck to the scapula.

Q. And what is the scapula?

A. Scapula is a -- well, is a -- is a bony -- a bony part of our body that's -- it just lies behind our shoulder -- I mean our thorax and really it -- it's -- it -- it's -- it's the one that humerus, our arm is connected to.

Q. Shoulder blade?

A. Shoulder blade, okay, but -- used to be a remnants of like wing here. That used to be a scapula. The bird has a prominent scapula because they have wings.

But there are other groups of muscles here.

Now, there are complex -- as complex as there are, they got rhomboids here, muscles that go from the spine to the scapula; you have alleviator scapula that goes from the neck to the scapula; you have the muscle groups that go across from the spinous processes to the ribs; and then above that you have these -- these semi-spinalis muscle groups that run above that, and these are all involved in

our -- our -- our -- our -- the way we stand, our -- our -- the way how we -- how we bend our backs and all of our mechanics are involved in these muscles in the back. They're very important.

Anything that we -- we do sometimes, it can injure these back muscles because these muscles are not ordinarily involved in exercise, see?

We exercise the arm, we exercise the legs, but we never exercise the -- these muscles here.

So when we have these injuries, the most prominent area of myofascial pain is these axis muscles in the back.

Q. Doctor, Sharon Branand has testified that she doesn't have a constant pain, but that it is intermittent and is exacerbated by activity and during her pregnancy, for example, she has stated that she -- the syndrome almost literally disappeared.

Is that inconsistent with the myofascial pain syndrome?

A. That actually is consistent with myofascial pain syndrome because these patients do get better with a -- with an interventions, with physical therapy and medicine, sometimes with trigger point injections to the affected areas they have a

complete relief of the pain symptoms and they may go for awhile.

It's hard to predict. They may go for weeks to months to a year.

However, something they may do may exacerbate the symptoms again and you need interventions again, otherwise you won't know the chronic phase.

So really these patients do go into phases where they do get better with interventions with therapy and something they do tends to bring this pain back on.

Q. Are there differences in myofascial pain between the genders, males and females?

A. Well, you know, there -- it's more frequent in females.

Q. And why is that?

A. We don't know. We really don't know.

Now, I can't give you exact numbers.

It's not two to one female to male, but it's more prominent in females.

It may be that -- it may be the makeup of their muscle fibers. Men are -- men tend to have a -- a sort of a -- much more of a muscle mass so they're more protecting of -- protectant of injuries.

Women aren't as much, but I can't give you specific theories on that or reasons behind it.

Q. And do you have an opinion why during Sharon Branand's pregnancy she had an abatement of this myofascial pain syndrome?

MR. JEPPE: Objection.

THE WITNESS: Now -- yes.

MR. HANNA: Within the realm of reasonable medical certainty.

MR. JEPPE: Objection.

MR. HANNA: Go ahead.

THE WITNESS: You know, quite honestly, I can't explain that.

The -- it -- it could have been the inactivity. She was carrying a child so she wasn't doing a whole lot, she wasn't doing any heavy lifting maybe.

So I can't say why, but -- no -- I can't really comment on that really why.

MR. HANNA: Okay.

BY MR. HANNA:

Q. Doctor, behind what's been marked as Plaintiff's Exhibit 3, there's another illustration, if you can get that out.

(Whereupon, a discussion was

held off the record.)

BY MR. HANNA:

Q. And what has been marked as Plaintiff's Exhibit 4, what is that?

A. Well, what it -- what it shows, it's a microscopic level of muscle fiber.

What you see is a -- a -- a muscle bundle.

This may be right here, what you see is a huge thing, might be big like this, okay? It might be part of our -- our biceps muscle, okay?

And what you see is within that big mass of muscle are smaller groups of muscles and they formed a contractile component of the muscles, and these are what contracts so that you can lift something or you can flex and that's complex -- it's complicated by the blood vessels.

Here is vein, arteries.

It has to feed. The muscle has to feed by the artery so that they can move, oxygenate.

Then you got the muscle nerve bund es and these control contraction, when to contract, when not to contract, when to relax.

Also, these are also involved in our autonomic control when we're -- we have a flight of flights, when there is a -- sudden things like we need to run

there is increase in blood flow to the muscles and these control in dilating the -- the arteries and vessels, too, so the blood flow can go.

So this is -- this is normal-appearing sort of a microscopic overview of the muscle fibers.

Q. Okay.

And how does the muscle fiber again in the genders differ, you know, male and female?

Are the muscle fibers in the female more susceptible to injury than in males and, if so, why?

A. Well, as I mentioned, there is no really a theory that -- that really -- that points to that, but we know that in comparison from male to female the -- the size of the muscle fibers and the number of these bundles are -- are less in females so that they're maybe less protectant of the skeletal injury.

Q. Okay.

And what effect does trauma have on these muscle fibers and specifically in Shar n Branand's case?

A. Well, if you -- if you look at this as a normal muscle fiber, if you were to stretch that, you were to damage the muscle fibers, what it's going to have is that what -- you're going to have

disruption of this -- these muscle bundles here and, as I sort of mentioned earlier, this may disrupt the blood vessels, it may also disrupt muscles deep inside, may disrupt the nervous tissues here.

So what happens is that you have a normal contracture, but when it's disrupted you have these deposits of local metabolites to heal this area.

So what happens, you get fibrous areas, fibrotic areas some across to here where it's been injured and it's not going to contract in a normal basis.

Sometimes may cause muscle spasm from that.

Q. Okay.

And what effect do these lesions in the muscle fibers have on the sensory nerves in the muscle?

A. It doesn't, but there is a theory -- again this is hypothesis, is that -- very complex and what happens again, it -- when you have an injury to a certain area, acute injury, you're going to have the 8 delta fibers.

These nerve fibers will enter the spinal cord and it's going to go up to the brain and tell the brain that there is -- there's something going on, there's pain going on.

Now, if you were -- you were to put your hand

on a hot stove, you're going to take that apart and you're going into little -- just a little phase of sweating, kind of flushing and kind of reaction from that. Your heart will kind of race a little bit.

What happens, same thing. When you have an injury to one area, you're going to have those nerve fibers and they'll go to the brain, the brain is going to say -- send an autonomic message so something happened there.

What happens is that there is a constriction of blood vessels, there is going to be some sweating that may be going on, there is going to be some -- some changes that are going on here.

Now, what happens in a chronic phase is that that becomes a circle.

You have a stimulus that goes to the brain, brain tells "There's something going on. Let's constrict."

What happens then is that there is less blood flow to this area, further injuring it, and it's called a vicious cycle we call it.

It hurt it, it goes up to the brain, brain says "Something's going on down there. Let's constrict. Let's -- you know, let's try to protect ourselves" and that causes more injury sort of.

Q. And in --

MR. JEPPE: I object and ask the last answer be stricken from the record based -- 'cause it's based on theory.

Go ahead.

BY MR. HANNA:

Q. Doctor, and based on this theory, is that part of why the treatment you deal with behavior of the patient?

MR. JEPPE: Objection.

MR. HANNA: Go ahead.

You can answer.

THE WITNESS: Yes, I do.

MR. HANNA: Okay.

BY MR. HANNA:

Q. And tell us what sorts of treatment do you give patients to prevent those types of reactions in the muscles from a psychological standpoint, I guess?

A. Well, that's why that in people with myofascial pain syndrome we frequently treat them with antidepressants.

Antidepressants are -- are -- they work with the neurotransmitters, they do help to increase the neurotransmitters that are good and transmitting

good messages and depressing those things that are transmitting bad messages, and these patients do rather well taking those antidepressants.

Q. And these -- this muscle damage theory, was that a basis for part of your treatment of Sharon Branand?

A. Yes.

Q. And how so?

A. In terms of directing my care for her?

Q. Yes.

A. Yes, I did.

I'm a -- my recommendation for Sharon Branand initially when I saw her was that -- that wanted to optimize the medication, do the therapy; if they failed, we'll go ahead and do the injections.

But injections have some corticosteroids. Those have some side effects and can with a lactating mother, she was breast-feeding the child at that time and that was sort of contraindicated so we decided to go with the more conservative route of -- of just physical therapy, no medications.

Q. Okay.

Doctor, in April of 1997 Mrs. Branand was prescribed a TENS unit.

A. Uh-huh.

Q. What is a TENS unit?

A. TENS unit is a -- is a device called a transcutaneous electro -- you know, I can't -- I can't recall right now, but there is -- it's a long term for it.

Physical therapists, rehabilitation medicine have used it for many, many years.

What it is, is that it's an electrical stimulation just like as though based upon a therapy of rubbing an area of the body that hurts and you apply these TENS unit little pads to the area that's painful and you turn on these electrical stimulations.

What it does is that gives you electrical stimulation, vibration stimulation of that area.

Theoretically it's supposed to release metabolites and theoretically it's supposed to be similar to like an acupuncture by going deeper into the tissue and disrupting, but mainly we feel as though TENS unit's for like a rubbing effect for temporary relief of pain symptoms.

Q. And if we look at Plaintiff's Exhibit 4 again, the muscle fibers, what does the TENS unit theoretically do to those muscle fibers during its treatment?

A. Well, let me tell you about myofascial pain.

Once you have the scar tissue there, it's going to be there for forever, okay?

Myofascial pain, there is no definitive treatment for it.

It's not like as if you have an appendicitis, you take it out, it's gone.

What you're trying to do is you -- you try to control the symptomatic pain. So it's a symptom control really.

So what you're doing -- we're trying to do with a TENS unit is that you apply that to the skin level and -- and it -- for -- for instance, there is going to be a lot of metabolite buildup here, you're going to have some fibrotic tissues there.

You're going to have a difficulty moving that and spasm does occur from that; and if you put TENS unit on it, theoretically it's going to go in there and stimulate that area and loosen that up so that the muscle spasm is less.

Q. And did you find that that helped Sharon Branand in this case?

A. You know, I think that she had tried to fit a TENS unit for her and she did follow back and felt that TENS unit was maybe a moderate level of

improvement but wasn't the significant improvement.

Q. And the records indicate that in June of 1997 Mrs. Branand was then referred to physical therapy.

A. Uh-huh.

Q. Who referred her to physical therapy?

A. Once again, where -- which one?

Q. I think it was in June of 1997 over at Lakewood Hospital.

A. That was me.

Q. Okay.

And why did you do that?

A. The reason I did that was I want her to get involved in a myofascial release program.

These -- these are a sort of subcategory of physical therapy maneuvers that they do for people with myofascial pain, basically for soft tissue injuries and skeletal injuries.

Myofascial pain is really releasing that muscle of tension. So that the spasm is there, they do certain maneuvers to stretch that out.

They spend half their session stretching the muscles, then the other half of the session is doing range of motion and strengthening.

Q. Okay.

It also indicates that in August of 1997 Mrs.

Branand was referred over to Stephanie Pritts.
A. Uh-huh.
Q. Who is Stephanie Pritts?
A. Stephanie Pritts is a -- is physical -- licensed physical therapist who has a -- sort of a private office in Lakewood.
I have actually recommended Stephanie Pritts to Sharon Branand.
Q. And why was that?
A. Because I have used her in the past with excellent success with people with myofascial pain syndrome.
Q. Okay.
And do you know what Stephanie did for Sharon?
A. I did get a report for -- from Stephanie Pritts and I don't know the details of her program, but mainly dealt with a myofascial release, which does mean that it's releasing the muscles, and then working with range of motion and, in fact, that the report that I remember -- recall was that it was positive, that it was working for her.
Q. Good.
Now, Doctor, based upon everything that we've heard and up through today, what is your final diagnosis of Sharon Branand?

A. Well, she has a chronic myofascial pain syndrome.

Q. And Dr. Shin, throughout your testimony now I'm going to be asking you questions where I'll be asking you to express opinions.

When you render opinions in the case, I want you to base those opinions upon your education, training and expertise in anesthesiology and pain management.

I also want you to base your opinions on the history given to you by Mrs. Branand, the physical -- and the physical examinations you conducted.

Furthermore, I want you to express your opinions within the realms of reasonable medical certainty.

Do you understand what I'm asking?

A. Yes, I do.

Q. Okay.

Doctor, do you have an opinion within the realm of reasonable medical certainty as to whether or not Mrs. Branand's myofascial pain syndrome which you diagnosed and just described was a direct and proximate result of her being hit by a car on March 2nd, 1994?

A. Yes, I do.
Q. And what is that opinion?
A. The opinion is that the -- that the -- the accident itself initiated her initial injury that led to the chronic phase or chronic myofascial pain symptoms.
Q. And Doctor, do you have an opinion within the realm of reasonable medical certainty as to whether or not Mrs. Branand's myofascial pain syndrome which was caused by her being hit by a car on March 2nd, 1994 is a permanent condition?

MR. JEPPE: Objection.

MR. HANNA: You can answer.

THE WITNESS: Yes.

As I mentioned earlier, that these patients have cycles and she may do great for a period of time, it may return, and these are almost a sort of a permanent damage and they do -- she can do great for awhile but, again, she may have a recurrence of pain symptoms by doing something that she -- lifting a child or lifting something or doing something strenuous.

BY MR. HANNA:
Q. And this is something she can expect for the rest of her life within the realm --

A. Absolutely.

MR. JEPPE: Objection.

MR. HANNA: -- of reasonable medical certainty?

MR. JEPPE: Objection.

THE WITNESS: Absolutely.

MR. HANNA: Okay.

That's all I have, Doctor. Thank you very much.

CROSS-EXAMINATION

BY MR. JEPPE:

Q. Doctor, my name is Jerry Jeppe and I want to ask you a few questions about your direct examination here today.

First of all, you have used some charts in your direct examination.

Did you prepare those charts, sir?

A. No.

Q. Do you have those charts in your office?

A. No.

Q. You don't use those charts for teaching I take it?

A. No, I don't.

Q. Where did they come from, sir?

A. Well, they came from the -- they came from you

guys.

Q. Did they come from me?

Did they come from me?

A. To you -- from you?

Q. Did I give you those charts, Doctor?

A. No, you didn't.

Q. Who gave you those charts, sir?

A. Mr. Hanna did.

Q. Thank you.

Now, Doctor, we're dealing here I believe -- and correct me if I'm wrong -- with a strain-type injury?

A. Uh-huh.

Q. Is that correct?

A. That's correct.

Q. I note that in the visit of August the 8th of 1997, you state here "Mrs. Sharon Branand has chronic upper back pain secondary to whiplash-like injury in the past."

A. Uh-huh.

Q. What were you referring -- referring to as secondary to whiplash-type injury in the past?

A. Well, you know, whiplash injury still is -- I think is a -- sort of a general term.

Q. Uh-huh.

A. Whiplash could be either forward to extension or it could be lateral, to the side, and I felt that because she was not getting better and the fact that from what I can gather from the information how she was involved in this accident, that if she was hit by the side she's going to have a flexion -- or not a flexion, but sort of a rotation type of injury.

Q. A side-to-side type of injury?

A. A side to side.

Q. All right.

That's what I was trying to get at here.

So the accident that you're referring to in the past --

A. Uh-huh.

Q. -- or the whiplash injury was the accident of March the 2nd of 1994?

A. Yes.

Q. All right. Thank you.

I just wanted to clear that up.

Throughout The Cleveland Clinic records, they use the term fibromyalgia --

A. Uh-huh.

Q. -- in describing Sharon Branand's condition.

You used the term myofascial pain syndrome.

A. Uh-huh.

Q. Are they one and the same or are they different?

A. Well, they're actually one and the same.

The -- the fibromyalgia is commonly-used term. It's more commonly used than myofascial pain.

People have always referred, especially the physicians -- primary care physicians referred this type of myofascial pain as fibromyalgia in the past.

Fibromyalgia is a myofascial pain, but it has to occur in more than one area. It has to be diffuse throughout your body, different parts of the body to make up the diagnosis of fibromyalgia.

Q. As I understand it -- and maybe I'm incorrect here -- a lot of physicians use the term fibromyalgia in a general sort of way in relating to all types or different types of pain syndromes such as myofascial pain syndrome.

Is that correct?

A. Let me -- yes, in a way.

Let me -- let me -- let me kind of explain that and -- and why they do so.

It's a -- it's a sort of a -- it's an entity that's misunderstood by a lot of people and the fibromyalgia by definition really is the -- is a

painful area of the skeletal muscles and the fascia that lies over the muscle.

So it's just like saying that you are having an inflammation of the muscle.

Q. Is fibromyalgia -- excuse me.

Is fibromyalgia an inflammation?

A. Well, what I'm saying is that that's like saying you have an inflammation of the muscle.

Q. Okay.

But if --

A. That's what you were actually kind of people are referring to.

If you have pain in a certain area of the muscle, soft tissue, skeletal pain, generally at different part of the areas people tend to call it fibromyalgia.

Now, there is no diagnostic studies for that.

I mean, you can't get a lab report, you can't -- you can't get MRI imaging.

These are just purely by physical examination and findings on examination.

Q. By -- by findings, what do you mean, sir?

A. Findings mean that -- fibromyalgia is that tender -- a focal area of tenderness in different part of the body overlying -- overlying by the

muscles.

So these are the muscular areas. Not so much as you're pressing on a bone that hurts, but these are muscle groups you're pressing on.

Q. When diagnosing -- let's say -- let's call it -- no, let's not call it fibromyalgia.

Let's call it myofascial pain syndrome.

A. Okay.

Q. Okay?

When diagnosing that in Mrs. Branand -- Branand's case, other than symptoms that she gives you of pain or tenderness -

A. Uh-huh.

Q. -- what objectively is there for the diagnosis of that particular syndrome?

A. There is no objective test to -- to diagnose that. The objective test is -- is an examination.

In -- in our medical notes when patients complain of something, that's a subjective complaint.

When we do the examination, that's an objective component of --

Q. So Mrs. Branand --

A. -- f the exam.

Q. -- tells "That hurts in that place" or "It's

tender here," "It's tender there," and your physical examination, you put that all together, you arrive at a diagnosis of myofascial pain syndrome?

A. Uh-huh.

Q. But no objective findings of any injury?

A. Well, the history, there is a history of injury.

Usually patients present with some type of history of injury or trauma.

Q. But history is something given to you by the patient, too, is it not?

A. Absolutely.

Q. Let's talk about history for a second.

A. Uh-huh.

Q. Is the history that's given to you by the patient important to you in arriving at a diagnosis?

A. Yes, it is.

Q. Could you tell the jury why?

A. Well, because the nature of the injury is that you do not have any objective criteria.

That means that we're -- we don't have the MRI or CT scan, x-rays that show that there is something going on.

You do have to take close -- closer history of what has happened, what has been going on, where is

the pain, what kind of pain is it, when do they come about, how do they go away.

Those are all important in accumulating with the examination process to come up with the diagnosis of myofascial pain.

Q. Okay.

And that history is supplied by the patient?

A. Yes.

Q. All right.

Now, in Mrs. Branand's case, did you review any medical records with regards to injuries she may have sustained in the accident of March the 2nd of 1994?

As an example, did you review any medical records from the emergency room?

A. No, I did not.

Q. Did you review any medical records with regards to Mrs. Branand from Kaiser Permanente?

A. No, I did not.

Q. Or any other physician or hospital?

A. No.

Q. Obviously 'cause all the diagnostic studies, the MRIs, the x-rays, the EMGs, the CAT scans are always normal, so there's really no reason to review those?

A. Right.

She was actually -- the only source of information I got was the assessment by Dr. Gannon.

I didn't have any other information on Sharon Branand when she presented to me.

Q. You said one place in your notes or maybe it was in your report, Doctor -- it was in your report.

It says "Mrs. Branand presented with a longstanding history of upper back pain."

A. Uh-huh.

Q. Now, what did you mean by a longstanding history of upper back pain?

A. Well, that again is a general -- sort of general statement. It's my style of dictating.

Q. Were you referring to any injury or pain prior to the accident of March the 2nd of 1994?

A. Prior to it?

No.

Q. Okay.

Did she give you any history of being involved in any accidents or having problems with her upper back or neck or shoulder area, right shoulder area prior to March the 2nd of 1994?

A. No.

Q. Did you ask her about prior history with regards to injury?
A. Yes, 1 did.
Q. And did -- did she say anything to you or what did she say to you about injury?
A. She was as I -- she was in good health prior to and she was -- she never had a history of back pain prior to the -- the accident.
Q. I notice also in the second page of your report it says -- it's the report dated June the 24th of 1997?
A. Uh-huh.
Q. Do you have a copy of that, sir?
A. Yep.
Second page?
Q. Yeah, second page.
It's the first full paragraph on that page.
It says "My impression is the patient does suffer from chronic myofascial pain syndrome with a chronic thoracic strain component."
You've testified to that already?
A. Uh-huh.
Q. Okay.
"Without any reported preexisting conditions prior to the motor vehicle accident of March the

2nd, 1994, the patient's soft tissue injury --" is that myofascial pain syndrome?

A. Right.

Q. "-- soft tissue injury is probably the result of the motor vehicle accident of March the 2nd of 1994."

A. Uh-huh.

Q. Now, Doctor, I want to tell you that back on September the 6th of 1992 --

A. Uh-huh.

Q. -- that Sharon Branand was involved in a motor vehicle accident, injured her neck and upper back and was treated for that condition; and on September the 17th of 1992, about 11 days after that, she went back to the hospital complaining of tingling in the right arm.

I also further want to advise you that Sharon Branand and was treated at Kaiser Hospital on February llth, 1993 complaining that she had put her back out at work, had upper back pain, difficulty in moving her neck or torso and pain in the arms.

Now, assuming that history is correct, would you still have -- be of the same opinion that the myofascial pain syndrome was in fact the direct and proximate result of the motor vehicle accident of

March the 2nd of 1994?

MR. HANNA: Show an objection.

THE WITNESS: Well, first of all, I don't have any clear sort of report on that, exactly what had happened.

In the -- in -- in looking at the -- I would probably need to review some of the, again, history and closer pain symptoms with her, what kind of pain she's had and at what point she got better, which she did get better.

Those are very important in trying to determine what the source is.

BY MR. JEPPE:

Q. Were you given any of those records to review, sir?

A. Nope.

Q. Would they have been beneficial to you, if you had had those records?

A. Absolutely.

Q. All right. Thank you, sir.

I note also here that have on page to 2 in the following paragraph "The patient's diagnosis --" excuse me.

"The patient's prognosis --"

A. Uh-huh.

Q. "... is good."

A. Right.

Q. Is that correct?

A. Yes.

I mean, that's again sort of what we say good meaning she's functional.

She doesn't have a loss of limb, she doesn't have a loss of motor function.

She can probably lead a normal daily activities and lifestyle until she has exacerbation. Then -- then she needs to have interventions to get that better, but still the prognosis is good.

Q. Finally, in the very last paragraph on that page, and correct me if I'm wrong on this, but it appears that a lot of what you are testifying here today is speculative in nature.

As an example, it says "These symptoms may persist as a chronic phase with acute exacerbation stages -- exacerbation stages. These acute exacerbations may bring about secondary to increased activity such as heavy lifting," and it goes on to say "If the patient will continue --" no, "The patient will continue to require intervention with

physical therapy and possibly injection," et cetera, "if these acute exacerbation stages do not respond to conservative approach."

I guess, Doctor, am I not correct that you're saying if this happens --

A. Yeah.

Q. -- if this happens or this may happen or it may not?

A. Yeah.

Q. This doesn't seem to be based upon a reasonable degree of medical probability.

A. Well, you know --

MR. HANNA: Show an objection.

THE WITNESS: You know, we -- that's our style, I think, and -- and I think that all of these sort of -- the way we word certain things is -- is from our informed consent.

Something may happen, something may not happen, there's a chance of one in a hundred million that it can happen.

So we do put these things down because it may happen with one activity, may not happen at that session, but later on when she did the same -- she does the same thing it may happen again.

So it's just that you have to kind of put that down is that it may not be the case each and every time that she does that.

BY MR. JEPPE:

Q. She may go for years and not have any exacerbations?

A. She may. She may -- she may do that.

If she's away from doing certain activities that may exacerbate the symptoms, then she may go for -- for awhile, years without the symptoms.

But I think that she has already demonstrated that she does things of lifting things like sort of the daily routine activity that she does have exacerbation of pain.

Q. Now, Doctor, do you also -- when did you first see her, by the way?

A. I saw her March 28th of '97.

Q. '97?

A. Yeah.

Q. Did you also ask her about any other injuries that she may have sustained to these areas of her body since the motor vehicle accident on March the 2nd of 1994?

A. Yes, I did.

Q. And did she say anything about any subsequent

injuries to these areas of her body?
A. Nope.
Q. Did she -- excuse me.
Did she say anything to you about an injury on December the 20th of 1995 wherein she sustained a sprain/straining-type injury of the upper cervical and upper thoracic spine?
A. Huh-uh.
Q. Anything like that?
A. Huh-uh.
MR. HANNA: Show an objection.
THE WITNESS: Yeah, I don't have that information.
MR. JEPPE: No, no.
THE WITNESS: Well, she didn't -- she didn't present with that information to me.
BY MR. JEPPE:
Q. Did she give you that -- did she give you that history?
A. She did not.
Q. Did you ever have Dr. Betor's records to review?
A. No, I didn't.

MR. HANNA: Show an objection, move to strike that; any reference to Dr. Betor.

BY MR. JEPPE:

Q. Okay.

Now, on physical examination, and again from what I can gather here, she was in no acute distress, correct?

A. Uh-huh.

Q. Excellent range of motion in the neck --

A. Uh-huh.

Q. -- correct?

She did not demonstrate any specific localized tenderness in the spine --

A. Uh-huh.

Q. -- correct?

Spine had normal alignment?

A. Uh-huh.

Q. Range of motion of the upper extremities, shoulder, elbow and wrist were fully intact?

A. Uh-huh.

Q. Motor exam normal, correct?

A. Uh-huh.

Q. Sensory exam normal?

A. Uh-huh.

Q. Reflexes normal?
A. Uh-huh.
Q. No atrophy?
A. Uh-huh.
Q. Is atrophy important to you?
A. Yeah, because, again, these are -- these are the examination that I'm performing to rule out neurological problems, other impending problems that may need surgery, may need other interventions.

She did have normal -- really normal physical examination and the -- the only abnormality she had was tender areas.

Q. One second.

MR. JEPPE: Can I go off the record a second?

(Whereupon, a discussion was held off the record.)

BY MR. JEPPE:

Q. Doctor, would you agree or disagree with the statement I'm about to read to you?

"It is often suggested in medical/legal cases that the claimant's fibromyalgia or myofascial pain syndrome is related to a motor vehicle accident or some other trauma. In view of the fact that both the etiology and the pathogenesis of fibromyalgia

and myofascial pain syndrome is unknown to science, such statements are no more than a speculation based on no scientific evidence."

MR. HANNA: Objection.

BY MR. JEPPE:

Q. Would you agree or disagree with that statement?

A. I disagree with that and -- 'cause I do see a significant number of patients that are not involved in motor vehicular accidents they do have myofascial pain.

Q. Okay.

One more -- one second, please.

I have nothing further, Doctor. Thank you.

REDIRECT EXAMINATION

BY MR. HANNA:

Q. Doctor, Mr. Jeppe asked you questions concerning a motor vehicle accident Sharon Branand was involved in on September 6th, 1992 and symptoms of tingling in the right arm she complained of in September 17th of 1992.

Assuming that that was an acute event and it resolved before this motor vehicle/pedestrian accident on March 2nd, 1994, what if any effect would that -- those facts have on your opinions in

this case?

A. What we look for -- what we look for is a recurrence of pain symptoms.

Just like if you have a sprained ankle and you walk on it, you get better.

You've had sprained ankle, it got better but, unfortunately, there are times when you have a sprained ankle that became chronic, sort of a chronic nature or chronic injury, so really needs to have a -- I think that we -- you know, I have to focus on the patient's presentation and examination at that time that I see the patient.

So, you know, for my opinion, I can't say that that 1992 accident, that led to her chronic myofascial pain syndrome but, however, with her -- with -- with the history that you've given me at this point and the fact that it wasn't a recurrence of pain symptoms, it could -- you know, most likely it could have been an isolated incident.

Q. Okay.

And assuming that it was an isolated incident, what effect would that have on your opinions concerning her myofascial pain syndrome in this case?

A. Well, it's -- it's different.

accident --

A. Uh-huh.

Q. -- what effect if any would that have on your opinions in this case?

A. Well, she didn't complain of any -- any of this tingling sensation or that -- that -- this type of symptoms when she presented to me.

She really presented with a sort of a focal tender spots in the upper trapezius area so I would say that it's different.

Q. Okay.

What effect if any does a lack of atrophy or a finding of atrophy have on your opinions regarding Mr. Branand's myofascial pain syndrome?

A. Well, again, that -- that you may have atrophy, you have a lack of use of the muscle group.

With these particular patients you can get atrophy, but at the same time you can get muscle spasm.

When you get muscle spasm, you have more prominent muscular area where you have the pain; and typically with people with trigger point areas you may be able to feel -- you may be able to feel by tactile sensation this is a little knotty area in that -- in that region of pain.

So you could have a muscle spasm, chronic contracture of that muscle so that you may not see any atrophy at all.

Q. So is a finding or a lack of a finding of an atrophy specific for ruling out myofascial pain syndrome?

A. No.

Q. Okay.

And if she complained of a sprain or strain in December of '95 and that was a short-lived thing, does that have any effect on your opinions

concerning her chronic myofascial pain syndrome?
A. Let me -- why don't you restate that question -- I mean the --
Q. Yeah.
A. -- question again.
Q. I think Mr. Jeppe asked you concerning a complaint to Dr. Betor in December 20th, 1995 concerning a pain in her upper back, and I don't remember exactly what the details were.

But if that was a short-lived thing, an isolated incident, what effect would that have on your opinion concerning the chronic myofascial pain syndrome you diagnosed?
A. Well, it would have little and I have to say that. This is important.

These myofascial pains are -- syndrome are -- they occur consistently in the same area.

So the physical examination, today you examine the patient, down the road five years later when she have recurrence she would have the area of the pain that's very same, so these -- these have to be consistent.
Q. Okay.

What if the pain to Dr. Betor, the complaint of pain **to** Dr. Betor was in a different area than

the myofascial pain syndrome that you diagnosed?
A. Then it's a -- I think then it's different from what she presents it with in the past and what she presented with in -- in '97.
Q. So unless these extraneous events are in exactly the same areas that you diagnose the myofascial pain syndrome, they have nothing to do with that myofascial pain syndrome diagnosis that you have?
A. Right, unless it was -- you know, was it diagnosed?

Was that diagnosed with myofascial pain syndrome in the past?

Unless, again, that it was -- occurred in the same area with the persistence and recurrence of similar fashion, that you'd have to -- it has to be different.
Q. Thank you, Doctor. That's all I have.
A. Okay.

RECROSS-EXAMINATION

BY MR. JEPPE:
Q. Just one question.

Doctor, she never gave you a history of any prior or subsequent injuries to those areas of the body even though you asked her; isn't that correct?

A. That's correct.

Q. Thank you.

I have nothing further.

(Thereupon, the deposition was concluded at 7:35 o'clock p.m.)

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C E R T I F I C A T E

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

I, Michael Christy, a Stenographic Reporter and Notary Public within and for the State of Ohio, duly commissioned and qualified, do hereby certify that the within named witness, PAUL C. SHIN, 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 prepared and produced by means of computer-aided transcription and that the foregoing is a true and correct transcription of the testimony so given by him as aforesaid.

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

I do further certify that I am not a relative, counsel 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 Akron, Ohio, on this 1st day of June, 1998.

Michael Christy

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

My commission expires February 12, 2002.

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