1996 WL 34407010 (N.Y.Sup.) (Expert Trial Transcript)
Supreme Court of New York.
New York County

Peggy WURM, D.D.S.,
v.
COMMERCIAL INSURANCE COMPANY OF NEWARK, et al.

No. 1996-602270.
1996.

(Transcript of Thomas Kolb, M.D.)

Name of Expert: Thomas M. **Kolb**, M.D.
Area of Expertise: Medical & Surgical >> Radiology
Area of Expertise: Medical & Surgical >> Pediatrics
Representing: Unknown
Jurisdiction: New York County, New York

[Note: Pages 1-599 missing in original document]

Take 5.

MR. HILLER: We are taking a witness out of turn.

THE COURT: You have agreed?

MR. BEGOS: Yes, your Honor.

THE COURT: All right, let's go. Bring the jury in.

COURT OFFICER: Jury entering.

(Whereupon, the jurors entered the courtroom and took their respective teats in the jury box.)

THE COURT: We are going to interrupt Dr. Wurm again to accomm??date another doctor's schedule. So we are calling Dr. Thomas Kolb, K-o-l-b

DR. THOMAS KOLB, called as a witness by and on behalf of Plaintiff herein, being first duly sworn, was examined and testified as follows:

THE CLERK: Please be seated and follow the instructions of the officer.

THE OFFICER: Give your name, and spell it, please.

THE WITNESS: Thomas Kolb, K-o-l-b.

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THE OFFICER: County of residence?

THE WITNESS: Manhattan, New York.

DIRECT EXAMINATION

BY MR. HILLER:

Q Good afternoon, Dr. Kolb.

Before I continue, I will tell you, the acoustics in here leave something to be desired. So please speak up.

A Okay.

Q What is your occupation, Doctor?

A A physician specializing in diagnostic radiology.

Q You teach as well?

A Yes, I'm assistant clinical professor of radiology at Columbia University College of Physicians and Surgeons, Department of Radiology.

Q Have you examined radiological films with respect to Dr. Wurm?

A Yes.

Q I am going to ask you some questions about your background right now.

A Sure.

Q Did you attend college, sir?

A I did.

Q Where did you attend college?

A Queens College right here in the City of New York.

Q Did you graduate?

A In fact I did.

Q Did you graduate with any honors or marks of distinction?

A Yes, I did. It's been a while now, but I did.

Q The Martin H. Dahlman Memorial Award for Scientific Achievement, have you heard about that?

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THE COURT: This is your chance to talk about all the great things about yourself that your mother talks about.

A In that case, do we have time?

Q Martin H. Dahlman, D-a-h-l-m-a-n, Memorial Award for Scientific Achievement.

A Yes, it was a research award that I won a partial scholarship towards my education in college.

Q Have you ever heard the term Phi Bet; Kappa?

A Yes, I graduated with honors Phi Beta Kappa as well.

Q What is that?

A An honor society for college age kids.

THE COURT: An academic society?

A An academic society.

Q How does one become a member?

A It is academic achievement. It's a national honor society.

Q Does anyone do it or you have to reach a certain stage?

A You have to be sponsored by professors at your college and merit acceptance and to achieve some sort of academic status.

Q You achieved that status?

A Yes, I did.

Q Did you attend medical school?

A I did.

Q What year did you graduate?

A I graduated medical school in 1983. I went to Downstate Medical Center over in Brooklyn.

Q Have you ever heard of the National Institutes of Research Training?

A Yes, I received that research training grant as well, for academic research that I did during my studies in medical school.

Q Did you do a residency?

A Yes, at first I did an internship from 1983, '84 at Albert Einstein College of Medicine in the Bronx in pediatrics. And then from 1984 through 1986 I did a residency in pediatrics for two/ years and I became a board certified pediatrician.

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I then went back and did a second residency in diagnostic radiology at Columbia University, Columbia-Presbyterian Medical Center in New York from 1986 to 1990, and became board certified again in diagnostic radiology.

Q So you have two board certifications?

A Yes, I'm double certified.

Q Have you ever published any articles in the field of radiology?

A Yes, I have. I published one of the first articles in 1986 -- sorry, it was 1989 on cardiac MRI, which is MRI of the heart. And I recently published articles on breast cancer diagnosis, which have basically changed the way we diagnose breast cancer.

It has to do with establishing breast ultrasound. I was responsible for developing the use of breast ultrasound to detect breast cancer in women with dense breasts where mammograms miss breast cancer.

Q Do you know approximately how many articles you published in the field?

A In that particular area of breast cancer detection, four.

Q Any other areas you published articles?

A That is it.

Q The estimation of myocardial water content using transverse relaxation time. What am I describing?

A That is my first study looking at an MRI of the heart. One of the first studies ever done using that technology.

Q Have you ever delivered any lectures, sir?

A Yes, I frequently deliver lectures around the country, right now mostly on breast cancer diagnosis, discussing that and teaching that as well. I have given lectures to national organizations, national groups, as well as to academic centers.

Q What about delivering papers at all, do you do that as well?

A Yes, when I publish a paper and I publish an abstract on it, at a national meeting I will get up and present the paper and answer questions and teach.

Q Were you ever involved in beginning development of the modern day MRI machine?

A Yes. Back in 1988 to 1990, I was a consultant for a company called Advanced NMR Systems, Nuclear Magnetic Resonance, which was the original name for MRI. And that technology that I also consulted on is now, ten years later, common throughout the United States.

So I had a lot to do with the early advance of the MRI test which we can talk about.

Q Are you a member of any professional societies?

A Yes, I belong to the Radiologic Society of North America. I belong to the New York Breast Cancer Group, American College of Radiology, Associates of the American Board of Pediatrics, as well as the American Board of Radiology and so on and so on.

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Q Have you ever been qualified to testify as an expert witness in radiology?

A Yes, I have.

Q Approximately how many times?

A Approximately five times per year.

Q For how long has that been?

A Approximately six years.

MR. HILLER: Your Honor, we ask that Dr. Kolb be accepted qualified as an expert witness in the field of radiology.

THE COURT: You agree the doctor is an expert?

MR. BEGOS: No objection, Your Honor.

Q Now, you previously testified that you examined films, radiological films for Dr. Wurm?

A Yes.

Q I am going to ask you about a couple of those.

Before I do that, may I ask, have you reached an opinion to a reasonable degree of medical certainty as to the current condition of Dr. Wurm's spine and related structures as revealed in the films?

A Absolutely.

Q Before we do that, I will get the model and you can tell us what it is we will be looking at?

A Sure.

Q I know the jury is very excited to see this again.

Why don't you just tell us if you could define some of the structures of the spine so that your testimony can be looked at in context?

A I don't know exactly how much you all know, but we will catch up all together in understanding the back, because that is what we are talking about.

Each one of these hard structures here is a bone, the yellow structures. And there are a certain number of bones we all have in the back, and they are all the same.

In the lumbar spine, the lower back, we have five bones. We call them L for lumbar, 1, 2, 3, 4, 5.

In between each of the bones are these more gelatinous, jelly like structures which are the disks. We have all heard of a herniated disk or disks in the back, and that is in between each bone.

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And the function of each disk is to be a shock absorber. These are spongy fluid-filled structures so when we jump up and down, the bones don't crunch against each other. Like a toothpaste consistency.

These disks are held in place, because if they weren't, when we jump up and down, they would spread out. There are three structures that hold the disks in place. A ligament that runs in front, the ligament that runs in the back of the spine, and there is an annulus which runs around the spine at each level.

And the disk is held in place, which means that the disk can only come to the edge of the bone, but it can never go beyond the bone. If it goes beyond the bone, there must be a tear in one of those coverings that allows the disk to push out.

Now, the reason we talk about disks is because there are important structures in the spine that can be affected if there is a problem with the disk.

Right behind these bones in the middle of the spine, in front of the back bones, and in back of the front ones is the spinal cord. The spinal cord starts at the bottom of the brain, comes all the way down and it stops at about the first lumbar bone. And then from that level, we need nerves to go down to our legs. It gives off these nerves, just single nerves that go down in a structure that contains spinal fluid. You know, we do spinal taps and take fluid out.

The fluid, in order for it to stay in one place has to be contained, and it's contained in a structure called the sac. We call it the thecal sac.

Everything has a fancy name.

So that is the thecal sac.

So we have the sac and inside the sac are those nerves that I told you about that comes down from the spinal cord. It becomes more clear as we go along.

But the nerves have to get out of the spine. They have to go to our arms, to our legs, to everywhere. You see when we turn the spine on the side there are holes. The holes have another fancy name. They are call foramina. And these are neural, for nerves. Neural foramina, holes that the nerves come out.

Here you can see these little orangy structures coming out through this hole on the left, your left, and your right. It has to go to your left side and right side.

These holes, you can see there are bones around the hole which is not very good because if you jump up and down, the nerves can hit the bone. So we have been made to have fat in these holes that cushions the nerve roots. So we have fat in these holes. You will see what I mean in a couple minutes when we look at some MRI scans.

That is the basic structure of the spine. That is really everything you need to know before looking at an MRI scan.

You will see here that the height of each of the disks, how thick they are, are the same between L-1 and L-2, 2 and 3, and so on. The disks are all of the same thickness, equal thickness. When all the disks are normal, they will be equally thick and will have equal amount of water in them.

I told you these disks are all watery like a toothpaste consistency. That is some of the major structures we have to know now in order to move on.

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Q Let's talk about some of the terms you used. Let's start with the MRI. We all heard the term. I'm not even sure how it works. Tell us how it works and what it is?

A It is a big machine, a table that you lie in, and actually what is around you in this tube is a big magnet. And we have these super computers that can tell the magnet how to pulse magnetic waves into your body.

And when we do that, we have protons, electrons, neutrons in all of our cells, and all the atoms that make up the cells. There protons react to these magnetic waves. And when we turn off the magnetic waves, the protons go ?? this excited stage they are in, back to norma??ere is no more magnetic wave. And oddly enough, when it does that, it sends out a little signal, and we have these very special powerful antennas that hear the signal. And believe it or not, from those signals and protons from the magnetic waves that were used to get those signals, we can make a picture of the body that is very, very accurate.

So MRI is a very super specialized test that does all that.

Q How is that different from an x-ray?

A A?? x-ray, as you know, as you may know, was basically -- is about a hundred years old, and it just --what we do to take an x-ray is, for example, if you want to take an x-ray of the hand, we shoot x-rays through the hand onto film. We develop the film and we see bones.

If you ever notice an x-ray, we see the bones, but we don't see any muscles in the hand, we don't see tendons or ligaments. Just like if you took an x-ray of the hack, we see the bones. We will see all these bones, but we wouldn't see the disk. We will see an empty space. Nothing in the body is really empty. There is a disk there. We will see the spaces in between the bones.

The MRI, since every part of your body has got these protons in it, all of our cells are alike in that way, and the atoms, we can actually see all these parts of the body, the soft tissues. We can see muscles, tendons, disks, nerves, spinal cord. None of that can be seen on an x-ray.

So we use x-rays to look for fractures, let's say, of bones. But if you really want to know what is going on beyond the scene, whether there is more damage than that, you have to use a more sensitive test and that is an MRI.

Q How about a CAT scan? How does that differ?

A A CAT scan is an x-ray. The only difference is instead of taking one picture of the whole hand, it takes many, many little pictures going through the hand. And we can put that up on a screen and look at tiny little pictures and it gives us much more details of the bones and other structures. It does not give us as much detail as an MRI for these soft tissues, but it gives us much more detail than a regular x-ray.

Q So now, let me -- I will bring up some film for you to look at and you can tell us what they are.

MR. HILLER: They have all been premarked and shown to the defense in advance of Dr. Kolb's testimony.

Q I will show you what has been previously premarked as Plaintiff's Exhibit 46 --

THE COURT: Will you be needing the doctor down there?

MR. HILLER: I will be needing the doctor down there.

THE COURT: Do you want to use the easel?

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MR. HILLER: Yes, your Honor.

Q Would you tell us what it is that you have put up on the -- what do you call that box, by the way?

A A view box.

Q If you could, Doctor, why don't you tell us what you have up there on the view box?

A This is a part of a CAT scan of the back. And actually, you see there are 15 pictures here, and what we are doing when we do a CAT scan, we don't cut anyone, the radiologist, but we take pictures going from the top of the spine down to the bottom of the spine. And each one of these pictures is us going from the top down to the bottom.

Q You want to go back to that other film?

A No, this is fine.

You will see here, this is a little grayer picture, this is a whiter picture. It is the same thing, but we can change the white and black, so don't worry about that.

Here is the key thing. Remember when I was holding up this model I showed you the bones in the front, but there are also bones in the back, but we need to protect the spinal cord in the middle of these bones.

What we are doing on the CAT scan is cutting the patient from front to back. So this is actually, if you think along with me here, if you look at this bottom picture here, this is the bone, the front of the patient, and this is the back, and this is a hole and in that hole is the spinal cord.

You see here these projections, these bones coming from the back and the bones to the side and here. This is the way it is in real life. The bone -- the back. The bone coming to the back, a bone to the side and a bone to the side. So we are really looking at a patient.

Now, this is normal. This is what a normal bone looks like in the spine. This is L-2, the second lumbar vertebral body.

Q This is a CAT scan of Dr. Wurm's back?

A Yes.

Q Read the date on the films

A The date is November 14, 1988.

Q Two days after the accident?

A Okay. Now, look at this picture that I showed you which is normal, and look at the picture up here which is image number 11. This is L-1, number 11, the first bone. And this is the second bone.

You will see there is a very big difference. The difference is there is a big line going through this bone, and you will see that the front half of the bone is pulled off. It's an obvious difference between the two. If we look it becomes obvious.

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What this represents is a fracture of the bone. The bone has been fractured. And this is how it looks at CAT scan. We have other ways to look at it and I will show you, but you can see how obvious it is, how gross it is on this CAT scan. And you can see right here. This is what I was showing you.

MR. HILLER: Let the record reflect the witness is referring to Plaintiff's Exhibit 46-A.

A This is normal down here, and we all look like that normally. And this is actually the fracture of the bone. As you can see, it's fragmented in multiple places. There are multiple fracture lines coming here and pulled off.

This is an important area of the body. This round circle here is the aorta, which is the major blood vessel that supplies blood to our body. So this is a fracture that goes through the first bone in the lower back of this patient.

Q Looking at this film, can you express with a reasonable degree of certainty what condition she suffered, from this film reflected in 46-A, Dr. Wurm was suffering on 11-14-1988?

A It had to be a traumatic event to cause a fracture.

Q What bone is that again?

A L-1.

Q Let's see if we can take a look at another film. I will show you what has been premarked and admitted into evidence --

MR. HILLER: By the way, Your Honor, we ask that Plaintiff's Exhibit 46 and 46-A be admitted into evidence.

MR. BEGOS: No objection.

THE COURT: Okay.

(Whereupon, the aforementioned documents were received and marked Plaintiff's Exhibit 46 and 46-2, in evidence, as of this date.)

A Now, this which is marked I guess 44-A, is a regular x-ray of the back. Not a CAT scan, just a regular x-ray. And these squares are the squares that we looked at before, here. These are the bones.

In between the bones is a space, but in that space is the disk. You just cannot see the disk on an x-ray. You see all these are perfect squares here. And this is the fifth bone, the fourth bone, the third bone, the second and the first bone.

And you will see the top of the first bone here is pushed down. That is the fracture that we saw on the CAT scan, and that is how it looks like on a regular x-ray. When someone comes to the emergency room and we take a picture of them as a quick way to see what is happening, this is what they saw back then in 1988. This is a fracture of the bone being pushed down.

Here is, just so that it's easier for you to see, the same thing, fracture of the bone being pushed down. The bone should be a complete square like this.

Do you have a pen or marker?

Q Sure.

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A It should be a complete square. You see this and this is all pushed down. This line, the top the bone should be here, but it is not, it's pushed down.

So that is the fracture on a regular x-ray of this patient. Again, you cannot see the disks, you just see empty spaces, but you see the space here is maintained. Maybe there is a little narrowing here between 5 and S-1, the sacrum, but the other spaces are maintained.

Q So you observed the narrowing between L-5 and S-1?

A Yes. If you measure from here, which is the top of this bone, and the bottom of this bone, there is a little loss of height. If you measure from here, you can definitely see that. If you measure the heights here, they are all equal, equal, equal. And this is a little bit narrowed down.

So the space between the two bones have become a little narrow here at the lowest level in the back. Those are the two findings here on a regular x-ray of this patient.

Q Let's take a look at a couple MRI films. The first one is dated December 6, 1988, the blowup. And that is Plaintiff's Exhibit 47. This is film 47.

A I am going to show the film labeled 47. This is an MRI. We look at everybody different ways. We like taking pictures. This is an MRI of the back. Remember I told you you can see the soft tissues very well on MRI.

Again, our friends here, the gray squares are the bones. In between the squares we now see these white structures which are the disks in between the bones. And the reason they are white in the way we took this MRI is because there is water in them.

And the way we took this picture, anything that is watery is white. Anything that does not have water is dark. So if there is not a lot of water in bone or marrow, the bone is dark, but there is a lot of water in the disk.

There is also water, the spinal fluid in the back is water, watery in the sac, that I told you about. You see behind the bones this white line going up and down here is the thecal sac that contains the nerves.

And you will see up here there is a gray line -- you will see it better on those pictures, but there is a gray line here. That is the spinal cord in the middle of the sac. And the nerve roots, these little gray lines are the nerve roots that come down and out those holes on the side.

You see here, and I will show you a little better, that as I told you, the disk has to go to the margin of the bone and stops because there is a ligament holding it in place 30 that it stays in place. If it goes beyond the bone, we then know it's herniated out or at least it's torn the covering of that disk.

So what you see here is -- and you will see it better on that blowup there, that the L5-S1 disk, the lowest disk in the back is pushed out to the back and herniated back. It goes beyond the confines of the bone.

And you will also see something that confirms what we saw on the x-ray, which is measure the height of the disks, which is the space between the bones, they are all equal. Except for the lowest one, which is now a little narrow.

So the findings on this film -- oh, there is one other major finding, of course, that is the fracture of the L-1, the first bone. If you look here, I told you there is no water in bone, bone marrow, and that is why the bones are gray, these squares. But if you look here at L-1, you will see it's white. I will show that to you up there.

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The reason it's white is because it's swollen, and the reason why it's swollen is because it's fractured. And the fracture, of course, swells up the area and now there is edema or swelling in the bone and the bone is compressed, as I showed you on the x-rays and CAT scan.

So L-1, the bone is compressed down and swollen. At L5-S1, between the L-5 and S-1 bones is a herniation that goes back, and there is also starting to be some narrowing, loss of height of that disk. And you can see that, all those findings a little better here upon 47-A.

So these squares are the bones, the white are the disks. And you look here, each disk stops right at the edge of the bone. Stop. Stop. And you look here, you will see the disk is now pushed out there beyond the bone. This is herniated through the covering. And now if you measure the height from here to here, versus here to here, you will see the height, it's obviously narrow.

And that is important because once a disk herniates, it's beyond its covering, then it starts -- two things happen.

First of all, it gets a little narrow because there is less disk and it's pushed out. What is there is now narrow. And the second thing that can eventually happen, since it's broken out of its little box it is supposed to be in, it loses water and dries out.

And a fancy word for that is desiccation, loses water. Those are the things that can happen. Those are eventually signs of arthritis in the back.

The other finding here, you see this square up here, you will see it better and lighter. What I have outlined is L-1. And compared to normal you will see this is the fracture. The front and middle of it have pushed down like I showed you on the x-ray. And the disk on this level has herniated, has pushed itself into the bone.

You see here how the disk is completely sharply marginated. There is a sharp margin around the disk. Here this disk actually looks like a keyhole, comes down like this.

Q Is there a medical term when the disk goes into a bone?

A It's an intrabody herniation.

Those are the findings here. There is herniation here. There is loss of height of this disk. There is the obvious fracture, there is the swelling of the bone, and there is a herniation down into the bone of the disk material because the bone is fractured. Those are the major findings in 1988.

Q December 6, 1988.

A Okay.

Q Can a disk herniation be caused by a traumatic event?

A Yes.

Q Can you explain how that happens?

A Well, anything in the body can tear with enough trauma. And the covering, as I told you, in order for there to be a herniation of a disk, there has to be a tear of the covering. So the covering tears and the disk pushes out.

Q Let's now take a look at films from 1999.

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MR. HILLER: Your Honor, we ask that Plaintiff's Exhibit 47 and 47-A be admitted into evidence.

THE COURT: Any objection?

MR. BEGOS: No objection.

THE COURT: Okay.

(Whereupon, the aforementioned documents were received and marked Plaintiff's Exhibit 47 and 47-A, in evidence, as of this date.)

Q I now show the witness what has been premarked as Plaintiff's Exhibit 48 and 48-A, MRI film and blowup of that.

I will need your help here, Doctor.

A Okay.

DIRECT EXAMINATION

BY MR. HILLER: (CONTINUED)

A This, marked 48, is an MRI, again, of a back, and I know you all know the anatomy, but this is done ten years later on -- actually 11 years later -- July 20, 1999.

The squares are the bones and in between the squares, again, are the discs.

We have a few things happening here and, again, we'll go to the blowup in a minute. What's happening here is, we had a herniation at the lower level of 5-1, and that's still herniated, that never goes back in. The space is still narrowed, but what happens is, now it's black instead of white.

Remember, I told you the discs were white, just like the spinal fluid, but here it's totally black. So it's lost its water.

In fact, we now have a second herniation between the second and third vertebral bodies, between L-2 and L-3, where, again, you'll see the disc is pushed out beyond the confines of the ligament, that's supposed to hold it in place.

And, finally, as far as the discs are concerned, and we have to correlate our anatomy again, we'll go out to the side of the spine. On the side we have the holes here and in each one of these pictures goes through the body like this, from left to right in this case. So, if you see here, the bone with the disc, you'll also see this white structure here with a little dark black dot on the top, and that's the neural foramen, the hole where the nerve comes out. It's white here because it's filled with fat. Okay.

The dark structure there is the nerve root. Remember I told you the nerves come out to supply a sensation of pain, motion, temperature, movement to our body. That's the way it's supposed to look. Supposed to be a beautiful hole filled with fat, just like that. As we go further down, you'll see that these holes are being pushed on by the disc.

And, in fact, at 5-1, at 4-5, at 3-4, going up, you'll see a sliver of the hole here because the disc is pushing in. There is a normal disc up here and underneath it's pushing in just a drop and at the lower level it's pushing in a lot.

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We have bulges at the discs of other levels, 3-4, 4-5, in between the herniation at 2-3, 5-1. We have two other levels, 3-4, 4-5, and the discs are pushing the foramina where the holes are.

Q If I can interrupt you. You use the term called pushing. I want to get a sense from you.

Have you heard of the term compression?

A Sure.

Q The term impingement?

A Sure.

Q what, if any, relationship do these terms have with one another, pushing, impingement, pressure, compression?

A Anything that pushes, impinges, compresses, narrows, they're all the same word, more or less. If something is pushing on something, that's important, and the patient has symptoms from that, like pain, that's what's happening. Whether you want to call it impingement or pushing or narrowing or compressing, any of those words, it's all semantics.

Q If you can then refer back to the film and let us know what's going on with Dr. Wurm in particular based on that film?

A These bulges here at 3-4 and 4-5 are pushing and narrowing or impinging upon or compressing the foramina, which are the holes where the nerves go through.

So, what we have here is herniation to the back, which means ruptured, completely through the ligament at 2-3. We have a herniation at 5-1, which we saw before, and we have the bulges of the disc pushing out to the sides, also narrowing the holes where the nerve roots come out at the other levels.

Now, remember, we had the fracture, also, of L-1, and that's still there. So, that has never changed. You see here the disc is perfectly -- supposed to be perfectly overlaid, but you see there is a portion of the disc pushing down. That is the intrabody disc herniation pushing down into the vertebral body. So, that never healed. So, that's -- the fracture defect is still there.

What you also see here is the narrowing that I told you about at 5-1, but now 2-3 is also narrowed. The other one that has a herniation is also narrowed. And we're starting to lose water at almost every single level.

If you compare this film, and back to the blowup, and compare it to the '88 one, you see a big difference in the back. so the blowup here at 48A, this is the herniation at 5-1. This is the herniation you see pushing out now, which is new or sometime in the last ten years, pushing out at 2-3. And we'll show you the sides in a second.

You can see the herniation real grossly here and see how it's really pushed out. I mean, that's really obvious, pushed out beyond the bone at 5-1, but you'll also notice that the sac remains white.

If you want to compare this to what was done ten years earlier, on Number 47A, look at the color of the sac, which is full of water, and look at the color of the disc.

Going back to 48A, look at the color of the sac and what has happened to the disc. Well, the normal disc here at 1-2, this is the way it's supposed to look, full of water. If you look below it, there's still some water left in 4-5, but at 2-3, 3-4, 4-5, it's gone. That's a sign of degeneration. The back is significantly degenerating at every single level. It's forming herniation, bulges, pushing on the sac, pushing on the nerve roots, and degenerating.

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As you see, the outline of the herniation from the fracture is still there, that will never go away. That will always remain.

So, that's the comparison over the ten-year period.

Q Now, let me -- if you take a look at one other film.

MR. HILLER: Before we do that, your Honor, we ask that Plaintiff's Exhibit 48 and 48A be admitted into evidence.

MR. BEGOS: No objection.

THE COURT: Okay.

(Plaintiff's Exhibits 48 and 48A were received into evidence.)

A This is the right side of the patient. Remember I told you that these holes here, the foramina, are filled with fat that are white. You can see the little dot in here. That's the nerve root. You can actually see the nerve root that's going to go out. You see this Is normal.

Q If I can interrupt you, can you pull out the spinal model so we can get a real full, three-dimensional picture of this.

MR. BEGOS: What number is this?

MR. HILLER: Plaintiff's 49A.

A You see on the side here are these holes and these roots are coming out and the holes are like keyhole shape, a little up and down. Almost like a football on its side. If there were a disc herniation or bulge that pressed into, you'd see how it pressed onto the nerve root here.

That's what's happening right here. Normal, normal, being pushed in, being pushed in a lot, and being pushed in a lot.

You can see here how the nerve root is supposed to be surrounded with fat and here the nerve root is being pushed up against the bone.

Q Can you indicate what levels you're talking about?

A This is at 3-4. This is at 4-5. And this is at 5-1.

Q Which were the ones where you saw they were significant?

A Pushing in on the sides?

Q Yes.

A 2-3 is pushing in on the film before. 2-3, 3-4, 4-5 and 5-1 are pushing in.

MR. HILLER: Your Honor, we ask Plaintiff's Exhibit 49A be admitted into evidence.

MR. BEGOS: No objection.

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(Plaintiff's Exhibit 49A was received into evidence.)

Q Now, Doctor, you're aware that Dr. Wurm was involved in a horseback riding accident on November 12, 1988?

A Okay.

Q Just for the record, by the way, when was the first time you met Dr. Wurm?

A About an hour ago.

Q You've seen her films before?

A Yes.

Q I want you to assume -- I'll ask you a hypothetical question. I want you to assume for the purposes of my question that Dr. Wurm was asymptomatic of any back problems or associated pain prior to her horseback riding accident on November 12, 1988.

I also want you to assume for the purposes of my question that at the time of the accident she fell on her right hip, right buttocks and back at impact.

I want you also to assume that after the impact she complained of pain in the back and hip and right buttock and has continued to complain of that same pain for the last 13 years.

Based upon the films you reviewed, can you express an opinion to a reasonable degree of certainty why it is Dr. Wurm is experiencing the pain and the symptoms she's described for the past 13 years?

A Just from looking at the films, the nerves that go out to the back here are L-1 and L-2, the two nerves that go to the hip here, and S-1 in the back of this. So the nerves up at the fracture site, which is L-1, and lower down, which is S level for herniation between 5 and 1 down here, those are the nerves that go to this part of the body that you feel pain and able to move with.

So, it's not surprising that with the MRI findings that you'd find those types of symptoms that the patient may have.

Q Doctor, I'm going to show you what is called a dermatome chart. It's Mr. Begos's chart, but I thought we'd use it for purposes of your testimony.

Can you explain what this is?

A Each part of the body or each portion of the body, it goes almost in a circular fashion in the body that different nerves go to. So, in your neck and arm, the neck nerves go to the cervical spine. The back, the mid back goes to the thoracic spine and into the lower back, and in the --as you can see here, it's the front of the leg down to the foot, go to the lumbar nerves, the L, which is what we're talking about. The back of the legs go even lower, the sacral nerves, which we're touching upon now.

So each part of the body gets innervated by one particular nerve. So, if a person has pain in the right buttock, that would be here, L-1 and L-2 and S-1, goes right in the area of the hip and the back or the buttock. Those are the areas that are involved. So, it's not surprising that someone has back pain.

In other words, the pain, based on these findings -- what I'm saying is that the finding on the MRI go hand in hand with that type of pain.

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Q Now, Dr. Kolb, if I can refer you back to Plaintiff's 47A, which is the blowup of December 1888, this was the blowup of the film that was taken -- you indicated there was a herniation at L-5/S-1?

A Yes.

Q That's what these markings are for, right?

A Yes.

Q Now, is there any correlation, in your experience, between a herniation at L-5/S-1 level and symptoms of pain and/or weakness in the upper thigh or in the gluteal area?

A We just said that, actually. The answer is that one of the nerves that goes to the back in the buttocks is S-1, so it is not surprising if there is a herniation at L-5/S-1, that somebody would have pain there because the S-1 nerve root goes there.

Q Thank you.

Now, I want to talk to you a little bit about what her condition is today. We've looked at some films. I guess it's below this one. If I can trouble you one more time.

If we compare this December 6, 1988 film blowup, which is Plaintiff's 47A, with Plaintiff's 48A, which is from, as you said, 11 years later, it seems to be something of a difference between the two films.

Can you explain how it is that a film that looks like this on December 6, 1988, then 11 years later looks the way it does on 48A?

A As I said, the back has degenerated, it's now lost the water in all these things. Two discs are narrowed. Two discs are herniated. Two discs are bulged. And there is a fracture defect with the intrabody disc herniation at L-1.

So, this back is relatively rapidly degenerating.

Q Is it common -- let me put it another way.

Is it reasonably possible that this level of degeneration could just have occurred out of the normal course of aging for a woman of Dr. Wurm's age?

A It would be unusual for the whole back to start degenerating like that. It would be unusual for the whole back to degenerate like that.

Q Can you express an opinion, to a reasonable degree of medical certainty, as to whether the condition she currently suffers is causally related to the accident she suffered on November 12, 1988?

A I believe, as I told you, that whatever traumatic event happened back in the '80s has predisposed her, has caused this. Because I showed you, the herniations there, hasn't changed. The fracture and the disc herniation is there, and that will never heal.

There was a disc herniation that occurred in 1988, which narrowed, this is still there and has progressed on and is maybe a little larger and certainly has lost water. It is now a degenerated brittle disc, and there is a herniation at 2-3 and bulges at the other two levels.

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And I do believe that the instability of the spine, I mean, clearly the fracture is not a trivial thing. Some sort of significant trauma must have happened to fracture a bone in the back like that and to herniate at 5-1.

And I think and I know that once the back is injured, an instability can occur, and once instability occurs, you try to compensate for it, that means premature arthritis or quick degeneration, that wouldn't be seen without an injury.

Basically, I am saying an injury can cause premature degeneration of the back and that's what I think has happened.

Q Thank you.

One last question.

Dr. Kolb, is this the kind of condition that can improve with age, or get better?

A It will get worse. No herniation goes back in. Once you have dried out and desiccated a disc, it never gets the water back. Once the narrowing occurs, it will never puff back out to the way it was before an injury.

So, none of these are going to go back to normal, and we have a progression over 11 years, getting worse, and it's reasonable to suspect that it will continue getting worse.

Q Are you reasonably certain of that conclusion?

A Yes.

MR. HILLER: Thank you. I have no further questions at this time.

THE COURT: Are you ready to proceed?

MR. BEGOS: Sure, your Honor.

THE COURT: Will you be using the light box?

MR. BEGOS: I think so.

THE COURT: Doctor, you can return to your seat.

CROSS-EXAMINATION

BY MR. BEGOS:

Q Dr. Kolb, we were discussing on direct the 1988 MRI. That would be this blowup?

A Yes.

Q You testified that up here at L-1 -- and if you want to come down to look at this, please feel free to do so. You testified there is a lighter area up at L-1, which is edema or swelling around the fracture?

A Right.

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Q So, the MRI can show and can image swelling or inflammation in or around the bone; is that correct?

A That's correct.

Q Now, there is no swelling or edema shown down around the L-5/S-1 disc; is that correct?

A That's correct.

Q Swelling or edema is a fancy word for a bruise, correct?

A Very fancy.

Q A bruise is something that occurs when there is a trauma to a part of the body?

A Correct.

Q So, the bruise up at L-1 is indicated that there was a trauma to the L-1 disc?

A Yes, a fracture.

Q This was about three weeks after Dr. Wurm's horseback riding injury?

A I think so.

Q There is no bruise down at L-5 or at S-1?

A No swelling in the bone. That's correct.

Q Now, you said that you see a herniation of the L-5/S-1 disc in this 1988 MRI?

A Yes.

Q Can you say, to a certainty, that this herniation in L-5/S-1 was not present before Dr. Wurm's horseback riding accident in November of 1988?

MR. HILLER: Objection to form.

THE COURT: Sustained.

Q Is it possible, Dr. Kolb, that this herniation was present in Dr. Wurm's back before her horseback riding accident?

A Sure.

Q Would the lack of edema around the herniation be suggestive that the herniation wasn't caused by a trauma?

A Absolutely not. The majority of herniations do not have soft tissue swelling. In fact, it takes a fracture like that, which is severe, to have edema or swelling.

Q You say the majority of herniations don't have edema. Some herniations do, correct?

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A It's highly unlikely to have narrow edema with a traumatic herniation.

Q In the cases where there is edema with a herniation, would that be cases where there was trauma?

A Usually an associated fracture, if that's the case, yes.

Q So, certainly if there was edema around the herniation, that would allow you to conclude, with some degree of certainty, that the herniation was caused by a trauma?

MR. HILLER: Objection.

THE COURT: To the form?

MR. HILLER: Yes.

THE COURT: Sustained.

Q If a doctor were to testify that inflammation or swelling can't be seen on an MRI, he'd be wrong, correct?

A Absolutely.

Q There is no doubt swelling can be seen on an MRI?

A Increased water, which we call swelling, can most certainly, MRI is very sensitive to seeing that.

Q If Dr. Kaplan were to say that you can't also see inflammation or swelling on an MRI, he'd be wrong?

A When somebody says they can't always, there's never always always. I'm saying that it's a very good thing, a very good test, MRI, to look for swelling. Nothing is always always.

Q If there were general swelling around the lumbar spine, that would show up on an MRI?

A When you say around, in what structures?

Q The area surrounding the lumbar spine, whether in the bones or thecal sac?

A Thecal sac doesn't swell. It's a membrane. In the bones, if there were swelling in the bones, it would be seen on MRI.

Q Let's say there was a herniated disc impinging on a thecal sac causing inflammation in the area of the thecal sac, that would be something you can see on the MRI?

A If the inflammation was severe enough to include the soft tissues around it, even muscles, you can see.

Q You discussed at the beginning of your direct examination that the spinal fluid surrounding the spinal cord is contained within the thecal sac?

A Yes.

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Q So there is a gap between the thecal sac and the spinal cord; is that correct?

A Yes.

Q That gap is filled with spinal fluid?

A Yes.

Q So it's possible to press on the thecal sac without pressing on the spinal cord; isn't that correct?

A Yes.

Q Pressing on the thecal sac, in and of itself, doesn't necessarily cause any problems with the spinal cord within the thecal sac, does it?

A May or may not.

Q The pressing on the spinal cord is something more likely to cause problems than simply pressing on the thecal sac?

A More likely, yes.

Q Getting back to the L-5/S-1 disc here, is it possible that someone leading an extremely active life-style, swimming, running, skiing, skating, wind-surfing, might have some herniation to L-5/S-1 disc without a trauma like a fracture to a vertebra?

A Yes, I agreed to that before. Absolutely.

Q Would extreme physical activity make a herniation of L-5/S-1 disc more --

THE COURT: What is extreme physical activity?

Q If somebody is active four or five days out of the week, does some form of exercise, whether running, wind-surfing, skating, swimming, on a regular routine basis throughout their lives, is it possible that that level of activity, without any other trauma to the spine, could cause a herniation of the L-5/S-1?

MR. HILLER: Objection, relevance. There is no evidence in this case that that sort of activity could possibly be relevant here. There's no testimony that Dr. Wurm was doing that sort of thing.

THE COURT: Limit it to the actual activity of which there's evidence.

Q Okay.

MR. BEGOS: Bear with me for one second, your Honor.

BY MR. BEGOS:

Q Doctor, let's assume for the purposes of this question that you have a person who loves doing out door sports and actually did quite a lot of them; who did horseback riding, wind surfing, roller skating, ice skating, some skiing, sailing; who was on the swim team when in college, swam competitively.

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Who went horseback riding a few times a year, who went wind surfing pretty much every weekend during the summer and whenever she would go away on vacation; or did running, not so much, not so much as she should have, who swam regularly, was on the swim team in college and was able to keep up throughout dental school on a routine basis; who went roller skating every month or so. Who went ice-skating during the season, that and skating a couple of times during the month.

Would a person who had that activity level be a person who might have a herniation of the L5-S1 disk when she was, oh, say, 30 or so without suffering a fracture of the vertebra.

MR. HILLER: Objection, Your Honor, what relevance is it if she might. The question is whether it is reasonably probable.

THE COURT: You have to ask it in the proper medical form.

THE COURT: You have to ask with a reasonable degree of medical certainty.

Q With a reasonable degree of medical certainty, Doctor Kolb, could a person like that, with that level of activity suffer a herniation of the L5-S1 disk?

MR. HILLER: Go ahead.

A Could, always could. My answer to is it is variable from person to person, and in fact people who are very fit and active may have stronger spinal muscles which would be less probable for them to herniate their disk than people who are sedentary, and jerked around being maybe, whatever, overweight or never working out, and jerk their back and all of a sudden they have back pain.

It is very common for people who do no activity at all to all of a sudden get back pain, where people who are active, run and windsurf, maybe fit into their 40s and 50s, God willing.

Seriously, your suggestion that because someone is active they are more likely or possibly could be more likely to develop a disk herniation, I disagree with.

It could be, of course it could, but not necessarily more prone to getting a disk herniation than somebody who does not work out at all.

Q Almost anybody could possibly develop a herniation of L5-S1?

A Could is always a word.

Q I'm sure in the course of your career you have seen a lot of herniation of L5-S1 disk?

A Yes.

Q You have seen a lot of herniation of L5-S1 disk without a fracture after lumbar vertebrae?

A Most often.

Q You did testify that the disks at L1 L2, L2 L3, L-4, and L4-L5 were normal in 1988?

A No, L1-2 is herniated down from the fracture.

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Q Isn't this T 12, L-l?

A I have to look at it again.

Q This is L1-2, L2-3?

A You are right. You are correct.

Q So L1 L2, L-2 L-4?

A L3-L4.

Q Can I get my license, by the way, for radiology based on that.

A Okay.

Q Let me ask the question again. L1-L2, L2-L3. L3-L4 and L4-L5 in this 1988 film are normal?

A Yes.

Q And it is your testimony that the fracture as you stated on direct, that the trauma that caused the fracture didn't injure these four disks but caused a herniation of L5-S1?

A Sure. Absolutely.

Q Doctor, you testified on direct examination that, and I'm paraphrasing, that your belief was that the injury to Dr. Wurm's L-1 vertebrae predisposed her to the degenerative problems that you saw later in the MRIs in '99?

A Yes, and that there is the 5-1 herniation as well.

Q I think you said it is because the injury could result in an instability and the instability could result in degeneration?

A Yes.

Q Let's say -- withdrawn.

Could a mild case of scoliosis also predispose a person to disk degeneration?

A It could.

Q Let's say a person had a mild case of scoliosis and some trauma to the back, can you separate, to a reasonable degree of medical certainty, any degeneration caused by the scoliosis from degeneration caused by trauma?

A Yes. To a degree because you know the person had a scoliosis as a child growing up and the back looked a certain way when the pictures were first taken, and the trauma happened at a certain instance, and we have pictures after the trauma showing what happened to the back.

So the patient had a lifelong scoliosis, had an incident relatively later in life, the trauma, and we saw what the back looked like at the time of the trauma, then after the trauma.

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So it is unlikely that the scoliosis had a significant contribution, whereas it is more likely that a trauma had a significant contribution.

Q Let's say a person with a mild case of scoliosis, would it be unusual for see a lumbar spine where the disks were relatively normal and then ten years later to see degeneration?

MR. HILLER: Objection to form.

THE COURT: Sustained.

Q If scoliosis was causing a degeneration of the disk in the lumbar spine, would you expect to see a change in the disk over a course of ten years?

MR. HILLER: Objection.

THE COURT: Sustained.

Q You testified that you cannot be certain that this L5-S1 disk herniation that you see her wasn't present before the horseback riding accident.

A Yes.

Q So if Dr. Wurm had a mild case of scoliosis it is possible to a reasonable degree of medical certainty that that scoliosis caused the herniation before the horseback riding accident, is that right?

MR. HILLER: Objection.

THE COURT: Sustained. Please ask it in a certain way.

Q Doctor, can you rule out the possibility that a mild case of scoliosis did not cause the herniation of L5-S1 disk?

A It's unlikely because the patient, as I am told, was asymptomatic, had no symptoms; the patient had a trauma. Now has symptoms referable to the S1 nerve root.

We do an MRI soon after the trauma and find a herniation; lo and behold affects the S1 nerve root. So it is unlikely that someone who had a scoliosis since she was born and developed, therefore, because the herniation which may effect S1 where she had no symptoms at all and complained of nothing, and all of a sudden had a trauma and now complains of a problem that is exactly referable to the place she had her herniation.

Therefore it is unlikely or less likely that a scoliosis caused this rather than the trauma.

Q Now, the symptoms that you are referring to are pain, correct?

A This is what I'm told.

Q This is what you are told. You didn't -- let me ask you this, did you review the exam notes by Dr. Wurm's treating physicians?

A No.

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Q And would those examination notes be relevant to confirming whether or not the symptoms that you have been told Dr. Wurm experienced after her accident were actually suffered by Dr. Wurm after her accident?

A They maybe. I'm answering the question as it's being asked of me, being told what her symptoms is.

Q Let's assume for the purposes of this question that Dr. Wurm's orthopedic surgeon in the year and a half after her accident routinely reported that Dr. Wurm on examination was neurologically intact?

A Does that mean she do not have pain or she did have pain.

Q Was neurologically intact. Do you understand that term?

A Tell me how he determined that.

Q Let's assume for the purpose of this question, Doctor Kolb?

MR. HILLER: Would you tell me what you are referring to?

MR. BEGOS: December 6, 1988.

Q That couple of weeks after the accident, upon examination, Dr. Wurm complained of pain in the lumbar spine region around the L-1 with radiation up/down, sideways with associated spasms. No numbness, no tingling, no pins and needle. No weakness. No bowel or bladder control symptoms. Neck and arms are basically fine. Pain is in her back predominantly without the legs being involved.

Coughing and sneezing accentuates her back pain. Physical examination shows that she has normal reflexes for knees and ankle. Normal sensation to touch for her legs.

MR. HILLER: Your Honor, I will object. He is reading from a document, although I'm not crazy about it, I have a problem with him skipping the parts that says “sitting is painful. Sleeping is difficult.”

MR. BEGOS: It is my hypothetical.

MR. HILLER: I will ask the same hypothetical including the findings --

THE COURT: Your point is?

MR. BEGOS: I will rephrase the question.

Q Let's start over.

We are assuming this is about three weeks after the accident. On examination by an orthopedic surgeon, spinal surgeon, the following is determined, that Dr. Wurm complains of pain in the lumbar spine region around L-1 with radiation up/down, sideways with associated spasms. No numbness. No tingling. No pins and needles. No weakness. No bowel or bladder control symptoms. Neck and arms are basically fine. Pain in her back predominantly without the legs being involved.

Coughing and sneezing accentuates her back pain. She has pain at nighttime. She can walk around ten feet or so, stops because of pain. Standing is okay for short time. Sitting is painful. Driving, she is not doing now. Sleeping, she cannot sleep well.

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Ordinarily she enjoys multiple activities including scuba, sailing, mountain climbing, dancing, et cetera, wind surfing.

She states she fell from horse 11/12/88. There was no loss of consciousness and she was neurologically intact by history. She was admitted to North Shore Hospital for care there, and in one to two weeks was discharge from the hospital wearing a brace and a TENS unit.

Physical examination shows she has normal reflexes for knees and ankles, normal sensation to touch for her legs, and normal power testing of her legs, L-2, three, four, five S1 both sides. Straight leg raising and bowstring signs are negative. Babinski signs are plantar flexor. Hips are mobile and pulses are good. Unable to walk well because of the pain.

Clinical impression, patient sustained a compression fracture of L-1 which apparently is mechanically stable, which appears to be entirely neurologically intact. Whether or not there was any disk damage at the same time will be determined by doing MRI study in the next days or so, as well as follow up routine x-ray will be scheduled as well.

Assume those findings, those symptoms, doctor, can you rule out the possibility that Dr. Wurm's, the herniation that you see at L5-S1 was not present prior to the accident.

A Yes, I just explained to you why.

Q Because of what you understand to be her symptoms?

A Yes. And he says it many times there. He says that the pain is referable to S1. She had no pain prior to an accident. She now has pain referable to right S1, he says that in there.

I am saying there is a herniation of 5-1 affecting the S1 nerve root on the right. She has no pain; she has pain.

Q You are saying in this hypothetical, doctor, there was a statement that the pain is referable to S1?

A Yes.

Q Doctor, I don't see any S1?

A If you want me to look through it I will.

(handing)?

A Okay, I'm sorry, I never read this document before and I was listening to you. What he said is the pain is referable -- here it is, she complains of pain in the lumbar region around L-1. Sorry, L-l.

Q That is where the fracture is?

A That is where the fractured occurred.

Q That is something you would expect three weeks after a fracture?

A Yes. Not unreasonable.

Okay it just says back pain here.

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Q No reference to S-17

A No.

Q Now, if you can remember the hypothetical, and please do not ask me to read it all again or the jury will kill me. but --

THE COURT: The jury?

MR. BEGOS: Everybody will kill me.

Q Based on those symptoms in those clinical findings three weeks after the accident, can you, Doctor Kolb, say, can you rule out the possibility that the L5-S1 herniation was present prior to Dr. Wurm's accident?

A Again I say I cannot rule it out as I said before. But as I say again, it's more likely with an asymptomatic patient prior to an accident to have not been there, and now after the trauma and that being there all along and was silent, and now has pain in her buttock, which is S-1.

So nothing has changed.

Q People do have herniated disks without suffering pain?

A They can.

Q So just by looking at, say this MRI, this '88 MRI. say you didn't know this was Dr. Wurm, let's exclude the fracture for a second, you could not look at this MRI and say aha, this patient is suffering pain could you?

A No.

Q And it's important. to understand the clinical symptoms in order to connect an MRI image of a disk problem with complaints of pain.

Isn't that correct?

A Yes.

Q So it would be important to know what the actual clinical observation made by Dr. Wurm's physicians; in 1988, '89, and '90 were in order to make a determination as to whether her symptoms were caused by any particular problem.

Is that correct.

MR. HILLER: Objection, Your Honor.

THE COURT: Sustained.

Q You took an MRI of Dr. Wurm in 1999?

A Yes.

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Q You prepared a report of that MRI?

A Yes.

Q Do you have that report with you?

A No.

Q Let me get a copy for you.

This is Plaintiff's Exhibit AB for identification.

MR. HILLER: Sorry. whose exhibit?

MR. BEGOS: Sorry. Defendants' Exhibit AB for identification.

Q The report, doctor, doesn't make any mention of any problem with the alignment of the lumbar spine, does it?

MR. HILLER: Objection Your Honor. I didn't ask this witness anything. It is beyond the scope of direct. I didn't ask this witness about anything about alignment.

THE COURT: I will allow it.

A Sorry.

Q Your report of your 1999 MRI does not make any mention of any problems with the alignment of Dr. Wurm's lumbar spine, does it?

A I'm not sure what you mean by alignment. What does alignment mean?

Q Alignment would be improper forward leaning or side to side stability of the spine?

A That is correct.

Q It does not make any mention of that?

A That is correct, those two things are not there.

Q And had they been there you could have seen them on your MRI?

A Yes.

Q Had you seen them, you would have reported them?

A Yes

Q If another doctor voiced an opinion that in 1999 or 2000 there was an alignment, misalignment in Dr. Wurm's lumbar spine, that would be a finding inconsistent with your 1999 MRI?

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A Not necessarily. What would that person's observation be based. On that there is an alignment problem, on the same MRI or a different way of examining the spine.

Q Let's say there is a statement there is a misalignment of the spine?

A Made out of thin air? Why would somebody say that?

THE COURT: In other words, this is not a question you can answer?

THE WITNESS: Right.

Q You need more information to answer the question?

A Sure.

Q Did you review, well you reviewed obviously some x-rays and films of Dr. Wurm's spine, taken before your MRI?

A Yes.

Q And you reviewed, I assume, more films and x-rays and MRIs than we have seen her today?

A I may have.

Q In any of the MRIs or x-rays or CAT scans that you reviewed, you recall seeing any misalignment of Dr. Wurm's spine?

A No.

Q Is it correct, Dr. Kolb, that the older a person gets the more likely that person is to have a disk problem that would show up on an MRI?

A Sure.

Q In general -- as a general matter is it correct that the center of the disk, the I believe it is the nucleus pulposus?

A Pulposus.

Q --tends to dry out with age?

A Yes.

Q And that is called desiccation?

A Yes.

Q So desiccation is something that occurs naturally in disks as people age?

A It can.

Q As desiccation occurs, the disk is more likely to develop cracks or herniations?

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A Yes.

Q Because it's drier and more brittle than non-desiccated?

A That is not why it causes herniation. The ligaments that holds it in place can also fray or be damaged. and herniate. Just because a disk is brittle does not mean it's going to herniate through the ligament.

Q But a desiccated disk is more likely to develop cracks or bulges or herniation?

A It is not clear what comes first. Something bulge and herniate then dry out, or something dry out first.

In the case of trauma, for example, you can have a case of perfectly health disks that herniate and because it pushes through its light covering, it now dries out.

Q Now, in your MRI of Dr. Wurm, wh?? I believe a portion of that is 48A, is that correct, and you can come down and look at it if you wish to confirm that?

A I trust you.

Q You reported an intrabody disk herniation at L-1?

A Yes.

Q And you were referring there, I take it, to the T 12 L-1 disk?

A Yes.

Q That is the disk here above the L-1 vertebrae?

A Yes.

Q You didn't see any problem with the L-1 L-2 disk in your MRI, did you?

A That is right.

Q In fact, would it be accurate to say that in the lumbar spine the L-1 L-2 disk is the most normal?

A Yes.

Q That is the disk immediately below the vertebrae. that fractured. Is that correct?

A Absolutely.

Q So the disk immediately below Dr. Wurm's fracture is the most normal in her lumbar spine.

Is that correct?

A Absolutely.

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Q You didn't see any nerve root compression at the L-1 L-2 level?

A Normal.

THE COURT: Do you have anything else of this witness.

MR. BEGOS: Yes, Your Honor.

Q Doctor, with respect to the L5-S1 disk, you say in your report, and I think this is consistent with what you testified to, that there is bilateral neural foraminal narrowing at L5-S1, also L4-L5?

A Yes.

Q You don" say is this report that there is a compression of the nerve root at L4-L5 and L5-S1?

A Do I use those words, no.

Q Did you review the report of an MRI done of Dr. Wurm's spine in May of 1989?

A I don't remember whether I did or didn't.

Q Let me show you what has been mark as Defendants' Exhibit Y for identification.

Do you recall reviewing that MRI report?

A No, I don't recall reviewing this report.

Q You recall reviewing the films of the MRI itself

A No, I don't recall whether I did or didn't.

Q Back to your report you state that there is a posterior disk herniation at L-2 L-3 impinging on the thecal sac?

A Yes.

Q You didn't say there was any nerve root compression at L-2 L-3?

A Are you saying there is a difference between impinging and compressing.

Q I am simply saying your report says there was impingement on the thecal sac?

A Yes, there is abnormal pressure being placed on the thecal sac which contains the nerve roots.

Q You didn't say there was compression of the nerve root itself?

A No, I didn't use the word you like, your terms.

MR. HILLER: I didn't hear the end of that.

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A I didn't use the words that you seem to like.

Q At L-2 L-3 there is no report of any narrowing of the neural foramen?

A In 1999?

Q Yes?

A No. There isn't.

Q So the neural foramen L-2 L-3 were normal on your review of the MRI?

A Yes.

Q And the neural foramen is where the L2-L3 nerve root passes through?

A Yes.

Q And that herniation at L2-L3 wasn't present in the 1988 MRI.

Is that correct?

A That is correct.

Q So that herniation occurred sometime between 1988 and 1999?

A Yes.

Q Did you review the either the report or the films of the MRI taken in May, 1989, did I ask you that-- I asked you that already, I apologize.

In your MRI you saw bulges of the disk at L2-L3 and L4-L5?

A I saw bulges at 3-4 and 4-5.

Q There were no bulges in 1988 at 3-4, 4-5, correct?

A Correct.

Q You didn't review-- withdrawn. Is it correct that you didn't review any films of X-rays or MRI's done in 1993 or 1994 or 1995?

A I don't specifically remember reviewing, other than what I have shown here.

Q So, we've talked about what Dr. Wurm's condition of her spine on MRI was in 1988 and what the condition was of her spine in 1999. Other than saying the condition of her spine was --

With respect to the condition of her spine in 1994, can you say, to a reasonable degree of medical certainty, how her spine would have looked on MRI, other than something between '88 and'99.

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MR. HILLER: Objection, form.

THE COURT: To the form?

MR. HILLER: Yes.

Q Let me ask it a different way, Doctor. Can you draw any conclusion, to a reasonable degree of medical certainty, about what the precise condition of Dr. Wurm's spine was in 1994?

A Some midway point between '88 and '99.

Q But where in that range, you can't say?

A Half way.

Q Excuse me?

A Half way.

Q Is that just a guess or are you certain?

A You said medical certainty. I see this is progressing on from '88 to '99 and half of the way there, half of the changes have taken place.

Q Is it possible that more changes took place after 1994?

A Sure, anything is possible.

Q You don't know because there's no image that would allow you to see what the spine looked like?

A You asked me a reasonable certainty, not definitely so.

Q All right. Thank you.

MR. BEGOS: I have nothing further.

THE COURT: Any redirect?

MR. HILLER: Yes, please

REDIRECT EXAMINATION

BY MR. HILLER:

Q Doctor, what is a sciatic distribution?

A It's the distribution of the particular nerves, S-1, S-2 that go down the buttocks in the back.

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Q Would that be in any way -- withdrawn. If someone was showing pain along the right sciatic distribution, would that reflect -- withdrawn.

Could you correlate pain along the right sciatic distribution to a herniation at the L-5/S-1 level?

A Yes, the sciatic distribution includes S-1 and the herniation is at 5, S-1.

Q So, if one of the doctors, for example, reported that my client was having pain along the right sciatic distribution. in May 1989, six months after the accident, that could be referable to the L-5/S-1 level where there is a herniation; is that right?

A Absolutely.

Q In fact, that would be the most typical symptoms for someone who has an L-5/S-1 disc herniation?

A Absolutely.

Q Now, if someone was complaining of chronic past in the right gluteal area-- hold on. Let me get back to that one issue.

If the patient denied having any pain along the right sciatic distribution prior to the accident but then subsequently complained of such pain, would that give you any indication as to whether or not the L-5/S-1 disc herniation had been there all along or whether it was caused by the accident?

MR. BEGOS: Is Mr. Hiller going to ask about a reasonable degree of medical certainty.

Q To a reasonable degree of certainty?

A If there was no pain before whatever trauma there was and there's now pain that's referable to a distribution of a nerve affected by the herniation, there is a very strong reasonable probability that that herniation was due to the trauma that was now causing her pain.

Q What is the lateral thigh, what part of the body?

A Outside of the thighs.

Q If someone is complaining of chronic pain to the gluteal area, what nerves are implicated by that pain?

A That's the buttock, lower hip, S-1.

Q So, if on August 3, 1989 my client was reporting chronic pain in her gluteal area, would that have any --would that correlate at all to the L-5/S-1 herniation you've identified?

A Same as we said before, absolutely.

Q So, I'm not going to do it because your time is precious, Doctor, but if I were to go through the records and findings in which my client reported continuing pain in her right hip, right buttocks and right back of the thigh area, would that at all have any correlation to the L-5, S-1 herniation which you found on the December 6, 1988 films?

A Yes.

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Q That would mean that if she were pain free before the accident and subsequently complained of pain to doctors afterwards in the right buttock, right back of the thigh, right hip, that would be referable to the L-5/S-1 herniation?

A Yes.

Q Thank you.

THE COURT: Is that it?

MR. HILLER: No. I'll try to move along.

THE COURT: Are you going to be using the easel?

MR. HILLER: Not for a few minutes. I'll move it out of the way.

THE COURT: When you say not for a few minutes, this is redirect.

MR. HILLER: I'll move it along, Your Honor.

Q Mr. Begos asked you about May 1989 films. You recall that?

A Yes.

Q Do you recall having reviewed films that you considered to be incomplete?

A The films that I remember reviewing are the ones that were adequate to make a diagnosis.

Like I said, it's possible I looked at films in the interim but I could not make a diagnosis on it because it was incomplete or for whatever.

Q It's possible you did review another film?

A Absolutely it's possible, sure.

Q Now, you indicated that there was a herniation that occurred at L-2/L-3 sometime between December '88 -- which is reflected on this film and July 20, 1999, which is reflected on the MRI that you reviewed?

A Yes.

Q Okay, why would herniation of the L-2/L-3 level develop, based upon your review of the films and understanding of the history?

A As I said--

MR. BEGOS: Object?

THE COURT: Why would it develop?

MR. HILLER: I'll rephrase the question.

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Q Can you give an opinion, to a reasonable degree of medical certainty, as to why a herniation at the L-2/L-3 level would develop after the December 1988 film?

A Yes.

Q What is that opinion?

A Clearly, there was some significant trauma to the point where a fracture occurred. Clearly, I believe, from what I'm hearing, that there was also a herniation at 51 that was resulting from the fracture and the trauma, at least, from the trauma.

When a spine -- when an injury that's that severe occurs to a spine, in order to compensate for those injuries, you can develop instability in the spine. When that occurs, there are unusual stresses placed on areas of the spine that ordinarily would not occur.

It's not surprising that an 1-5/S-1 herniation occurs even though the fracture is at L-1 because the most common sight of herniation in anybody is L-5, S-1 the lower, because that is the weakest disc.

So, it's not unusual to have a herniation at L-5 S-1 but 1-2 is normal. That being said, there's still unusual stresses being put on the spine because of the trauma which can predispose somebody to premature degeneration which includes other herniations, bulges, desiccation, so on.

Q Is it significant at all that at every level of the lumbar spine except L-1/L-2 there appears to be desiccation, bulging discs, other herniation?

A Yes, it's more likely for the lower levels to be involved than the upper. The fact that 1-2 is normal is irrelevant, even though the fracture was in the superior endplate of the L-1.

Q Mr. Begos asked you questions about the possibility that you can have a herniated disc without pain, right?

A Sure.

Q But if the patient is giving you clinical symptoms which correspond to those herniations, does that at all allow to you determine whether or not the herniation is causing pain?

MR. BEGOS: Objection, Your Honor. Leading.

THE COURT: Does it allow to you determine?

MR. HILLER: Yes.

THE COURT: Sustained.

MR. HILLER: I have no further questions.

THE COURT: Okay.

MR. BEGOS: No questions.

THE COURT: Thank you, very much.

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THE WITNESS: Thank you, very much.

THE COURT: Okay. Now, we're going to break at this point and you know that we will not resume until April 2 at 2:15. Remember, I gave you that schedule and also several people have asked me about April 9. I don't know how long we'll be in session, but we'll not be in session on April 9.

Good night.

(Whereupon, the jury leaves the courtroom.)

(Trial adjourned to Monday, April 2, 2001.)

End of Document

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