In The Matter Of:

Bernard Verdon & Mary Verdon v.
Port Authority of New York and New Jersey

Dr. Andrew Merola
April 4, 2014

Renee Scott, CSR, RPR
Bronx Supreme Court
851 Grand Concourse, Room 6M-14
Bronx, NY 10451

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SUPREME COURT OF THE STATE OF NEW YORK

COUNTY OF BRONX: TRIAL TERM PART IA-4

- -X

BERNARD VERDON AND MARY VERDON, :

: TESTIMONY

Plaintiffs, Dr. Andrew Merola

- against - :

PORT AUTHORITY OF THE CITY OF NEW YORK, :
AND NEW JERSEY, TISHMAN CONSTRUCTION
CORPORATION OF NEW YORK AND BOVIS LEND
LEASE LMB, INC., :

Defendants. :

- X

Index No.309654/2009

Bronx Supreme Civil Court
851 Grand Concourse
Bronx, New York 10451

April 4, 2014

B E F O R E: HONORABLE HOWARD H. SHERMAN
Justice of the Supreme Court

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Official Court Reporter

COURT OFFICER: Jury entering.

(Jury enters courtroom; the following occurred:)

THE COURT: Welcome back. Have a seat. Everyone can have a seat.

Plaintiff's next witness is?

MR. McCRORIE: Your Honor, plaintiff calls Andrew Merola, M-e-r-o-l-a, MD.

(Witness approaches witness stand.)

COURT OFFICER: Please place your left hand on the bible and raise your right hand.

D O C T O R A N D R E W M E R O L A, a witness called on behalf of the Plaintiff, having first been duly sworn/affirm, took the stand and testified as follows:

COURT OFFICER: Please state your name for the for the record.

THE WITNESS: Andrew Merola.

COURT OFFICER: And please spell your whole name.

THE WITNESS: M-e-r-o-l-a.

COURT OFFICER: And your first name.

THE WITNESS: A-n-d-r-e-w.

THE CLERK: Thank you. Please be seated.

THE COURT: Doctor, please keep your voice up. It's very hard to hear.

THE WITNESS: We'll do. Thank you.

DIRECT EXAMINATION

BY MR. McCRORIE:

Q. Still morning. Good morning, Dr. Merola.

A. Good morning.

Q. Again the courtroom has a little higher ceiling, the voices don't travel as far so if you can just, as the judge told you, keep it up.

Could you please -- as the first medical witness, I'm going to ask you to define certain medical terms so we don't have to go through it with every doctor regarding your education but as we're required, can you tell the jury if you are licensed to practice medicine in the State of New York?

A. Yes, I am.

Q. And when did you become licensed?

A. 1992.

Q. Now, I want you to go through your educational background as we do with everyone. We know you had to have gone to college. Where did you go to undergraduate?

A. I did undergraduate college degree at New York University.

Q. Just if you could tell the jury what your undergraduate degree was in?

A. I did an undergraduate degree in chemistry.

Q. And where did you then go to medical school?

A. I went to medical school at Howard University College

of Medicine in Washington D.C.

Q. When did you graduate Howard University College of Medicine?

A. I graduated in 1990.

Q. Now, being the first physician to testify, can you just take us through your internship, residency, if you did any fellowships and if you can tell the jury, for those that may not know what those words mean in medical terms? Sometimes internships are pretty much in the place you work but in medicine it's something else.

A. So after I graduated from medical school, I came to Kings County Hospital Downstate Medical Center in Brooklyn, New York where I did an internship in general surgery. That's your first year after you graduate from medical school. And since I was going into orthopedic surgery, we all started with about two years worth of what we call general surgery. So I did that training at Kings County Downstate.

After I finished that training, I started my orthopedic residency and that's a training program where you specifically focus on treating bones and joints and the musculoskeletal system, the neck and back, the arms and the legs and I finished my training at SUNY Downstate in 1995. After I left Downstate, I went to the University of Colorado in Denver, Colorado where I did a one-year postgraduate training program called a fellowship in orthopedic reconstructive spine surgery

and that's where I just focused on surgery for the neck and the back.

After I finished all of my training, I came back to New York City and I took a position as an assistant professor of orthopedic surgery at Downstate in Brooklyn where I ran the spine surgery service there. I ran the sclerosis clinic at Kings County Hospital also the Pediatric Deformity Spine Clinic at Long Island College Hospital and taught residents and the interns and students and I still teach at SUNY Downstate. I was promoted to associate professor several years ago and I also have a couple of other hospitals that I'm at Mount Sinai Hospital in the City and New York Hospital as well and I have teaching positions at those hospitals also.

Q. In addition to teaching positions, do you have -- you might have just said it -- do you have what's known as privileges at these hospitals or other hospitals?

A. Yes. I do.

Q. Tell the jury what privileges is as well?

A. So what that means is when a hospital grants you privileges to admit patients and treat patients at the hospital it means that if I have a patient that I see in my office that requires me to admit them to the hospital for surgical procedure I'm allowed to bring them to those hospitals so I can use the operating room and the facilities to operate on them and recover them in the hospital and treat them, if you will, in those

hospitals. So I have privileges at Downstate System Hospitals, Mount Sinai and New York Hospital as well.

Q. Are you board certified in any areas of medicine? If so, please tell the jury the significance of board certification?

A. I am. And board certification is the process that you undergo after you finish your training and it certifies your educational progress and your competency in your specific field. It starts with an exam which is taken after you graduate your training and then after you're in practice for two years you collect your cases, if you will, your x-rays and your MRI's and your treatment records for patients that you've done reconstructive surgery for and you sit in front of a board of examiners that then ask you questions about what you've done and why you've done it. When you have passed both parts of that examination, you are then granted what is known as a board certification. That process is repeated every ten years.

So I was first certified in 1998 which was two years after I finished my fellowship. I recertified in 2008 and so I'm due for another recertification in 2018 and the periods of time that we take in between the certification process, we are continually doing exams, attending meetings and submitting documents and data to the board in order to maintain our certificate of certification.

Q. And now you might have just told the jury in what area

you were certified in?

A. So my area is orthopedic surgery with a subspecialty in spinal reconstructive surgery.

Q. Can you tell the jury what the subspecialty, and the words might be self-explanatory, but what does spinal reconstructive surgery mean?

A. So specifically that deals with the neck and the back and I do pediatrics, that is children and adults. reconstruction means addressing from a surgical perspective problems that occurred to the neck and back that require something to be done surgically in order to address a particular anatomical problem and so that's what all those big words mean. It basically means I'm a surgeon that works on neck and back in children and adults.

Q. Just I'm going to get what your current practice is. Do you, for instance, treat ailments of the hips and the knees or extremities?

A. I see those patients as part of my practice and I evaluate those portions of the body and their relationship to the neck and back and then I generally refer arms and legs and hips and knees out to my orthopedic colleagues who spend more time doing those kinds of operations because my focus is basically surgery for the neck and back.

Q. Can you tell the jury on an average how many spine surgeries, the neck and back you do in a given year?

A. So in any given year, I do an average of about I would say about 225 to 230 surgeries per year and so I've been actively doing this as an attending since 1996. So that's a lot of operations on the neck and back for all those years.

Q. Do you have a current practice?

A. Yes.

Q. Can you describe for the jury, first if you could tell them the name of your practice and if you could give them a history of your practice? For instance, if it was a different practice with a different name in November of 2009 and when this became the practice you're currently in?

A. So I'm in private practice which means I see patients on my own, that I'm responsible for and that I take care of them in my office.

When I first came back to New York City and I started at SUNY Downstate, I was also at St. Vincent's Hospital in Manhattan and I was part of a group of treating orthopedic surgeons there who I trained with when I was a resident and that group of orthopedic surgeons was known as the University Orthopedics. After Saint Vincent's Hospital closed, we split up, so to speak, and we developed our own offices on the side and that's always been under my name. So back in 2009, for example, when Saint Vincent's was in the closing progress, I was still the spinal surgical consultant for a group practice known as University Orthopedics.

Q. And in November of 2009, can you tell the jury where University Orthopedics had its offices?

A. Two main locations for University Orthopedics one in Astoria, Queens; the other one was in the O'Toole Building on Seventh Avenue across the street from Saint Vincent's Hospital.

Q. Did you see any of the spinal patients from that practice at either of those two locations?

A. Yes, I did.

Q. And would you tell the jury at what time period you left that practice but would you tell them when you started your own?

A. Yeah. Well, I'd always been in my own practice and I was a consulting spine surgeon for University Orthopedics and then that lasted up until Saint Vincent's Hospital closed.

Q. Do you still actually accept spine patients referrals from them?

A. Yes. We worked together and I send the orthopedic surgeon their patient and they refer to me and we still work together, yes.

Q. Does your practice currently accept work accidents that happened at work and all of those rules, authorizations and special procedures that come along if you're going to accept a work accident?

A. Yes.

Q. And if you accept one patient like that, you need to accept anyone like that, correct?

A. Yes.

Q. Back in November of 2009, did University Orthopedics accept work accident cases and those special rules and procedures and authorizations that would be required?

A. Yes.

Q. That process?

A. Correct.

Q. Okay. Did University Orthopedics also accept other types of cases?

A. Yes.

Q. It could be any other -- it could be individual private payer or motor vehicle or something like that?

A. Yes.

Q. Have you ever testified in court before?

A. Yes.

Q. And have you ever testified in court on a work accident case of a construction worker where one of the -- where your patient was also our client?

A. Yes.

Q. And are you being paid for your time having not doing surgery today or having come to court for Mr. Verdon's case to testify about your treatment?

A. Yes. I'm being reimbursed from the time away from the

office, yes.

Q. And what is the rate you're being compensated?

A. $650 per hour.

Q. Including and again that's canceling your day to have to be here, both starting at 11 until whenever we end today?

A. Yes.

Q. Understanding that -- withdrawn.

Is Mr. Brian -- Bernard -- you call him Brian as well?

A. Sometimes.

Q. Is Brian Verdon a patient of yours?

A. Yes, he is.

Q. Did you bring -- in this electronic age, did you bring a printout of all of your notes of treatment that are contained within your file?

A. Yes, I did.

Q. And we have that marked as Plaintiff's Exhibit 26 for identification.

Is that a complete set of your office notes both from when you were at University Orthopedics in 2009 and your current practice for all of the treatment that you have of Mr. Brian Verdon?

A. Yes.

MR. McCRORIE: Your Honor, subject to any redaction, I would put his file into evidence.

MR. GANNON: Into evidence, Your Honor?

MR. McCRORIE: Into evidence.

THE COURT: This is his chart?

MR. McCRORIE: This is his office chart.

MR. GANNON: Okay, Your Honor.

THE COURT: Okay.

MR. GANNON: No objection.

THE COURT: That will be 26 in evidence.

(Plaintiff's Exhibit 26 was marked and received into evidence.)

COURT OFFICER: Plaintiff's 26 in evidence, so marked.

MR. McCRORIE: Thank you.

Q. Dr. Merola, now that Plaintiff's Exhibit 26 is in evidence, you're allowed to actually read from it if we go to a certain note of the day instead of having you look at it and look up.

Did you and I meet within the last few weeks in anticipation of your testimony on the Brian Verdon case once we knew a trial date was being set?

A. Yes.

Q. At that time, did you select certain views at our request of course that we were going to enlarge for you of the MRI's and x-rays of Mr. Verdon's treatment to illustrate and demonstrate Mr. Verdon's injuries and condition to the jury?

A. Yes.

Q. And you've seen those since then and compared them to the originals?

A. Yes.

Q. And did you also for the preparation of medical illustrations in order to teach the jury both the anatomy and mechanism of Mr. Verdon's injuries over the time period?

A. Yes.

Q. So if you could tell the jury and maybe go to the first note of when you first treated Mr. Verdon, could you please tell the jury when Mr. Verdon became a patient of yours for the first time?

A. So my first visit with Bernard was in November, November 9th of 2009.

Q. And is it safe to say that Mr. Verdon is not the first construction worker you've ever seen?

A. Correct.

Q. Because you accept these work accident cases.

A. Yes.

Q. Have you, in fact, seen other carpenters in the past --

A. Yes.

Q. -- before him? Prior to coming here today and as part of your treatment of Mr. Verdon, did you, in fact, review any of the MRI's and x-rays that were taken to date both whether you

requested them or another doctor requested them?

A. Yes.

Q. And did you, in fact, review the Bellevue Hospital record. It's in evidence but did you review the Bellevue Hospital records, any x-ray on the CD other than the ones we blew up in evidence as Plaintiff's Exhibit 1 and 2 for Mr. Verdon's admission and two-week stay in Bellevue?

A. Yes.

Q. Can you please tell the jury on November 9, 2009, because at the top of the letterhead says that was at University Orthopedics?

A. Yes.

Q. Would you please tell the jury, being the first doctor testifying, what is a history when you're talking about a medical office visit. First just what it means?

A. So a history is when a patient comes into an office and the doctor is going to see them the history is that portion of what we call the examination you encounter with that patient where you get an idea for why they're there and what happened to them and what their complaints symptoms are.

Q. And can you relay to the jury before getting into what's known as a physical examination and your findings what the history was as relayed to you and as you gathered on November 9, 2009?

A. So he presented to the office with the history of

having had a fall from a height which required an emergent admission to Bellevue Hospital whereby he had undergone fixation of a spinal fracture, he had been in the hospital subsequently discharged and presented to the office for me to evaluate because of the spinal injury to take a look at his neck and his back.

Q. And regarding the word "fixation," we're going to show the jury later but you're going to use these term, can you tell them what fixation means regarding this?

A. So, in general, when we talk about fixation of a spinal injury, what we're talking about is the insertion of metallic screws and rods in order to immobilize the area of injury and to prevent it from continuing to cause damage and to stabilize the spine in order to prevent it from continuing to cause damage in an area of injury. When we talk about fixation, we talk about actually fixing something in place in order to prevent it from continuing to cause a problem.

Q. Was Mr. Verdon alone as you indicated in your notes?

A. No. Actually he had -- when he came into the office, he came in with family, yes.

Q. And in addition as part of the history, were there any other parts of his body? Would you just tell them all of the things that were being complained about on November 9, 2009?

A. Sure. He had come in with back history, fall from a height, fracture. Admission: Operative intervention to the

spine. His complaints and/or his symptoms that he presented were specifically have him come in with complaints of severe pain in his neck. He had symptoms of upper extremity, that is, his arm and hand, the sensation of pins, needles, numbness and tingling in the hands accompanied by neck pain, low back pain with a sensation of same type of thing pins, needles, numbness and tingling in the lower extremities that is the legs and feet as well. He had come in utilizing a brace, a special kind of a brace called TLSO. It's just a fancy name for a big brace that goes from your upper back down into your lower back and your pelvic area and he was utilizing and requiring the cane when he came in as well.

Q. Just because we're going to be going into it slowly and then when we do the anatomy but TL is thoracic and lumbar?

A. Yes.

Q. Can you tell the jury what these words -- what cervical, thoracic and lumbar mean?

A. Sure. When you're referring to the neck and the back, it's broken into three sections. Your neck is known as the cervical spine. So that's anything that has the letter C in front of it it means cervical or your neck. The mid portion of your back is the thoracic spine. So anything that has the letter T in front of it would be thoracic and the lower portion of your spine is called the lumbar spine. Anything with a L would be lumbar that attaches to an area called the sacrum which

is a portion of your pelvis where your hips are. Anything with a S in it would be sacrum. When we talk about the spine, we talk about these separate pieces, the cervical which is the neck, thoracic which is the mid back and the lumbar which is the lower back.

Q. And at least in your first visit when it was relayed to you in your notes, as you just told the jury, I'll read: "Bilateral upper extremity pins, needles, numbness, tingling and severe back with bilateral extremity pins, needles, numbness and tingling." As a spinal surgeon, what does that indicate to you if anything?

A. So because the spine, your neck and your back contain nerves that go into your arms and your legs, one of the symptoms that we look for is we try to see whether or not any of those nerves may be affected by your neck or your back. Numbness and tingling or pins and needles sensation oftentimes is the prelude to a nerve problem or can tip you off to the fact that there's a problem with the nerves in your arms or legs.

Q. And we're not going to do this for every note but we have to get a lot of this out of the way. It's indicated that diagnostic studies were brought to you. If you can tell the jury, just to make this go quicker, what diagnostic studies are and then if you can define for them x-ray, MRI and CT scans?

A. Sure. So on this first visit, the diagnostic studies that he had, the testing that he had done was testing that had

been done at Bellevue and that had included some x-rays and CT scans.

X-rays are pictures of your body whereby radiation is shined through your body and then as that radiation shines its way through your body, there's a film that absorbs that radiation and an x-ray is really like a very very bright light and if you take a picture of anything, you're capturing light images on film. X-rays are capturing x-ray images on film with your body. It's very good for looking at bones and joints.

CAT scans are high quality x-rays which are multiple x-rays taken of a body part at multiple different angles that are then reassembled through the use of a computer to give you an even more specific image of a body part and CAT scans could be used for bones and joints and to some extent soft tissues as well. It's another way of imagining or looking inside your body without actually having to open it up.

An MRI is yet another way of looking inside your body. MRI's, on the other hand, instead of using x-ray technology, MRI's use a magnet. That magnet then basically magnifies your body that then generates an image that a computer can assemble into a picture of the inside of your body. So these are all ways of indirectly getting a look inside your body to see what the anatomy looks like of any particular body part that you're interested in looking at.

Q. I'd like you, if you can please, tell the jury what

these words mean medically "diagnosis", "prognosis"?

A. So diagnosis is a medical opinion of what the problem is. You can have strep throat. That's a diagnosis for the throat infection from strep. You could have spine fracture. That's the diagnosis of a fracture, right? It means that's what the problem is. A prognosis is a way we use medical prediction or medical predictability to look into the future. For example, the prognosis from a strep throat that you treat with antibiotics is good. The prognosis for a strep throat that you don't treat with antibiotics is bad and the same holds true for any diagnosis that we have. You can come up with a medical best guess, medical idea of what the future can hold based on what a diagnosis is and what's happening to the person's body.

Q. Just because your notes will be in evidence. In your notes, there's a follow up or an evaluation, a physical examination which we'll get to and you have something called impression and plan. What does that mean in terms of your notes in medical?

A. So an impression and a plan section on your note are that area at the end of your encounter with the patient where you come up with this is what I think is wrong, a diagnosis, and this is what I think we should do about it at this point in time, these are some options that are available to us.

Q. And in going back to the note November 9, 2009, did you take, and it's noted so I'm asking a question that the

answer is there, did you ask whether or not there was any past medical history to the neck or back with regard to Mr. Verdon or any of the injuries he's complained to you about?

A. Yes.

Q. Why is that important as a physician when you first see someone?

A. So in terms of what I'm going to do for a patient now and what's wrong with them, if, for example, someone says you know, I previously had surgery to my neck or my back, that would be important for me to know because then what I'm going to prognosticate for them as well is going to be in part dependent on that past history that they had. So if there was a past history of a fracture or problem with the neck or back that required let's say an injection or a surgery, that would impact one of the ways that you might treat that patient or one of the offerings that you may give them for future treatment.

Q. Before we get into -- well, what was the answer to whether or not there was any medical history regarding the neck, back or any of the injuries he's complained of?

A. There was nothing in the past medical or surgical history that was significant for the neck or back at all.

Q. Before we get into the physical examination, can you define these words for the jury in terms of medical evaluation "subjective" and "objective"?

A. So the term subjective is what the patient offers you

in terms of a complaint or a symptom so it comes from the patient. The patient says I have pain in my knee or I have pain in my back, that's a subjective complaint. The purpose of the physical examination is to then objectively look at that symptom and an objective test is a test that is not under the patient's control. It's something that you can reproduce and test in a way that gives you an idea of what's happening to the body by actually feeling, touching and testing the body to get feedback from a person's own body and their own anatomy.

Q. If you could just make it simple. If someone tells you they're in pain, that is what?

A. That's subjective.

Q. If you see something on an x-ray that is here and it's there and you could point to it, what is that?

A. That's objective.

Q. If you could just -- we're not going to do this for every note but this is the first note. Can you please go through the physical examination that you did on Mr. Verdon November 9, 2009. And any time you get to a word you think the jury may not know, if you could define it and if you could tell the jury if the findings you had were subjective or objective?

A. Sure. So I was able to communicate with Bernard and so he was alert and oriented which means he was a good historian. He was communicative and we could interact so that I could get a good physical exam.

Q. What is times four mean?

A. Person, place, time and situation. So those are the four things that you would want a patient to be able to have in their faculties so that you could do a good history, an exam on them in order to have good objective data from your testing.

Q. You can continue going through the physical examination and all the medical significance?

A. Sure. One of the first things when you do a physical exam there's an observation of the patient so you watch the way the patient walks. And in watching them walk, what we notice for Bernard was that he had what's called an antalgic gait pattern and a kyphotic gait.

Now, antalgic means a limping. It's a fancy way of saying limping. And when you limp, you're basically spending less time on one leg than another leg. That's what causes a limping pattern. Kyphotic pattern means bent forward or stoop forward and that is a combination of a kyphotic pattern which means stoop forward and a limp is a kyphotic and antalgic gait. So that's the way he presented with in terms of the way he was ambulating. He was also using a cane when he was walking. So there was palpable spasm and tenderness.

Q. Was he able to get up and down off the examining table?

A. No. He required assistance getting on the exam table.

Q. Continue please.

A. He had palpable spasm and that spasm is if you've ever had a charlie horse in your leg, that's an involuntary contraction of a muscle. It's painful and it's hard. If you feel it, it feels like a rock in your muscle. And when you palpate spasm, you can feel the muscle being very hard. And so when you palpate spasm, you know that that muscle is having a problem. He had spasm which was palpable.

Q. Objective?

A. Correct, yes. Because it's palpable, it's not under voluntary control so its objective and that was noted in his back and his neck. In fact, on that first day, I couldn't actually measure a range of motion for his spine because it was too painful in order to actually get any sufficient readings or recordings.

Q. And in November of 2009, you right severe pain. Is that something he's telling you, something you're determining or something else?

A. When it's a complaint from the patient, I'm in severe pain, it's subjective. When I combine it with the spasm, it becomes more of a objective finding.

Q. And what is it here because you wrote severe spasm -- severe pain, spasm, tenderness?

A. My objective view of his overall appearance from observing him.

Q. Okay. If you could continue talking about the difficulty measuring the range of motion?

A. Right. So I basically couldn't range his spine because so doing just reproduced so much spasm that I couldn't get any good range of motion measurements taken. He did have what's known as a Spinal Phalens Maneuver. That's a test where you actually bend the patient backwards.

Q. Just for the court reporter, it's P-h-a-l-e-n-s. Thank you, Your Honor.

Continue, Doctor.

A. So you physically take a patient in their upright posture and then you bend them backwards and in so doing you reproduce symptoms and palpable spasm. That is a test that tests the nerves that go into the lower legs and so that test was positive which means that bending backwards was not tolerated well and reproduced pain into the legs.

Q. And did it also reproduce spasms that you just discussed?

A. Yes, correct, yes.

Q. What does that indicate or -- withdrawn.

Is that of any medical significance to you in evaluating a spine issue?

A. Yes. When evaluating a spine patient, it's a what we call a provocative objective test to determine nerve function and nerve root compression.

Q. Continue again please with the physical examination.

A. We test reflexes. And so we're testing the reflexes in the muscles of your arms, hands and your legs and your feet. On this visit, the biceps reflexes, which are reflexes in the upper arm, were absent.

Q. Meaning what, if any, significance?

A. A reflex normally occurs when a nerve is able to move a muscle after you stretch the tendon of that muscle. So absent reflex means a dysfunction in that nerve, a nerve function. In other words, the wiring to that muscle is not working properly if you cannot elicit a response.

Q. Continue, Doctor.

A. Same holds true for the lower extremities or the legs and that was the quadriceps or the big reflexes in your thighs and on the backs of your legs, the Achilles tendon regions and those reflexes were absent as well.

Muscle weakness which you test by comparing two things. One you compare one leg to the other and when you're testing specific muscles, you test one muscle as compared to the other muscles in the body. So when I tested the muscles of the legs on Bernard, he had hip flexion weakness which I graded as 3-4 over 5.

Muscle grading goes from zero, which means no muscle contraction at all, nothing at all zero, 5 which means good, solid, strong muscle contraction. Grade 3 is right in the

middle and grade three is generally a muscle that would make an arm or a leg move against gravity. So if you can lift your arm like that, that's a 3. If you can resist me pulling on it, that's a 5.

Hip flexors are the big muscles that make your hips do this from your knees to chest and those muscle groups were weak. They were somewhere between three and a four. They were against gravity and against a little bit of resistance but not a lot of resistance. So that's why I measured him at three/four on hip flexors.

And in his arms, I noted a C5 root and a 6 root that's elbow flexion where I graded him as being somewhat weak in elbow flexion in the arms.

Q. What are myotomes just because it's in there?

A. A myotome is the muscle that's innervated by a nerve. So when a nerve goes into a specific muscle, it's called a myotome and it's a C5. For example, those are the muscles that are innervated by the fifth cervical root and those are generally the muscles in your upper arm, in your shoulder area and your biceps.

Q. Only because with later witnesses it might come up. Innervated, can you just tell us what that means?

A. Innervated means having a nerve go into a muscle. So nerves normally go into muscles. Muscles are normally innervated by your nerves. They're wired by your nerves and

innervated just means wired to a certain extent.

Q. I'm going to finish with this note. And with the court's permission I'm going to have you do a little something with the anatomy and some of the initial x-rays.

When you first saw Mr. Verdon, did you have knowledge that he was actively post-release from the hospital for at least the last month or so before he saw you in physical therapy in a facility in New Jersey?

A. Yes.

Q. Can you just tell the jury the purpose of physical therapy at least regarding a spine injury? What physical therapy -- what the purpose is as a doctor? Why do doctors prescribe it?

A. So after a spinal injury and a spinal surgery, physical therapy starts when you're in the hospital and that's acute or right after surgery, physical therapy. Generally that kind of physical therapy is to get you used to being able to move again.

When you have to take apart the muscles around the back and then put them back together again, those muscles don't function properly until they're healed. So physical therapy starts by teaching you ways to move as best you can without using or aggravating those muscles.

Q. Continue. I'm sorry.

A. That's the first portion of physical therapy. As

physical therapy progresses after surgery, you start to develop your strength and your coordination. So they start to focus more on strength and coordination now as the muscle is starting to heal and they also start to do some things called modalities which is a way of decreasing pain and inflammation in muscles to give them a better chance to heal as well. So those are the types of physical therapy that are first started after surgery, up and mobilized, decrease in pain as best as possible and then trying to improve function as much as you can while the muscles are healing.

Q. And in therapy or in medicine when a record says someone has plateaued or reached maximum medical improvement, what does that mean? Does that mean they're cured or does that mean something else?

A. So when you've plateaued or when you've reached the maximum, what we would call maximum medical improvement from that therapy, it means that, for example, if you're working on strength, it means this is as strong as you're going to get. If you're working on decreasing pain and symptoms, it means this is as good as it's going to get. So when you've reached a plateau or developed your maximum medical improvement, basically you're at a stage at which this is the best we can do. We don't feel as though we're going to be able to improve beyond this particular limit.

Q. And prior to coming here, did you review or at least

have you been shown the physical therapy records from the release in August of 2009 through March of 2011?

A. Yes.

Q. And those terms that you talked about "plateaued" and "maximum medical improvement" are those terms that are used within the work accident related system to seek authorization or to deny authorization from the entity that pays for the work accident related treatment?

A. It's part of the terminology that's utilized in the system, yes.

Q. Meaning reached maximum medical improvement?

A. Yes.

Q. Can you tell the jury what appendicular injury means and as it relates to your review of records and the first visit with Mr. Verdon?

A. So appendicular means arms and legs. Central means head, neck and back and appendicular means arms and legs.

Q. And so going down to the review of records. What, if any, recommendations on the first visit did you make or referrals, I'll call it, for any appendicular injuries to Mr. Verdon and what was the doctor's name?

A. So because of an injury to the arm, I recommended that Bernard see one of the orthopedics that does arms and legs and I recommended him to Dr. Steven Touliopoulos.

Q. When you say "arm," does that include shoulder?

A. Yes.

Q. Did Mr. Verdon in your initial assessment, even though you do the spine, injure his right shoulder as well?

A. Yes.

Q. And in addition whether or not when you examined Mr. Verdon, even though he told you his head and extremities hurt him, you did not examine his head; is that correct?

A. Other than the patient and the affect to make sure that he was, you know, able to undergo an exam, that's correct.

Q. And each visit you saw Mr. Verdon, did you, in fact, concentrate on the spine and the spinal column?

A. Yes.

Q. When you say you were sending him to Dr. Touliopoulos, at that time, Dr. Touliopoulos was in the same physical office. Is that correct?

A. Yes.

Q. Okay. What was the plan and then we're going to be done with the first note. We are not doing this again for every note. I wanted to set the stage for how your notes go.

A. So the plan was at that point in time when I saw him with -- he had surgical intervention or fixation of his spinal fractures, he had signs and symptoms of what's known as a cervical radiculopathy or problem with the nerves coming out of your neck and a lumbar radiculopathy or a problem with the nerves coming out of your legs. I wanted to update his

imagining studies to get a better look at those nerves and to get a better look at the neck and the back so I wanted MRI's of his neck and his back.

(Continued on the next page ...)

Q So. Okay. Can you just go back to that word, tell the Jury a little bit more before I have you come down and do some anatomy and go over some of the initial diagnostic findings. Radiculopathy? You said a little bit something about it. Can you give more detail about what that means and as it relates to the neck and back and why that would cause you to seek MRIs?

A So, radiculopathy means a problem with the nerves. The nerves, any time you see the word, any word that has opathy in it, it means problem with, and it's also a problem with the word in front of the word opathy. Radic is really nerve root and the when the nerves come out of your spine, they come in little things that look like roots, so we call them nerve roots. A radic is the term for root and opathy means problem with, so, radiculopathy means problem with nerve roots.

Q And, and in the spine, what causes or can cause problems with the nerve roots?

A So, in the spine, because the nerve roots are in a closed container, your spinal canal is a closed container that's made up of bone and joints and disks, and your nerves sit inside that closed container, if there is pressure or impingement on a nerve or nerve root, that pressure or impingement will cause a problem with the nerve or the root.

MR. MCCRORIE: Your Honor, with your permission, I was ask going to ask the Doctor to step down and go over some anatomy.

THE COURT: Sure.

Q If you could step down, Doctor.

(Whereupon, the witness exits the stand)

Q I'm going to put up on the easel Plaintiff's 16 in evidence, which is an illustration of the spine. I'll tell you, in evidence is Plaintiff's 17 as well. And as you go through the anatomy of the spine, if you could also, because the Jury is going to see MRIs, can you tell them what the sagittal view is, what an axial view is and anything else you would like them to know about the anatomy of the spine

(Whereupon, the Witness displays the model to the Jury)

A So, this is a plastic model of the human spine. At the top is the base of the skull, and at the bottom is the pelvis where your hips attach. And when you are looking at the spine from the side view, sagittal is side view, they both start with S, so it's easy to remember sagittal is side view. When you are looking at the spine from the side view, it looks like a gentle S, should look like a gentle S, and that's what we see on the left side of the illustration.

Q Forgive me for interrupting, is that called a lordosis?

A Actually, there are different portions of the spine, they have different positions in them. So, the first thing that you notice is that your neck has a gentle backwards slope. Right. Your upper back has a gentle forward slope to it and

your lower back has another gentle backwards slope to it. So, when you are looking at this thing on the side and it looks like this kind of gentle S, it's balanced. There is a certain amount of balance there, because one of the major things that your spine has to do, it has to balance your head over your pelvis. That's how we can walk upright and that's what distinguishes us from all of the other creatures on the planet. Right, because we can walk upright and our heads are balanced over our pelvis and that's a really good thing for us, and your spine does that.

What happens in your cervical spine is called cervical lordosis. Lordosis is that gentle backward slope or bend. A kyphosis is that gentle, forward slope or bend. And in the lumbar spine, what do we notice, we notice this backward bend again, that's lordosis. So, it is normal for your spine to have a cervical lordosis, a gentle thoracic kyphosis and a gentle lumbar lordosis. And that's what gives you good balance from a side view.

The front to back view, which is called a coronal view, or an AP view, you should be straight up and down, you shouldn't be tilted to one side or the other side, you should be straight up and down. And if you are straight up and down, your head is balanced above your pelvis. This guy is a little crooked but that's about right.

MR. MCCRORIE: I bent him on the opening, sorry.

A Right. When you are looking down the spinal canal as

though you were standing on top of someone's head and looking into their canal, that's called an axial view because it goes across the spine. On the right side of the illustration, you are looking at an axial view of the neck or the cervical spine on top, and an axial view of the lumbar spine on the bottom. And that shows you the area where the disks are, and the canal, where the spinal cord and the nerves are. And it gives you an idea of how big the canal is and where the nerves are and what the disks are doing to the nerves, et.cetera. So, we have all three images or views here.

The first sagittal or side view, the second an AP view front to back, and the third an axial view or a cross section. We have the gentle slope of an S with your cervical lordosis, thoracic kyphosis and lumbar lordosis.

Q If, if you can too, Doctor, can you, it's on the board, but can you tell them, you said if anything with a C in front of it, when can you tell them when it says something like a C3, C4, how we determine what disks and what disk level there is, how many vertebrae there are and how they are broken up, and if you could please tell them the difference between the full spinal cord and the cauda equina that starts at the L1 and what significance the cauda equina as opposed to a full spinal cord is?

A So, in your neck, there are seven cervical vertebrae. And they are each numbered 1 through 7. Believe it or not, a

giraffe has seven cervical vertebrae. That always amazes me, you have seven. So, if anybody ever asks you, how many a giraffe has, exactly the same number you have. Seven cervical vertebrae. Each vertebra having its own specific number, 1 through 7. So, the disks that are in between the vertebrae are numbered according to the vertebrae that they are in between. If you think about it as a cream cookie, the cookie on top and the cookie on the bottom for example the 6 and 7. The cream in the middle is the disk. That's the 6, 7, the disk in between Number 6 and in between Number 7. That's important because the nerves that comes out of that area takes that name as well. It takes that name of the disk that it's adjacent to. And in this case, in the cervical spine, 6, 7 is the seventh nerve.

In the thoracic region, there are twelve vertebrae, so they are numbered T-1 to T-12. Same thing, the disks take the name in between the bones that they are at. And in the lumbar spine, there are five lumbar vertebrae, the same thing with the disks, they take the names of the bones that they are in between.

Your brain throws off a spinal cord. Your spinal cord is actually, technically a part of your brain. It's central nervous system. The cord contains all of the things that are necessary for your body to function, including the nerves that go into the arms and your legs. The spinal cord itself tapers off and terminates in the neighborhood of about L1 to L2. After

it finishes, after your spinal cord ends there, you still have these nerves that are left over that have to go into your legs. Those nerves travel through the remaining portion of your spinal canal and head to your legs from there. Because the collection of those nerves to ancient anatomists looks like a horse's tail when you dissect them, they called it the cauda equina or the tail of the horse. It's the collection of nerves in the lower part of your lumbar spine that travel into your legs, below the area where your spinal cord terminates. And your spinal cord terminates about L1, L2.

Q Can you talk to the Jury using the model?

A Sure.

Q And the exiting nerve roots and what happens if the exiting nerve root is compromised either through a fracture, retrolisthesis or herniated disk, and if you could also please tell them what a dermatomal pattern is and what that means?

A So, if we take for example, let's take one of the nerves in your lower back. Right. So we'll take the nerve in between L3 and L4. So, this nerve coming out of this opening is the L3 nerve root. The L3 nerve root travels through this opening in your spinal column, called a neuro foramen; basically means just a nerve opening. And it goes down into your leg, in a specific region of your leg which is in the thigh area. It's the upper portion of the thigh and it runs into your thigh, not unlike a stripe runs down your pants. The area that that nerve

is responsible for feeling sensation on your skin is called a dermatome. Because the area of sensation to the skin, it innervates or it wires a portion of your big knee extensor muscle or your quad muscle and that muscle, that portion of the muscle that's innervated by L3 is called a myotome. So, dermatome is the skin area that the nerve covers, myotome is the muscle area that the nerve covers.

Q And isn't it in fact these exiting nerve roots, are they in fact connected to the actual spinal cord which is connected to the brain?

A They are, so if you think about your brain as being, you know the controlling switchboard computer, the spinal cord could be thought of as the, this large cable. The nerve roots are smaller cables connected to your brain through the spinal cord.

Q And in the model that you are holding, Plaintiff's 17, the nerve roots end, but if that were a full model, a real person, would those nerve roots continue to both the arms and the legs exiting from the exiting nerve roots, all the way down to the end of your fingers and the end of your toes?

A Correct, those nerves, as we said, travel all the way down into your arms and hands along their specific distribution through skin and muscle in whatever portion of your arm and your hand that you happen to be talking about.

Q And when you say radiculopathy, is that what

radiculopathy is, a condition where those nerve roots are affected?

A Yes.

Q And can you just tell the Jury specifically if someone feels numbness in their hands only, does that indicate an issue with the neck or the back and going from their neck through their fingers?

A So, if a person has radiating symptoms that are coming down and descending from your neck and down into your arm and your hand, that's along the distribution of a nerve root.

Q Coming from the neck if it's in the hands?

A Correct.

Q And how about if they feel it in their thighs and toes, numbness and tingling?

A That would be along the distribution of the lumbar nerve roots or coming from the lower back area, along the segments of roots that are coming down into the legs and feet.

Q Before we get into the specific X-rays that you interpreted, can you please tell the Jury the makeup of an intervertebral disk, describing the annulus fibrosus, the nucleus pulposus and the difference between what we call a bulge or a herniation and how that works?

A So, in between the bones are structures called disks. The disks are made up of cartilage and it's really two distinct kinds of cartilage. The disk, if you think about it, you can

kind of think about it as a jelly donut, so there is this outer pastry like covering, and in the disk, it's a very hard resilient fibrous covering. It's called the annulus, which means the ring. And in this, on this illustration, it's illustrated by the color pink. That annulus or ring holds on the inside a more jelly-like material, which is called the nucleus pulposus. And the nucleus pulposus is much more, it literally is very much like jelly. It doesn't have any specific structure to it, if you are just looking at it with your eye and it's very squishy. And that's held inside the disk by this outer more fibrous covering of the annulus.

Q Going to hand you, I'm going to leave it up by you, in case you want to mark anything that you are shown today, a red marker. If you are going to mark anything, please indicate that for the record. I want to give you enlargements of Plaintiff's 2, which is a disk from Bellevue Hospital. You've already told the Jury you interpreted the films from Bellevue Hospital. So, you are given Plaintiff's 2A, B, and C, if you could please take them one at a time starting with Plaintiff's 2A and show the Jury what if any pathology is on those X-rays, CT scans, I'm sorry, and tell them how we know it's a CT scan of Bernard Verdon?

(Whereupon that exhibit is displayed on the easel)

A Sure. We know it's from, it's labeled for us, so that

makes it easy, tells us it's from Bellevue Hospital and it tells us that it's Bernard Verdon and it gives us the date, August 11, 2009. This is a reconstruction or a put together of many multiple X-rays, which is our CT scan diagnostic image. We're looking at this view, we're looking at a front to back view. And so, when we first look at it, we start to look for what's going on and we see these things that look like squares, lining pretty much straight up and down. And then what we do, we look a little further at the squares and we look to see what the structure of the squares is like and we can see that over here we have a very nice square, where all of the edges are clean and clear.

MR. MCCRORIE: Just indicating, he's outlining it in red for the record.

A When we go to the vertebral body below this nice clean, clear square, we start to see indistinct edges. What we start to see here are fragments of bone. We see that there is now a fracture of the bone.

Q What vertebrae number is that?

A This is vertebra number T-12.

Q If we could just slide this away, just show the Jury where the T-12 is on the illustration right there?

A I'm going to put a check mark there next. This is T-12, it's in the lower portion of the thoracic spine. What we're looking at here is the front to back view, so, on the

front to back view projection, we see a nice clean square above.

Q The AP view, Doctor?

A Correct. We see a clean square below the fracture and we see a very jagged edge, multi-fragmented blown apart T-12 vertebral body and it looks as though it's been basically crushed. And so, we know that it's not like the others, and that's abnormal.

Q What in fact is in evidence and it was diagnosed as what's known as a T-12 burst fracture. Can you tell the Jury what that means, although it might be self-explanatory, when you are talking about fractures to the vertebrae?

A Sure. So, when you talk about a fracture, there are different descriptive terms. A burst fracture, specifically refers to a fracture whereby the entire vertebral body has been blown apart. It's significant because it means that there is what we call gross instability. So, from a structural point of view, if the spine is a column, you can think about the spine as this column or this pillar that's holding your head above your pelvis, if that column is broken along all portions of the column, it's no longer stable. It can no longer make certain that you can stand upright, without having a problem. So, a burst fracture is a term that refers to all portions of, all portions of the vertebral body being fractured to the point where it is an unstable injury.

Q And can you tell the Jury going up to T 10, if there is

any findings on T-10?

A So, if we go back to the vertebral body that is nicely outlined with clean clear margins, and we go above that vertebral body, we now see another vertebral body, where we have jagged edges. And we have a collapse of the top portion of the vertebral body, and a fracture through a portion of the top third of the vertebral body.

Q Is that called a wedge or compression fracture?

A Yes. Yes. Because it's resulting in the vertebral body instead of being a square, now it's turned itself into a wedge from having been compressed or crushed.

Q Before we go to the next view, as a board certified orthopedic reconstructive surgeon, are you qualified to read CT scans, X-rays, MRIs?

A Yes.

Q And do you do that every day?

A Yes.

Q Do you consult radiologists or do you just look at them yourself and give your own reading?

A I read all my own films for all my patients.

Q And, in fact, in any event, there are always radiological reports, but when you do surgeries, you don't consult a radiologist, you look at the film yourself?

A I have a film in the operating room with me, so I use the film that is pre-op, along with films I take intra-

operative, and I compare that and do that all on my own.

Q Do you bring a radiologist into the operating room with you?

A No.

Q Ever?

A No.

Q Can you please go to 2B and 2C, and tell the Jury again the different type of view and what is indicated, it's obviously, the same date, August 11th?

A This is the side view, this is a CAT scan now of the side view.

(Whereupon, that exhibit was displayed on the easel)

A And at the top portion of this scan, is the T-12 vertebral body, and we can see that this vertebral body is also crushed and fragmented when looking at it from the side.

Q And did you put T-12 next to that?

A Yes.

Q You did. I just want you to go now to, is there anything else you want to state about this one?

A Yeah. One thing. One more thing on this view. This view is important because when you combine the front to back view or the AP view with the side view, where this is where you get the diagnosis where it's actually a burst fracture, because you notice that the lamina, which is the back portion of the

vertebral body, which is where the joints are also fractured. So, I'm going to put an arrow where there is a lamina fracture at T-12. So, you know that, the spinal column and if you think about the spines as having a front, a middle and a back side, you have fracture through all three portions of the column, so it's inherently an unstable injury.

Q After lunch, I'm going to have you go through the surgery. But I want you to put up 13B, a current X-ray taken in February of 2014. And we know that appears, 2/12/14, is that correct?

A Yes.

Q Is this in fact an X-ray you ordered?

A Yes.

Q And is this an X-ray of Bernard Verdon's back?

A Yes.

Q Can you tell the Jury what they are looking at in this exhibit, Plaintiff's 13B?

A This is a side view of the thoracic spine, which is the upper back and where it attaches to the lower lumbar area. And, what you can see here on the left side of the X-ray, you can see rods, which are connected to screws, which are within the vertebral bodies of the thoracic spine. On the right side of this X-ray, you can see the, you can see the lungs, you can see some gas in the intestine. You see the sternum or the rib cage here. This is, this is an interesting X-ray, because what this

X-ray is showing us is the area where the T-12 fracture is where you can see it, it appears as a compressed vertebral body on this image, without screws in it. No screws were inserted into the T-12 vertebral body because the body itself was incompetent to hold screws because there really wasn't anything there. So, that's the T-12 segment. The T-12 segment is compressed, collapsed and wedged. Compressed, collapsed and wedged. T-10 still had some wedging in it, but it was still at least accept a screw. You can see that the thoracic spine, if you think about what we spoke about earlier, which was the gentle S shape of a spine no longer has a gentle S shape to it. In fact, the thoracic spine has more of a C shape to it. And that C shape is something that we call a post traumatic kyphosis, because it is an exaggeration of the thoracic kyphosis. It's extra thoracic kyphosis, which throws off the rest of your balance from the side view.

(Whereupon, the next exhibit was displayed on the easel)

Q And I'm just going to show you 13A taken on the same day where it's taken on the AP view, where we don't see the kyphosis. Can you talk to the Jury and tell them what a scoliosis viewing. Does this mean he has scoliosis, with respect to 13B?

A When you see an X-ray and you know that you have a condition of a post traumatic deformity, which this is. What

you want to do, you want to understand the extent of that deformity and what it's doing to the rest of the spine. We order an X-ray series called a scoliosis study. It's the name of the film study, because a scoliosis film is a film that goes from the base of the skull to the pelvis. So, that we can get an entire image of the spine. And it's taken at least in two views, one view is the front to back view which we see here and the other image is that side view, because we want to get an idea for what overall spinal balance looks like and compare it to what we know is normal spinal balance.

Q So, just so the kyphosis that we see in 13B doesn't disappear in 13A, it's just not seen because he's standing?

A Right. You are seeing this projection and it is front to back, so when you are looking at front to back, the curve disappears because there is no scoliosis here, there is no bending from one side to the other. But when you look at the side view, you get an appreciation for the kyphosis.

Q We'll do the last CT from the hospital, and with the Court's permission, we'll break for lunch. Plaintiff's 2C is the last view from Bellevue Hospital. You could explain to them what they see here and also tell them, after lunch, we're going do the MRIs, whether or not we see disks and ligaments and other materials in the film?

(Whereupon, the next exhibit is displayed on the easel)

A So, this is a post-operative CAT scan. This is the CAT scan after the surgery.

Q We know that's August 13th?

A We know it not only because of the date, because we know there are implants in there now, we're looking at the screws in there on the CAT scan, so it has to be after the surgery. And because it's a CAT scan, it's taken in slices or sections. So, you see, you don't see the rod, you see a black stripe over here, which is where the rod is, but you don't actually see the rod, because the CAT scan, this particular slice misses the rod. But you can see the screws, you can see the T-12 fracture, the fractured vertebral body, that's the body without the screws in it. I'll label it T-12. You can see T-10 up here, that does have one screw in it. You can see the facet fracture which is at T-10, that's the fracture of the joint between T-10 and 11. You can see that there is a fracture of the lamina and the joint behind T-12. I just circled that.

Q That would be where the white goes back and would be continued white, same above it?

A Correct. You could see that there is a little fragment or a spike of the upper portion of T-12 that's kind of tilted itself into the spinal canal of the T-12 area as well.

Q We're going to break after this. Which direction would the spinal cord be when you look at MRIs, or we're going to be able to see it or the cauda equina, still a full spinal cord at

T-12, correct?

A Right. So the spinal cord comes through the area where the screws are, down to right around here, L1, L2. It ends and then becomes a cauda equina. And so this area, the area of T-12 is right in the area of where the spinal cord itself terminates.

MR. MCCRORIE: With the Court's permission, it's a little before 1.

THE COURT: We're going to change topics now, we'll break here, and resume at 2 o'clock. Please be back at 2 o'clock and we will continue. Don't discuss the case.

(Whereupon, the sworn Jury exited the courtroom)

(Whereupon, a recess was taken in this matter,and after the recess, the following took place in open court, with the Court and all parties being present)

(Continued on next page)

A F T E R N O O N S E S S I O N

(Jury enters courtroom; the following occurred:)

THE COURT: Have a seat. Whenever you're ready.

MR. McCRORIE: With the court's permission, I would ask that Dr. Merola step down.

THE COURT: Go ahead.

MR. McCRORIE: If you could bring the red pen down, Doctor. I'm putting up for you to discuss with the jury Plaintiff's 19. This is for identification. I'll just show the court.

THE COURT: Okay.

Q. It's for identification and it's called a MetaVisual. Did you partake in telling us whether or not this was accurate or not?

A. Yes.

Q. And on this actual meta-visual different than the views the jury has seen, are there actual copies of the axial views and have you compared them to the original on the CD that Bellevue sent for both a sagittal and axial view from the spine from the CT scan from the date of the actual accident?

A. Yes.

Q. And do the medical illustrations fairly and accurately depict what is seen on the x-rays?

A. Yes.

MR. McCRORIE: Your Honor, at this point, I would move 19 into evidence.

MR. GANNON: No objection.

THE COURT: That will be 19 in evidence. We'll deem it for now.

Q. So, Doctor, if you could use 19 again because it's an illustration showing the jury what they see on the sides and if you're going to be referring to 19 or any of the other views but before them are 2C and 19. Please continue discussing the injuries Mr. Verdon sustained on the date of the accident.

A. So, the illustrations that we see in number 19 demonstrate the fracture of the T12 vertebral body, the first fracture where we could seem multiple fragments and also it shows that there's an injury across the entire column of the spine because of the fractures that are on the what's known as the posterior or the backside aspect of the spine where we could see spinous process fractures and we can see what are known as facet and lamina fractures which are those fractures in an area of the joints of the spine.

Q. I'm going to ask you what's sometimes, not to be a wise guy, could be a ridiculous question -- we need this for the record -- are such fractures that are depicted on Plaintiff's 19 and 2C and in the x-rays are, would you as a board certified spine surgeon, would you expect them to produce pain?

A. Yes.

Q. Severe pain?

A. Yes.

Q. Okay. Could you please show the jury where the spinous process is on the model that we have?

A. The spinal process are on the backside of the model. They are the piece of bone that sticks out from the spine and if you put your hand up against your spine, when you feel the bones in your back, you're actually feeling the tips of the spinous processes. So those are on the backside of your spine. And those spinous processes actually attach to a portion of bone which is called the lamina. The lamina is the roof of the vertebral canal where the nerves are and right next to where the lamina is in between the bones are the facet joints or the joints of the spine.

So when we're looking at the illustration, we're looking at the side view. Not only do we see the burst fracture but we see the fractures of the spinous processes. On the CAT scan number 19 those are the arrows and the arrows are also in the area where the facet joint fractures are and where the lamina fractures are.

Q. And you talked before about the spinal cord and how below L1 again this is the cauda equina underneath the solid spinal cord at T12; is that correct?

A. Yes.

Q. Is there a risk of paralysis if the T12 -- if the

spinal cord is compromised at T12?

MR. GANNON: Objection.

Q. Not in this case, in a case where can a person be paralyzed if the spinal cord is a compromised at T12?

MR. GANNON: Objection.

THE COURT: Sustained.

Q. Did Mr. Verdon ever inform you that the night before the surgery they put him into a straight jacket in Bellevue Hospital so as he wouldn't move at all until the surgery?

A. Yes.

Q. Can you tell the jury why a spinal surgeon would immobilize Mr. Verdon prior to doing a surgery at the T12 or burst fracture?

MR. GANNON: Objection.

THE COURT: Overruled.

A. So the reason for immobilizing the patient prior to surgery is the same reason that you're actually doing the operation itself and that is because this is an unstable fracture of the spine. What that means is that any force that's transferred to the spine as it is without fixation would cause the spine to move to the point where it could compromise the spinal cord and then lead to paralysis. The indication or the reason for the operation is to fix the spine and stabilize it so that that would prevent it from happening.

Q. I'm going to put over here on the edge of the table

Plaintiff's 1 which is the Bellevue hospital record. We pulled out the actual operative report. Just tell the jury did you do -- do you work at Bellevue?

A. No, I don't.

Q. And did you do this operation?

A. No.

Q. But have you reviewed the operative report?

A. Yes.

Q. And did you, in fact, render care to Mr. Verdon as your patient from November 2009 until today?

A. Yes.

Q. I'm going to put this one -- when I say "this one," I'll put 19 in evidence over here and I'm going to put up Plaintiff's 20 for identification.

THE COURT: Still 20 for ID?

MR. McCRORIE: I'm sorry for ID. I should have first showed you without the jury.

THE COURT: Go ahead.

Q. Did you, in fact, participate in the production of Plaintiff's 20 for identification, the illustration of the spine surgery that was performed?

A. Yes.

Q. And did you utilize the operative report of the spine surgeon?

A. Yes.

Q. Each time you do an operation on someone's spine, you're required to make a report of same?

A. Yes.

Q. And does Plaintiff's 20 for identification fairly and accurately depict everything that was performed on during the operation on Mr. Verdon's spine as listed in the hospital record and the operative report?

A. Yes.

Q. And is there also a sagittal view of the CT scan after the surgery showing -- I think that's the one that's up there -- 2C?

A. Yes.

MR. McCRORIE: Your Honor, at this point, I would move 20 for ID into evidence.

MR. GANNON: Objection.

THE COURT: Overruled.

Q. So it's deemed in evidence. We'll mark it a little later.

I'm going to put this up before you and -- I'm sorry. I won't do that next time.

So I'm going to hand you up a portion of the record of the operative report. Can you -- you don't have to read the report to the jury but can you, using the illustration, tell the jury, first of all, do you perform spinal fusions on people?

A. Yes.

Q. And you've already said you do a few hundred spine surgeries a year?

A. Yes.

Q. And do you perform multi-level fusions?

A. Yes.

Q. And this is what type of level? How many levels?

A. So this involves the T8 to L-3. Each segment is considered a level. So we have one, two, three, four, five, six, seven levels.

Q. And in the record, there's something called a consent for surgery where a person is told of the risk. Could you just tell the jury in addition to anesthesia, what would be the risks of doing the surgery such as the one that was performed on Mr. Verdon?

A. So the risks for this specific kind of an operation involve not only the risk of all surgeries which include a general anesthetic. This particular of any kind an operation carries with it a risk of blood loss because of the extent of the surgery itself, because you are involved in the upper portion of the entire, almost the entire thoracic spine. You need to immobilize all of these muscle so blood loss -- a blood transfusion is a risk of this surgery. The risk of infection is increased in surgeries that are multi-level with more implants and screws. So there's a risk of infection from the surgery. Because you are operating on the area of the spinal cord and you

are inserting screws into the vertebral bodies that are adjacent to the spinal cord, there's a risk of spinal cord damage or paralysis from the surgery. There is a risk of what's also known as hematoma or bleeding into the canal or cord which would cause the nerve root problem. There are the medical risks associated with the multi-level fusion which postoperatively include such things as a blood clot in your leg called venous thrombosis or an embolus of a clot into your lungs. You can have pneumonia and problems with your lungs in this particular kind of operation because you are operating on the thoracic spine.

Q. Before you continue with that, I want to ask you something called a plural effusion?

A. The thoracic spine is attached to your rib cage that directly overlies your thoracic cavity. So there's a risk for accumulation of blood and fluid inside your chest cavity along with postoperatively developing what's known as pneumonia or another condition called atelectasis which is a condition where your lungs don't completely deflate themselves. Those are the short-term or acute complications from this particular kind of an operation.

Long-term complications for this type of an operation involve what you would call hardware or implant complications whereby screws can crack or break or shift. And because of the fracture and the areas that are involved, the other issue to

address is what's known as posttraumatic psychosis and also known as subsequent adjacent segment we call disease where adjacent segment breakdown which is transfer to adjacent segment on top of and below the fused segment.

Q. Now, why does that occur or how does that occur, the adjacent segment breakdown?

A. So, there are a couple of mechanisms that are responsible for adjacent segment problems. One is the fact that the fracture itself has caused a kyphosis and damage to the column of the spine that supports the thoracic or the upper portion of the back. And so with an increase in kyphosis or curvature your alignment, your spinal balance, is thrown off so they're naturally compensating mechanisms to try to now compensate for that decreased or offset imbalance and that puts extra stress on the other levels of the spine.

The other issue is that there is now a very large, what's known as lever arm, sitting adjacent to other portions of your spine. A lever arm, if you think about a seesaw and there is a point where the seesaw moves up and down. That's called fulcrum. The further away a weight is from the fulcrum the easier it is to move the arm of that level. And what happens here is you can think of this as a large seesaw whereby disc T8 to L-3 segment are essentially one stiff rigid lever arm or segment and there are softer nonrigid segments below it and softer nonrigid segments above it so that bending action on

those softer nonrigid segments causes those segments to have extra pressure on them and to breakdown as well.

Q. I just want to -- at the beginning of the operative report on page 1, it's mostly the information that says that the 59-year-old man sustained a fall approximately 12 to 15 feet. It then says right after that he was neurologically in tact on admission to the emergency room.

Can you tell the jury what neurologically in tact means and if he was neurologically in tact, why in your opinion as a board certified spinal surgeon did they put him in a straight jacket?

A. So what that means is he was presented to the emergency room, he was taken to the emergency room and they did an examination of his neurological status that is the nerves going into his arms, hands, legs and feet it was grossly in tact which meant that he was able to move arms and hands and legs and feet which tells you that the spinal cord itself was functional and doing the job that it had to do.

When you have an unstable fracture condition such as this, if you don't immobilize that patient appropriately, they move while they're in the hospital before you have a chance to fix the spine. It is possible to cause spinal cord damage from motion in the hospital.

Q. And using that first paragraph when it says "a decision was made to do a posterior approach as opposed to an

anterior approach," can you tell the jury what that means and why you would go posterior as opposed to anterior. What posterior and anterior means?

A. Anterior when you're talking about the spine means through the chest. So an anterior approach, you open the chest and you approach the bone from front side. From the front side is everything that's in your either chest or abdomen.

A posterior approach is you get to the spine going through the backside which is where the muscles are in your back and with the spine, you have a choice about whether or not you come from the front side or you can come from the backside.

This procedure was done posteriorly for several reasons. Number one, the fracture itself did not contain a large fragment of bone that was inside the canal itself. In general, the removal of large bony fragments are best done from the front side because it's easier to get to when you go through the front because that's where the larger part of the body is.

The second reason that they approach this from the backside is that in addition to the fact that there was a burst fracture at T12 we also know that there was a superior endplate fracture or wedge compression fracture at T10.

So if you did this from the front side, what we do you would remove T12 and then you would put fixation between 11 and 1 basically put a big block of either bone or titanium in the front, lock it together. The problem is you also have a T10

area that's fractured and if you did that, the whole thing would fall apart. You would be left with another problem. So it was much safer, direct and more efficient to fix these multiple noncontiguous. That means not touching fractures through the backside.

Q. It's a big record but the operative report which says it was discussed with the patient and he wanted to proceed with the posterior, Mr. Verdon would have known and given these choices he would have known what was about to happen to him. It would be explained to him and, in fact, it was?

A. Yes.

Q. We see here you talked about bone graph and there's bone graph in the lateral gutters. We're going to get to the -- when you explain to the jury the surgery, I'd like you to please explain that. What is Fluoroscopy and how is that used in spinal surgery?

A. Fluoroscopy is large x-ray machine that you have in the operating room with you and it's an x-ray machine that actually is on this thing that looks like a big C?

THE COURT REPORTER: I'm sorry. That looks like a --

THE WITNESS: A large C. And we use it intraoperatively --

MR. McCRORIE: You know what? Your back is to the reporter. Speak a littler louder.

A. We use that to take x-rays of what we're doing during the operation so that we know what level we're at. So we're addressing the proper level that's fractured and also we do it in order to confirm the position of where we're placing our screws to make sure that we put our screws in the locations that they belong as well.

Q. In the operative report after a patient is opened up and it talks about epidural bleeding from underneath the alignment of the fracture. Tell the jury what epidural bleeding means and what it indicates?

A. An epidural space is inside the spinal canal in the area where the, in this case, where the spinal cord is.

Q. I'm just going to take the illustration and go here if you could just --

A. So if we're looking at this axial view of the spinal canal and we're looking at the epidural space, the dura covers the spinal cord and covers the nerves. The epidural space is the space outside the cover. That space is generally filled with a layer of fat and in that layer of fat, there are veins and arteries and those veins and arteries provide blood flow to the neurologic structures inside the canal. The epidural veins, because of the fracture, are cut and are damaged. So when you do a surgical approach and you're looking at the area where the fracture is, there's going to be bleeding coming from these veins because those veins are ripped and torn apart and they

bleed in the area where the fracture is.

Q. When someone gets -- we'll learn about it later and hopefully today but a epidural injection does it go actually the needle through the neck or back into the epidural space?

A. Correct. When we talk about giving the patient an epidural injection or if you had an epidural anesthetic or anesthesia, it's the location of the medication and the needle in that space along the outside covering of the dura, outside of the dura, inside of the spinal canal.

Q. Okay. And just to make it go quicker too, if you could explain to the jury what a Midas Rex drill is, how the hardware gets in. If you could focus on the actual placement of the rods and how they were bent into place where it says there kyphotic deformity?

A. A Midas Rex drill is on number 20. It's this black instrument where there's a burr on this instrument.

THE COURT REPORTER: I'm sorry. There's a what?

THE WITNESS: A burr.

A. And the drill it could either be electrical or gas powered and it's like a -- if you've ever seen a dremel that you use at home to like burr down like jewelry or wood, the burr rotates very fast and you can use that burr to cut foam. You can also use that burr to make openings for the area where you place your screws.

So the drill is utilized to do several things. It

makes an opening where you start your starting hole for screw placement and it also shaves away bone in areas where you're going to do the fusion process. Fusion process is the process of gluing bone together so that they become one large bone. The purpose of the screws and the rods is to hold everything together and to keep it available until the fusion takes or heals. So it's like an internal splint or an internal brace.

Q. I just want to read one line from the report in evidence and then explain to the jury why it would be bent. It reads "The patient's kyphotic deformity was corrected by compressing on the rod posteriorly and locking the rod in place and the final tighteners were placed on the set of screws within the pedicle screw head."

A. So when the patient is lying on the table and after you place screws into each vertebral body, you now take a rod and have to lay that rod into the screw head. The screw heads are designed to accept the rod that goes into the top of them. The rod is bent into a contour, you shape it in order to try to match the normal kyphosis of the thoracic. Spine and after you place the rod down into the screw heads, you then take a device that takes the screws and pushes them together so that you can tighten everything in and hold it together very still and stable so that it can now support all of those bones that you're trying to fuse.

Q. And on August 13th the day after -- the record is big

but reading from the August 13th C spine -- when they looked at the C spine and they saw a moderate right plural effusion. Can you tell the jury what that was meaning the day after surgery, a plural effusion?

A. So a plural effusion is a collection of fluid in the chest area and because this was an operation that was done in the thoracic spine that's connected to the chest, that plural effusion is something that you would anticipate seeing after this particular kind of a procedure.

Q. And the day after the surgery when they're at the T12, the CT scan saw secondary to minimal residual retropulsion. Can you tell the jury what retropulsion at that level and what the word means at the T12 level after that surgery?

A. Because the T12 vertebral body was fractured and because it was a burst fracture, it meant that it had lots of fragments of bone and retropulsion is a description of bone inside the spinal canal. So the CT scan showing that there was minimal retropulsion of bone inside the spinal canal meant that the intraoperative alignment procedure that they did was appropriate.

Q. I'm going to have you just stay up, if you don't mind, Doctor. You did look through the rest of the -- you've looked over the hospital record, correct?

A. Yes.

Q. And during Mr. Verdon's hospital stay, for instance, a

day after the surgery, if he says the pain is tolerable but he doesn't want pain meds at this time that doesn't -- but they told in the same note to continue pain regimen. Does that indicate he was in pain?

A. Yes, he was in pain.

Q. Do you know what's ridiculous? Would you expect him to be in pain days after the surgery?

A. Yes.

Q. So if he was turning down meds two days after the surgery, that means he didn't want to try to tolerate?

MR. GANNON: Objection.

THE COURT: Sustained.

Q. The very next day he complained of pain six out of ten and was accepting meds?

A. That would mean that the next day he accepted the pain medication?

MR. GANNON: Objection.

THE COURT: Sustained.

Q. There's a typewritten note here. The patient is struggling -- look at if 4/8/2009 -- struggling with the recommended use of the brace. It's difficult to put on but understands the importance. Right above it says current pain equals a six. Does that mean the patient was asked what's your pain level? Is that objective, subjective when the doctor writes the pain levels?

MR. GANNON: Objection.

THE COURT: Sustained.

Q. Well, is it subjective or objective if you know?

A. The pain scale is an objective test, pain as reported by the patient.

Q. Just so we could move onto the post-hospital x-ray. It states "Mr. Verdon looks like in October 2009 still goes back to parts of the clinic of Bellevue October 16, 2009. On this note -- that's in evidence -- it indicates the patient continues to wear a TLSO brace. That's the brace that you said he had when he came to see you?

A. Yes.

Q. When it says intermittent mid low back pain five out of ten, right then he's managing Ibuprofen. Five out of ten is on the pain scale?

A. Yes.

Q. And he's also taking Oxycontin at that time once or twice a week?

A. Yes.

Q. What it says here in October of 2009 that he's reporting a right thigh numbness after walking. It says it resolves after an hour and that it occurred with prolong sitting and that he also reports second toe numbness since the operation. Can you tell the jury what that indicates to you of what's going on -- what would be causing his numbness in his

thigh and numbness in his toe two months after the accident, two months after the surgery?

MR. GANNON: Objection. May we approach, Your Honor?

THE COURT: Yes.

(Discussion off the record.)

(Plaintiff's Exhibits 19 and 20 were marked and received into evidence.)

THE COURT: The last objection is sustained.

Q. What we've just agreed -- I'm just going to hand you the note because it's hard to find all of them in there. Just look at the note October 16, 2009. Tell the jury what, if any, medical significance as to spinal surgery is there to that note regarding Mr. Verdon's complaints?

A. So, October 16, 2009 is a rehabilitation note regarding Mr. Verdon and it's a note that indicates that he's having numbness in the thigh and numbness into the second toe since surgical intervention and he's also wearing his brace. He's had surgery so the symptoms of this particular kind of a complaint are consistent with what we would call neurogenetic or a radicular that is coming from the nerves or coming from the nerve root distributions into the legs and feet and that's something that needs to be monitored much as time goes on.

Q. And would it be the same with a note from 8/14/09? Can you tell the jury and we'll correlate it to the record what,

if any, medical significance from the note, one of the notes from 8/14/09 within Bellevue has any medical significance to you as a spinal surgeon?

A. So this particular note, this is from Bellevue Hospital Center and the thing about this note is that there is a weakness here which is located in the upper extremities as well as the lower extremities and so if there's upper extremities weakness which is graded as three plus over five and on that zero to five grading scale. Three plus means a little bit better than against gravity and that involves the upper extremity shoulders on both the right and left sides. There is also knee and ankle lower extremity grade three minus over five for the knees and grade three plus over five for the ankle. So that is significant in so much as there is weakness in the nerve roots that were involved in moving the arms and the nerve roots that involve in moving the lower extremities and legs.

Q. Before we take down the illustration here, did you already discuss the bone graphs?

A. No.

Q. If you could continue going through the operation and regarding the bone graphs now?

A. So bone grafting is the process where after you've fixed the spine with your implants, you now take that Midas Rex drill and you shave away the bones from T8 to L3 to expose the inner marrow of those bones and then you take bone graph. Graph

is basically bone that collects from the locate area. You also mix that in with some donated bone or cadaveric bone and then you place it into the area you've shaved down in order to get the entire segment of fusion to occur, that is, to turn everything into one solid piece of bone. It's a way -- if you have a fracture in a bone, your body wants to heal it but putting down now bone. You're actually -- by shaving away bone fooling your body into thinking that there's more than just one fracture here so it's now going to want to fuse or fix all those areas together with bone.

Q. And if you can just look at this note from 8/17/09 indicating what I'm pointing to if that has any medical significance to you, the handwritten notes of that doctor?

A. So these notes are demonstrable to medications and medications specifically given for pain and those medications include Tylenol for headaches and Norco is a narcotic medication for pain in addition to a medicine called Nexium in order to protect the stomach from the other medications.

Q. Thank you, Doctor. Now, I just wanted to take you back to the time when you referred Mr. Verdon out for MRI. So November of 2009, we're going back to your notes. You testified he was referred out for MRI's. Did he, in fact, have the MRI's to both the neck and the back?

A. Yes.

Q. Okay. I'm going to -- you could use any of the other

illustrations if you wanted to. Again reiterate the difference between the MRI and x-ray. I'm going to put up for you Plaintiff's 4A and B and I'd like you to discuss what, if any, findings there are on the films, okay?

A. Yes.

Q. At the time you referred out Mr. Verdon, if you could just take the symptoms -- withdrawn.

Why did you refer him for both neck and back MRI's after having reviewed the Bellevue record and after having listened to his symptoms that he was having?

A. So my goal was to image or look at the neck and the lower back because he had complaints and symptoms that were consistent with a radiculopathy to the arms and hands and a radiculopathy or nerve root problem to the lower extremity of legs and feet particularly having had a trauma that had produced a fracture and required surgery. So those other areas that are adjacent to that fracture site and surgical site were something that I wanted to image to look and see what the status of the spinal cord and the nerve were in those anatomical regions.

Q. Just so we're clear. When you talked about past medical history, you said there was none to the neck and back that would include those symptoms?

A. Correct.

Q. Can you tell the jury before we go forward on the MRI, what the word "degeneration" means or "degenerative" when we're

talking about diagnostic studies?

A. So whenever we're talking about -- well, in general when you're born up until you reached skeletal maturity, you're in the process of generation. You're growing, you're getting taller, your body is making new tissues and new portions of your body. So you're actually generating. When you get to a point where you've reached skeletal maturity, you start to slowing and gradually undergo a process of degeneration as time goes on and that's part of the normal aging process.

When you have a diagnostic study like a CAT scan or an x-ray or MRI and you're describing that study, when someone uses the word "degenerative changes" what they're referring to are the normal age related changes that you would see in the anatomical structures of whatever body part you happen to be looking at.

Q. Okay. And when you said when we reach the age of skeletal maturity, does every human being have degeneration from some point forward? What would the skeletal maturity be?

A. So it's different for boys and girls. And in general girls mature a lot earlier than boys so around 13 or so for girls; boys a little bit later, 16 more or less. So after that, you start to gradually undergo a normal degenerative process.

Q. Does degeneration equal either bulge or herniation?

A. So you can have degenerative bulges and you can have degenerative changes as time goes on.

Q. But the fact that there's degeneration in the spine mean there's definitely going to be a bulge or herniation?

A. No, it does not mean that there absolutely will be.

Q. Can trauma cause trauma or bulge or herniation?

A. Yes.

Q. Can someone have -- tell the jury what in medical terms "latent asymptomatic condition" means?

A. So a symptom is something that a patient complains about. If it's asymptomatic, it means you have no complaints or symptoms. Latent means it's basically there and it's been there with you but it's not causing a problem.

So, for example, if you take an MRI or an x-ray or something, you may see on that x-ray or MRI something that might look abnormal but a patient may not have any complaints or symptoms related to whatever is going on with that particular picture.

Q. I'm going to now put up for you both on nan axial and sagittal view of Mr. Verdon's cervical spine. Can you tell the jury when these were done and what, if any, findings of significance are on there and you could use that red pen if you want to.

A. Sure. So these are images that were taken from Lenox Hill Radiology and they were done on November 17th of 2009. These are MRI images. One is a side view of the neck and the other image that we're looking at are multiple axial images. We

are looking from the top down into the spinal canal and what we're looking at is we're looking at the spinal canal and the relationship of the cord, the spinal cord, to the discs in the neck. And so when we're looking at this and what I'll use is the axial images because I think they are a little bit clearer here.

Q. And before you get to the axial image. Looking at 4A, what is at the top, the round object, what is that?

A. That's the base of the skull and the cerebellum and the brain stem.

Q. Okay, and we'll use 4A after you're done with the axial to discuss the kyphosis and if that's normal or abnormal?

A. So on these axial images, what we're looking at are different slices through the cervical spine and we can tell where those slices come from because they're all numbered and each one of the numbers that we have here gives us another idea of where the imagine is from.

On the top, we look at the top of this MRI, we can see in the axial view, we see a gray circle and the gray circle is floating inside of a white circle and that's being held up by a black Y. The gray circle is the spinal cord. The white circle is the fluid that you see around the cord and the black Y is the spinous process and the lamina and the very top most image that we're looking at shows a spinal cord without any significant pressure on it.

Q. Is that similar to, if you turn around here what we're looking at on the anatomy illustration?

A. Yes. And that is what we see here on the anatomical diagram, upper top view, head down, axial view.

As we go further down the spine and we keep our eye on the spinal cord and that's the gray circle in the middle, we start to notice is that there is a flattening out of the gray circle in the middle that you can see actually quite pronounced on this image in the middle on the right side of the MRI here and this particular image --

Q. Using the red marker, if you could use that to tell the jury what level that is.

A. So this is image number or cut number five and if we go to the little diagram of where cut number five is is called tail film and we look for the fifth cut, we see the fifth cut is coming through the C3, C3, 4 area and we can see that there is a protrusion which is asymmetrical which means it's located on one side than the other which makes it a herniation. In the area where it's starting to flatten out is the spinal cord. And you can see the cord being displaced by that herniated material.

Q. Could such a herniation as the one you just pointed out to the jury cause numbness and tingling in the hands and pain radiating down from the neck to the shoulders --

A. Yes.

Q. -- and in the hands?

Q. If you could just using that to the jury, can the herniated disc also compress the exiting nerve root?

A. Yes. And if you look at the area where the exiting nerve roots are, those are called the neuroforamina. We can see it in the upper images. There are wide neuroforamina where there's no compression on the roots and on this particular one it's very difficult to see the neuroforamina and one of the reason is that is because there's a disc material in that section.

Q. And in addition to the numbness and tingling, would you expect as a board certified neurosurgeon would that condition cause pain?

A. Yes.

Q. And stiffness?

A. Yes.

Q. When we look at the -- if you look here at anything else further just talk about that, feel free, but if you use the sagittal view and show the jury where it is on the sagittal view?

A. So on the side view, if we look between the third cervical vertebra and the fourth cervical vertebra, we can see this gray material that's in between the vertebral bodies that has kind of leaked out in the spinal cord area. I've drawn an arrow in the area that it's leaked out in the canal. We can also see that leakage to some extent also happens here at 4, 5

and also a little bit over here at 5, 6.

The alignment of the cervical spine, if you're looking at the way the cervical spine is lined up, you can see that there is a little bit more than just a gentle curve to it. It looks almost like a little bit of a -- it almost looks like a C and this is what we would call an exaggerated lordosis in the cervical spine which is very common because it's trying to accommodate for that kyphosis in the area where the thoracic fracture is.

Q. And assume they'll be shown later but if the Bellevue radiologist talked about an exaggerated cervical or exaggerated kyphosis or surgical lordosis is that a normal or abnormal finding?

A. Those are abnormal findings.

Q. Okay. I'm going to take down 4A and B and I want to just put up a sagittal view, 5A. If you could tell the jury what they're seeing when it was taken?

A. So this is the lumbar spine or lower back MRI that was taken on November 17th of 2009 and specifically what we're looking at here is you can see these black straight lines that are going into the vertebral bodies. These are the screws that are going into the vertebral bodies so we know we're at the bottom of the thoracic spine into the area where the lumbar spine is. And this side view of the lumbar spine shows us specifically that the area where the spinal canal is and that is

the nerve roots are getting compressed directly below the segment that's been fused. So this is the sacrum down here. This is L5, this is L4. L3 has screws in it, that vertebral body with screws. If you see at 3,4 you can see disc material coming into the canal producing compression at L3, L4 and L4, L5 as well. There's another segment where you can see compression.

Now, compression happen here not only because there's disc that's coming in the spinal cord but it's also coming from the other side. You're getting kind of a double compression here because on the bottom portion of your spine, you're getting this hyper lordosis because the thoracic spine is pushing down on the lumbar spine which is causing the lumbar spine to kind of collapse down in on itself which is causing the pinching happening from the both sides in the lower back. Most severe at L3-L4 and L4-L5 to a lesser extent at L5-S1 but nevertheless at all of those areas.

(Continued on the next page ....)

DIRECT EXAMINATION CONT'D
BY MR. MCCRORIE:
Q Dr. Merola, I just want to go back to 4A for a moment. Could we show them on the diagram that we talked about the cauda equina, what we're looking at here in the middle coming from the brain, is that a full spinal cord?
A This is the full spinal cord, the terminal portion of the spinal cord. It's in the cervical spine, so there is full cord in the cervical spine.
Q If you could just show the Jury where you placed the arrows, what these lines are coming down?
A So, the gray lines are nerve roots. So, each gray line in the lumbar area that I'm ticking off with the pen, these are nerve roots, because the spinal cord has ended higher up here in the area where the fracture is. So, these are the nerve roots of the cauda equina.
Q And would you expect as a board certified orthopedic surgeon for the compression where you put the arrows on 5A to cause that radiating sensation that Mr. Verdon complained to you in November of 2009 down his legs into his thigh and toes?
A Yes.
Q Would you expect, with a reasonable degree of medical certainty, of the condition that you outlined on 5A to cause pain in Mr. Verdon?
A Yes.

Q Okay, I just want to be, and I'm going to try to get you to do this and have you sit down, but over the course of time, did you request what's called either serial MRIs or further MRIs?

A So, over the course of time, we have had more multiple MRIs, yes.

Q And you could use them to compare, if you would like, but what is the purpose of, when someone has a traumatically, a traumatic injury to the spine, what is the purpose, if they are hypothetically having ongoing symptoms of getting new diagnostic studies, periodically?

A So, it gives you, when patients have some progressive symptoms and progressive pain, particularly in areas that you are concerned about conformity and progression conformity, one of the ways that those MRIs is helpful is by giving you an idea of what's happening to the disks and whether or not they are progressively getting worse.

Q And you used the words, and we'll get to it when you sit down, but when a physician either talks about a cascade or a progression of a symptom or condition, what does that mean medically, progression of the condition or symptom?

A Progression means worse as time goes on.

Q I want to put up two MRIs from 2011 of the cervical spine and one is 7A and one is 7B, and use them to discuss with the Jury. Any findings you see on these MRIs and when they

were.

(Whereupon, this exhibit is displayed on the easel)

A This is 2011, October 9th of 2011. The top images are the sagittal or side view images of the cervical spine, and when we compare these images to our previous images, we can see that there is a little bit more nerve compression and disk herniation coming into the canal between C3 and C4. We see more disk here at 4/5 and we see some disk material at C5/C6 as well?

Q Just because it's the next view over, can you tell the Jury how an MRI takes pictures and why on some views it might look bigger or smaller even when you go to another slice, as they call it?

A So, one of the ways that an MRI works is, it magnetizes the soft tissues in the body. And mostly made up of water. And, the signals that come from the water content of your tissues differ depending upon something known as relaxation. So, when the MRI magnetizes you, it turns itself off for a brief moment, depending upon how long that turn off is, it increases or decreases the water symbol. What does that mean when you are looking at a picture. What that means is that the water signal here is very bright. Cerebrospinal fluid is basically a consistency of water, so you see it as very bright. When that signal changes in some MRIs, for example the last one that we saw, you don't see the cerebrospinal fluid as bright as it was,

you see more of the cord. You can play with that signal in order to get better resolution of cord or disk or bone, depending upon what you want to look at. And what we're looking at here is what's known as a T-2 relaxation where the water signal is very, very bright.

Q What I'm pointing to here on the MRI, what is that?

A This is between C3 and C4 and this is the disk herniation between C3 and C4 in the canal that you can see pinching the spinal cord?

Q Okay, and so, any opinions you give later on or today, I ask that they be done with a reasonable degree of medical certainty as is required, but as a board certified orthopedic surgeon, would you, with a reasonable degree of medical certainty, expect a herniation as the one you just circled on Exhibit 7A and the one on the prior exhibit, 4B, going into the cord, would you expect, if they were pre-existing that they would have caused symptoms and pain before August 11th, 2009?

MR. GANNON: Objection.

THE COURT: Sustained as to the form of the question.

Q I'll break it down. Would you expect as a board certified surgeon, Mr. Verdon had already told you there were no symptoms of either pain or radiation going down his arms, correct?

A Yes.

Q Would you expect looking at the herniations that you just identified on both the 2009 and the 2011 films as well, would you expect if he had these herniations in the conditions they are in, would you expect that they would have caused, produced pain prior to the date of the accident if they were pre-existing?

MR. GANNON: Objection.

THE COURT: Sustained.

Q Can a condition such as the one you circled in 7A cause pain?

A Yes.

MR. GANNON: Objection.

THE COURT: Overruled.

Q Would you expect it as a board certified surgeon to cause pain?

A Yes.

Q Looking at the --

(Whereupon an exhibit is displayed on the easel)

Q You would expect the person to feel pain and symptoms, in the conditions that you've identified on these particular films?

A Yes. The conditions on those films with the herniations and the symptom reproduction of radiating pain in the arms and hands is consistent with those herniations.

Q Okay, just looking at 7B, the same date of October 9th.

Can you just identify the level of --

MR. MCCRORIE: Withdrawn.

Q Identify anything that is medically significant?

A So, these images are from October 9th, 2011. These are the axial images of the spine, the cervical spine and in the upper portion of the cervical spine, we again see the asymmetrical protrusion of disk at C3/C4, and the subjacent segments, we can also see that we have, we have C4/C5, which is this segment here, image Number 9. Disk material coming into the canal, flattening out the cord and impinging on the nerve roots. And, image Number 13, Number 13 between C5 and C6, we also see some disk material in the canal, as well.

Q And I'm just going to take down and I'm going to put up 8A. Can you tell the Jury any findings of medical significance on 8A identifying when this was?

(Whereupon, that exhibit is displayed on the easel)

A So, this is October 9th of 2011. This is the lumbar spine MRI, the lower back MRI, again, what we're looking at is the last vertebral level with the screw in it is L3. Between L3 and L4, you can see where I'm drawing the arrows, you can see the pinching of the gray structures, which are inside the spinal canal, that is the nerve roots. And at L4/L5. You can see that there is progressive pinching of the nerve roots and you can see between the L5 and S1 segment, there is also a disk that is

sticking out into the canal.

Q Now, Doctor, did there come a time where you recommended that Mr. Verdon undergo further surgery. We're going to have you sit down and talk about how it progressed there. Did you ever recommend further surgery to Mr. Verdon as part of your treatment?

A Yes.

Q To what part of his body?

A The lower back.

Q And, did you recommend it in fact before the October 9th, 2011 MRI?

A Yes.

Q And did you actually seek authorization where other doctors had to decide whether it was necessary?

A Yes.

MR. GANNON: Objection.

Q And was it granted?

THE COURT: Sustained as to the form of the question.

Q Were you ever given authorization to do the surgery?

A Yes.

Q Okay. Did you do the surgery?

A No.

Q We'll talk about that in a little while. I'd like you to, I'm going to put up -- did you explain the surgery that you

suggested in your opinion should be done on Mr. Verdon to Mr. Verdon?

A Yes.

Q When did you first explain that to him?

A When we had an opportunity to sit down and go over the progressive issue, particularly with the breakdown of the lower back.

Q Okay. I'm going to put up, I'll do it for identification first. I'm just going to show you, are you familiar with the diagram, Plaintiff's 22?

A Yes.

Q You helped us prepare it?

A Yes.

Q Does Plaintiff's 22, what does it depict?

A This is a revision reconstruction of the spinal, addressing not only the fracture site but the lumbar, the lumbosacral spine.

Q Does this medical image fairly and accurately depict the surgery that both, that you recommend Mr. Verdon doing and that you explained to him?

A Yes.

MR. MCCRORIE: Your Honor, at this point, I'd like to enter 22 into evidence and publish it to the Jury.

MR. GANNON: Objection, side bar, please.

THE COURT: Yeah? You said you were going to ask

the Doctor to sit down in a minute, are you ready for that yet?

MR. MCCRORIE: I have to do a couple of more things, he can sit down while we're going to do this.

(The following occurred in the Judge's robing room, on the record, among the Court and Counsel, but outside the presence of the Witness, the parties and the sworn Jury)

MR. GANNON: Your Honor, I'm objecting to this illustration going into evidence. Obviously, the Doctor has testified, he's recommended future surgery. Mr. Verdon has turned it down. I object now to Dr. Merola now taking us through exactly what the surgery is going to be. He hadn't had it. I think to show them the graphic illustration of what the next surgery might or might not be, it doesn't matter. He got authorization from Workers Comp, it's turned down, not doing it now, and it's just adding onto an issue that's really not in the case at this point.

MR. MCCRORIE: Under the mitigation charge, it's his burden. I then have to explain to a Jury the reasonableness of having it, not having it, whether it's dangerous or not which is in the Charge. I think the Jury needs to hear about the surgery and we have an illustration.

THE COURT: I knew you were going to say that. Let me ask you a question. Are you objecting to them hearing about it, to him even asking about it, if he didn't have this chart.

MR. GANNON: No.

THE COURT: Or is it the chart?

MR. GANNON: The illustration itself. Obviously, he is going to testify he's recommending it, and I'll deal with that when I cross him. But, showing the illustration, I think --

THE COURT: Because he does have to go into what's involved with the surgery and why would that scare him and whatever. You are not going to object to that, you are just objecting to describing it with the chart.

MR. GANNON: Yes.

MR. MCCRORIE: I mean, it describes, it's the other surgery that he did and the extension of it and what has, what goes into it.

THE COURT: The difference is that's something that he actually did.

MR. MCCRORIE: Can I do it demonstratively and not go into evidence? It's the same, otherwise I have to take the other one and he's going to draw where he would have extended to.

THE COURT: You know what, I feel better if you

did it that way. You can have him talk about the surgery how big it is, bad it is, dangerous. Let him use the one that's already in evidence, to show, if he has to draw something, he'll draw it, I'm not going to put in a blow up of prospective surgery that's not going to be done, while I'm going to let you explain why it's not being done.

MR. MCCRORIE: Understood. Just so I'm clear. It's marked for ID, would I be able, like a lot of things are demonstrative, and they don't go in, can they be shown, instead of drawing on to the other one, he's just going to draw, he's going to go down. It's the same one as the other one but it goes down the levels and up. I mean, I wouldn't put it into evidence, they won't get it to take back to them. But it helps.

THE COURT: How extensive is he going to go into the illustration?

MR. MCCRORIE: He's going to tell them what he told the client. I'm going do go to the next two, the next two MRIs, and he's going to sit down.

MR. GANNON: Your Honor, I think he can do all that without the illustration. What I'm objecting to, obviously it's a sensational illustration.

THE COURT: I know what the problem is. I'm not going to use the illustration, because the fact that they couldn't bring it up to the Jury room with them is not the

real problem. It's now, just looking at him, pointing out everything that he's going to do with this opened up and that opened up, in a case where as of now, he's not going to even do it, although you are certainly entitled to explain why he's not going to do it.

MR. MCCRORIE: Not through the Doctor.

THE COURT: I'm going to sustain the objection to putting it in, but you can question him about what he wants to do.

MR. MCCRORIE: Sure.

(Whereupon, the following occurred in open court)

THE COURT: The objection is sustained to the blowup going into evidence, and with that, we're going to take, we're going to take a break in a couple of minutes, or we'll take it now. Five minute break, just to stretch, use the bathroom, and then we'll come back and finish up for today. Don't talk about the case.

(Whereupon, the Jury exited the courtroom)

(Whereupon, a recess was taken in this matter,and after the recess, the following took place in open court, with the Court and all parties being present)

THE COURT: Welcome back. Have a seat.

DIRECT EXAMINATION CONT'D

BY MR. MCCRORIE:

Q Doctor, when a patient describes locking of the legs in relation to a spinal injury, what if anything does that indicate to you?

A That's the kind of a symptom that you would expect to have nerve root radiculopathy in the legs.

Q Did in fact, when I sit you down, did in fact Mr. Verdon make such complaints to you?

A Yes.

Q And is a, once a disk is herniated, is that the type of injury that can be what you told the Jury before, progressive?

A Yes.

Q And in this particular case, you ordered the MRI in 2009, 2011, did you also order another one in 2013 of the lower back?

A Yes.

Q Why did you do that?

A Once again, to look at the lower portion of the back, to look at its structure. As time goes on, our major concern is the collapse of the lower lumbar levels that we've been seeing in the many other MRI and the left arm that's, actually putting pressure on the lower back.

Q Again, you just took a break, the Court Reporter, your back is to him, if you don't mind just picking it up a little bit, please. Regarding Mr. Verdon's complaints of locking, did they progress, stay the same, from 2009 to 2014?

A More or less, progressive.

Q I'm going to now put before you Plaintiff's 10A and 10B. MRIs. Could you just tell the Jury what they are seeing and what if anything it has progressed from the prior studies?

(Whereupon, those exhibits are displayed)

A So, this is an MRI of the lower back from June 30th of 2013. And so we're looking at the same images that we've been looking at before. Last vertebral body with the screw in it is L3. We're seeing the pinching of the nerves happening at the L3/ L4 level. We see the pinching of the nerves happening at L4/L5, we see a persistent herniation at L5/S1. This is the T-2 image where we see very bright fluid.

Q Looking at the T-2 image, tell the Jury which images on 10B and why they can look different even though it's taken the same day?

A So, this is, this is an image where now we see it has a brighter signal on it. The fluid that's in the spinal canal appears to be gray. So, we're looking at different, a different signal, so you look at the tissues a little bit differently.

Q Is that called the T-1 image?

A Yes.

Q Thank you, Doctor.

A And once again we're looking at the L3 vertebral body, that's the last bone with the screw in it. 3/4 disk and bone impingement on the nerves. L4/L5, disk and bony impingement on

the nerves and that persistent herniation at L5/S1.

Q And although you said a persistent herniation at L5, and you circled it, is it in fact a herniation at the levels above? Are those also herniations?

A Yes.

Q So far we've seen cervical and lumbar MRIs. In June of 2013, did you also order since his surgery the first thoracic MRI?

A Yes.

Q I'm going to put that up and show the Jury. What if anything is significant in there, specifically in the, where the injury was?

(Whereupon, that exhibit is displayed)

A So, if we look at the level of fracture, that's T-12, the T-12 segment. The dark shadows are the implants, those are the screws and the rods.

MR. MCCRORIE: Just for the record, if I didn't say it, it's 11A.

MR. GANNON: 11A?

MR. MCCRORIE: 11A, yes.

A What we can see is in the area between T-12 and L1, you can see an area, where as you would notice, the disk is squeezed out between 12 and 1.

Q What is that called?

A That's a herniation between T-12 and L1. You can see

the kyphosis along the area where the fracture is. You can see the spinal cord and the spinal canal in the thoracic area.

Q And we've seen a neck MRI and a lower back MRI. Is there anything post -- well, is the kyphosis on the thoracic MRI four years post injury normal, abnormal, something else?

A This is abnormal kyphosis on the thoracic MRI. And what you are seeing is that the area above the last screw is curving, is curving more forward, so there is an increase in what is looking like a C shaped thoracic spine.

Q And in 2000, is there anything else that you would like to show the Jury. You circled the herniation in the thoracic region, anything else?

A No.

Q Just you've already showed, we started out with 13B.

(Whereupon, an exhibit is displayed on the evil)

Q There are two other views that were taken of -- actually, sorry. These are taken the same time period as the thoracic MRI on 6/30. In fact, they are taken the day before. I'm going to show you Plaintiff's 12A and 12B and if you can just tell the Jury what they are seeing there, what type of study it is and what it shows?

(Whereupon, those exhibits are displayed)

A So, these are X-rays of the thoracic and lumbar spine. One of the things that we notice on this X-ray is, that, that

front to back view that we had from before where we didn't really notice the fact that there was scoliosis and they lined up pretty well. There is between, so L3 is the level where the screws are, where they end. L4 does not have any screws in it. L5 does not have any screws in it. But there is a sense that they are starting to be asymmetry to the bone between L4 and L5. So, there is the beginning of a scoliotic deformity between these two areas. So if I take a parallel line in between what are known as the pedicles on each segment, you can see that there is starting to be an angle in between those two lines.

Q That wasn't there before?

A Correct. Before everything was lined up pretty much straight in the front to back or the AP view.

Q Is that something, when something occurs that's not there years before, is that something, is that a progressive --

A Yes.

Q -- condition?

A Correct.

Q Continue, please?

A And, on the side view of the lumbar spine, when we look at the, the lordosis of the lumbar spine, you can see that the lordosis is turning into almost a reverse C of the thoracic spine. So, the lumbar spine is trying to, as the thoracic spine bends forward, the lumbar spine wants to bend backwards so to get your head back over your pelvis. So, you start to see the

lower back, this is what we're talking about when we're talking about the lower back collapsing. Your pelvis and your hips are tilting forward, your upper thoracic spine is going forward, so we have these two things going forward. The only way to compensate for that is the lumbar spine now is trying to bring both of those segments backwards. So, you are getting a hyper-lordosis in the lumbar spine. And when we look at the MRI, that's where you see those areas where the nerves are becoming more pinched.

Q Before I go to the next, is there anything on the bottom view?

A The bottom picture here is also June 29th of 2013. The side top view of the thoracic spine, after the screw ends in the T-8 vertebral body, you can see that the upper portion of the thoracic spine is developing that hyper kyphosis or C. So, as this section kyphosis itself, the lumbar spine wants to lordose itself and bring you back into balance.

Q I'm going to put up Plaintiff's 20, the previous operation that Mr. Verdon had the day after the accident. And, I want to get back to the surgery you discussed with him that he needed and what you discussed with him about what you would be doing in that surgery, and why? I'd like you to use Plaintiff's 20, Plaintiff's 12B and the two most recent X-rays, 13A and B and, if you could tell the Jury what you told Mr. Verdon about what the surgery would be, why it would be required and what you

would do?

(Whereupon, those exhibits were displayed)

A So, as, as a reconstructive surgeon, my concern, really the only thing I focus on, I focus on the anatomy of what we're dealing with, what's happening to the anatomy as time goes on and when you, when you watch or you have the ability to reasonably predict what's going to happen after having seen these types of patients before, I have to let the patient know that my concern is a progressive post traumatic kyphotic deformity.

Q I'd like you to explain, after you sit down, it's in evidence, your notes, you were first talking about it in 2010. After having done the X-rays and MRIs in 2011 and 2013, did what you predict happen, did it in fact start to occur?

MR. GANNON: Objection.

THE COURT: Overruled.

Q Okay. And, did Mr. Verdon's symptoms even years after you told him, did they progress from when you first told him he would require this surgery?

A Yes.

Q Please tell the Jury again what the surgery is and why it would be required?

A So, what, as a surgeon, what I can do to prevent the lower portion of the spine or the lumbar spine from continuing to collapse and cause impingement to those nerves. So, from a

structural point of view with what we can do is, we can reconstruct the lower portion of the spine. And if I look at this side view X-ray?

Q 13B for the record.

A We can see where the lower portion of the lumbar spine, because it's collapsing itself more and more, this needs to be taken into this upper portion of the fusion level. But, you can't stop your fusion segment where the last screw ends, because part of the problem is, that above that, you can see if you look at the top part of this X-ray, these vertebral bodies that are on the top of this X-ray should be pointing forward. And if you look at where they are pointing, the top most one is almost pointing directly to the ground. So, if you, if I only reconstructed the lower portion of the back and left all of this stuff alone, this portion of the back would continue to come forward like this. And then what would happen to that is, it would throw the neck off, because the only other portion of the spine you have to compensate with is your neck. So, you would eventually start to bend over up top, and your neck would be thrown over your back because of the herniation he has in his neck, and I want to avoid that from happening.

So, I have to come up into the area where these bones are falling over, and bring this fusion segment up here, pull the top portion of the thoracic spine back to decrease the kyphosis that's happening and then stabilize and reconstruct or

fuse the lower part of the spine to act as a stable base for the whole overall reconstruction.

Q In order to do that surgery, what has to happen to the eight levels of screws that are already in there?

A So, in order to do that, you have to, well you have to remove these, you have to take these implants out.

Q And before we get there, looking at what we showed the Jury, the first surgery, can you characterize that surgery as a spinal surgery? You do a lot of them, can you characterize that in some way?

A The original surgery?

Q Yes.

A The original fracture surgery?

Q Yes.

A Okay.

MR. GANNON: Objection.

Q Is it a minor surgery?

THE COURT: Minor versus major?

Q Is there a complication rate to a multiple level fusion?

A Yes.

Q What is the complication rate?

A So, the complication, if you look at the rate of complication for a seven level posterior spinal fusion for two non-continuous fractures, the only overall complication rate for

that particular type of surgery is somewhere in the neighborhood of about ten percent or so, if you take all the potential complications into consideration. As you increase the amount of surgery that you do, the more you do, the higher you increase the risk or the potential complication rate from surgery. This particular surgery goes beyond a trauma surgery. The first surgery was a must do trauma surgery, to stabilize the spine. This is a deformity surgery. And it falls under the category of an adult deformity surgery. When you are looking at adult deformity surgery, where you have to correct a post traumatic kyphosis, the complication rate for that particular kind of surgery can be as high as thirty percent, which means that, thirty percent of patients, thirty out of a hundred will develop some type of complication from the procedure because of the magnitude of the procedure itself.

Q We didn't handle this in Bellevue. Can you tell the Jury whether or not Mr. Verdon required blood transfusions after his first surgery?

A He did require transfusion at Bellevue, yes.

Q What are the, can you tell the Jury and show them even on the, the grid anatomy, can you draw a line or use the red marker to show them how, what the fusion level would be from, where the metal would be, if you go forward with the surgery?

A So, for this, what you want to do is, you are looking at the side view of the spine, in order to get everything

balanced.

Q I'll hold it right here, Doctor?

A And this is a good way of looking at it. This is, we can call this a plumb line, if you drop a lead weight and a string from the top of the head down to the pelvis, this is good balance for your spine. One straight line down. Gentle curve in the lumbar spine, gentle curve in the cervical spine, gentle curve thoracic spine. Here, because the fusion is at T-8, it goes up to the eighth vertebra, you have to come up to at least the second thoracic vertebra to be able to get yourself enough vertebral segments to bring the top portion of the thoracic spine back far enough, in order to prevent it from continuing to fall over. So, you got to grab onto the top part of the spine at the T-2 segment. What you do after you do that is, you shave away bone on the back side, so that when you correct the deformity, you can squeeze the bones together and each segment that you squeeze together gives you a couple of degrees of correction, and you hopefully you can get enough degrees of correction up on top to restore some alignment. If you can't, you got to shave away some bone in the area where the fracture site is, to give you some more alignment.

For the lower portion of the spine, because all of these segments are mobile, you have to fix, you have to fix your construct down into the, into the sacrum, in order to give yourself a stable base. And so, in order to fix yourself down

into the sacrum, you would have to do basically a lumbar sacral fusion and an extension of the proximal fusion.

Q How many levels will there be screws in then?

A So, you talk about seven levels.

Q And what would happen to the disks that have herniated and that you circled, what would happen to the actual disk material that's herniated during this fusion surgery?

A So, in this area, because the spinal, wherever there is spinal cord fusion, you can't go in there and move the spinal cord out of the way and take the disks out. But you can in the lumbar spine because it's nerve roots, so what you can do in the L3/L4 to S1 segment is actually go into the spinal canal, move the nerve roots out of the way, you can remove those disks and then you can put what's known as a cage. And some of them are made out of titanium, some are made out of carbon fiber, which you put in between the bones. It makes the height of the vertebral body stay where they need to be. You fill it with bone graft and it adds another segment to your fusion, so you can have more of a stable construct. So, you do that in the lower portion of the spine. You do it at L3/L4, L4/L5, and L5/S1. You can take all of those out, replace them with cages and then fuse down into the sacrum.

Q In your notes, you request a decompressive lumbar laminectomy and lumbar spinal fusion, is that what you are speaking about?

A Right. So, you are decompressing, you are taking the pressure off of the lumbar spine and you are fusing, you are gluing together, you have to glue the lumbar spine down into the sacrum.

Q Just going to, I know that took a while, but I'm going to have you sit down now, Doctor.

(Whereupon the witness resumes the witness stand)

Q You said the complication rate or the complication would be thirty percent. Can you tell the Jury all of the complications that you explained to Mr. Verdon could occur during the multi-level fusion and the revision, taking the metal out and going that way?

A Sure. So, because it's a revision or a redo, you have to deal with that area that's already been fused, which means that there is scar tissue in there. So, you have to take, you got to take down the scar tissue. And you have to take the fusion apart to get the screws and the rods out. So, when you take, you have to basically break the area where the fusion is to get the screws and the rods out. So, when you are doing that, one of the risks of that is that once again, because that is an area where the spinal cord is, there is a potential for spinal cord injury at the site that you have to take apart. So that's one thing. You, for this kind of an operation, because of the magnitude of the operation, you have to think about the fact that you are going to require blood and blood products and

blood transfusion. So, the incision, because it's a revision and because you are using multiple levels of implants, has a higher incidence of infection, post-op infection. Once again, you are operating on the thoracic region, where the chest cavity is, so there is the potential once again to have a problem with either fluid in your chest cavity or in some cases, you can have air in the chest cavity, from this area, which you need to think about.

You are also going to be dealing with the abdominal area, for the abdominal cavity, and, you can have two potential problems with your belly. One is what's known as an ileus, which means your intestines don't work after surgery, after having had a lengthy operation, because of the anesthetics and medications. The other problem is a complication known as a Ogilvie's Syndrome, where if your colon doesn't work to the point where it becomes over distended, then you may require a procedure to correct that. Other than intra-operative problems with this kind of an operation, it can cause blindness as well, because of blood loss, intra-operative hypotension and positioning as well as the time involved to do this kind of a procedure. A potential issue with this kind of a case is blindness. And that can happen. So, that's a risk we need to discuss with the patient as well. Those are, those would be the what we would call major potential complications from this kind of a revision fusion.

Post-op, the biggest problem, long term post-op, well, the reason you want to do it is to preserve nerve function in the lower portion of the back, to preserve function to your legs. So, you can continue to be up and walking around and have some balance remaining. The down side of a lengthy thoracic to sacrum fusion, the down side risk of that is, you have to trade off mobility in your spine. So, you have to trade spinal mobility for nerve root preservation. So, the considerations for this thing are the post-operatively, you have to reorganize the way you do things at home and around the house, and the care that you need for them because of the amount of levels that need to be fused. So, those are the some of the major complications that can occur with this kind of a procedure as well as some of the lifestyle changes that you have to take to make after this procedure is done.

Q You talked about the time. How long, you said the time of the surgery, how long would it take to do such a surgery? I know there is no set time, but on average?

A So, this would be the kind of an operation where you wouldn't do any other cases on this day. This would be your only case for the day. In general, I always operate with a colleague who is another spinal spine surgeon, two spine surgeons working together to do a revision, the T-2 to the sacrum pelvis fusion with multi-level laminectomies, diskectomies and fusions, you are talking somewhere in the

neighborhood of about eight to ten hours worth of surgery.

Q I want to go to your notes, Doctor. We left, when we first left you, it was November, I want to skip to November 2009. We're not going to go through every note. Skip to January, 2010 and go to March 1, 2010.

A March 1 of 2010.

Q Yes. Just take us through that. Just the significant things, we've already done, we did the whole first, up in the followup visit, what if any complaints was he making to you, Mr. Verdon?

A So, on March 1st of 2010. He was actually awaiting reconstructive procedure for the right shoulder. Let's see, pain.

Q Awaiting authorization for it?

A Yes.

Q Go ahead?

A So, there was a neck and low back symptoms and pain. Pain also at the lumbar portion, upper portion of the lumbar spine and lower portion of the thoracic spine. And progressive pain in the legs with a complainant of some left lower extremity weakness as well.

Q Again, the words, when the you say progressive pain, what does that mean?

A Pain that has not gone away over the course of time and has gotten worse.

Q Go down to the range of motion, physical examination, what was the spinal range of motion?

A Overall spinal range of motion, essentially zero degrees in all planes which meant that he was having spasm which was bad enough for me to not be able to range his spine and take a measurement.

Q On the physical examination, just above that, if you could just talk about, what if any findings you had, and again, tell the Jury what dermatomal distributions are and why if at all that was significant what you found?

A So, he had a loss of sensation in the nerve roots that supplied the L4, the L5 and the S1 distributions in the legs.

Q Okay, what was your plan, your diagnosis or impression and plan?

A So, the impression and plan at that time was a collapse of the lower portion of the lumbar spine with neurological symptoms to the legs. And, because this problem was happening, I had recommended that we do surgery to correct that and to prevent it from getting worse.

Q When you write given the nature and duration of the gentleman's complaints and symptoms, I just want to ask you, in the almost five years you've been treating Mr. Verdon, do you consider him a patient that complains, that doesn't complain, something else?

MR. GANNON: Objection.

THE COURT: Overruled.

Q Please tell the Jury, you see a lot of patients, what type of patient do you consider him?

A Sure. So, I think out of, when you think about the different types of people that you see, Mr. Verdon is more of the type of person where you have to dig to get symptoms and complaints out of him. So, he's not one that you can say is easily going to come in and start complaining about everything that's wrong. He's the kind of person where you really have to sit down with him and not only just ask how are you or what's going on, but you have to get a little bit more specific. Because he doesn't really quite offer up all that information to you. I think if I was going to describe him in a term, I would say he's stoic.

Q Stoic meaning what to you, medically?

A Stoic basically meaning, like I tell my kids when they fall on the ball field, suck it up and keep going. A stoic person is really one who sucks it up as much as he can and doesn't really complain and whine about it and just tries to keep going.

Q And your impression and plan, is that the first time you recommended surgery, March of 2010?

A Yes, I believe so.

Q And of course you had to request authorization for it, the fact that you were recommending didn't mean it could be done

then?

A Correct.

Q Maybe obvious too, but did you ever, from your first note through every note, did you make any recommendation as to whether or not he was disabled from his prior occupation?

A Yes.

Q Could you just tell the Jury with a reasonable degree of medical certainty, from the time you first saw him until now, what if any opinion you had regarding his ability to return to work as a manual laborer or carpenter?

A No ability to return to work as a manual laborer or carpenter with these injuries.

Q What we have to do. Because of the accident and the injuries?

A Yes.

Q Okay. Did you, did you in your notes, you write he's totally disabled, is that what you mean?

A Yes.

Q I'm going to then say, we'll breeze over, you then saw him, April May of 2010 and then July. Did you come to learn that authorization was in fact given to him for what you call the reconstructive surgery to his shoulder, but did he in fact to your knowledge from one of the other doctors in your practice have the surgery on June 3rd, 2010?

MR. GANNON: Objection, your Honor.

Q To his shoulder?

MR. GANNON: Objection leading.

THE COURT: Sustained.

Q Did you come to learn that he had surgery to his shoulder, the one that you said he was awaiting?

MR. GANNON: Objection.

THE COURT: Sustained.

(Continued on next page)

Q. What, if any, any other surgery did you ever know of that Mr. Verdon had other than the surgery that he first had in the hospital?

A. Right shoulder reconstruction.

Q. When you told Mr. Verdon about your recommendation to have a lumbar reconstructive surgery to take the discs out that were starting to herniate, what was his reaction?

MR. GANNON: Objection.

THE COURT: Sustained.

Q. Did he do the surgery?

A. No.

Q. Did he want to do the surgery?

A. No.

MR. GANNON: Objection.

THE COURT: Why don't you just ask what he said.

Q. What did he say to you?

A. I mean to summarize what he said was basically that he didn't really think that he was able to be able to go through with that type of an operation.

Q. And over the years as you've done the MRI's and the -- you described to Mr. Verdon as you've described to this jury the progressive nature of what's going on in his lower back and what would happen -- continue to happen if he didn't have the surgery?

A. I went over with him what we would call the prognosis

for this particular problem, particularly given everything that we have already looked at and known about his lower back.

Q. With a reasonable degree of medical certainty, can you tell the jury what the prognosis would be for him if he doesn't have the surgery as it relates to him but do it with a reasonable degree of medical certainty for the record please?

A. Sure. So within a reasonable degree of medical certainty without reconstructing the lower portion of the back, the prognosis is poor because of a progressive nerve compression and lumbar collapse.

Q. Was Mr. Verdon's family ever present during these?

A. Yes.

Q. For all of them?

A. Yes.

Q. Is Mr. Verdon apprehensive to have the surgery in your view?

MR. GANNON: Objection.

A. Yeah.

THE COURT: Sustained.

Q. Did he ever tell you why he's not having this surgery to this point?

MR. GANNON: Objection.

THE COURT: Sustained.

Q. Have you continued over time to recommend the surgery?

A. Yes.

Q. Go to your September 2010 note please. I know there's notes in between but it's in the record. Are you in September?

A. Yes.

Q. Does that note reference surgery?

A. Yes.

Q. And had, in fact, Mr. Verdon sought out a second opinion is noted in your notes?

A. Yes.

Q. And what, if any, decision to do the surgery or not was relayed to you as indicated in your notes?

MR. GANNON: Objection.

THE COURT: He's already testified he chose not to do it because he didn't think he can go through it.

MR. McCRORIE: I understand.

Q. And that's noted in your notes there?

A. Yes.

Q. In the follow-up visit, can you tell the jury how you describe the pain he was describing to you that he was feeling in September 2010 despite the fact that he wasn't going to do the surgery at that time?

A. Severe pain.

Q. It's in your notes. "He does continue" if you could read that to the jury?

A. "He does continue to suffer from severe pain secondary to the fractures that were received with residual radiculopathy

into the lower extremities and radiculopathy secondary to sub adjacent breakdown."

Q. And your physical exam is what it is. It will be there for the jury and the record.

The impression and plan. Did you at that time since he wasn't electing to have the surgery at that time did you talk to him about how often he should come see you?

A. Yes.

Q. Tell the jury how often you told him he should come see you at the time if he wasn't having the surgery?

A. Sure. So basically, you know, from a reconstructive point of view until I'm doing the reconstruction, there isn't much for me to do unless there's an cute deterioration in his condition. He got progressively worse very fast. That would obviously tip us closer to doing the operation much quicker. So I leave it open for the patient to either come see me on a quarterly basis which means every three months depending upon how they're doing. If they're doing well, okay. If they're not, come back sooner up to anywhere between a year to two years depending upon how they are and as long as they're following with what I had recommended was his treating neurologist and his orthopedist.

Q. And I just want to get back to this. Did there come a time in addition to the doctor -- I'm not saying your practice because that was in your practice at the time in University

orthopedics -- did you ever refer Mr. Verdon out to another type, you said a neurologist, but a board certified pain management neurologist?

A. Yes.

Q. Who was that?

A. Dr. Hausknecht.

Q. Is Dr. Hausknecht part of something called Complete Care Medical Services?

A. Yes.

Q. When did you first refer Mr. Verdon to a board certified neurologist/pain management doctor?

A. I believe it was at that time when I wanted him to be under management and observe from a neurological point of view.

Q. Those notes are part of your record. Is that correct?

A. Yes.

Q. If it indicates the first visit was November 17, 2009, would that --

MR. GANNON: Objection. I apologize.

THE COURT: Sorry?

MR. GANNON: I jumped the gun, Your Honor.

THE COURT: Oh.

Q. It indicate the November 17, 2009. Does that refresh your recollection, that particular note?

A. Yes.

Q. And your notes -- withdrawn.

As part of your notes, do you have knowledge or did you have knowledge throughout your treatment of Mr. Verdon that he's seen this pain management physician every six weeks approximately since November of 2009?

A. Yes.

MR. GANNON: Objection.

THE COURT: Sustained.

Q. You have the notes. He's going to come here and talk to the jury but you have his notes, correct?

A. Yes.

Q. Okay. So, I want you -- after the September 2010 note, the next note that would be in your notes just say Andrew Merola on top. Is that because you no longer had any affiliation with University Orthopedics?

A. Correct.

Q. Okay. In December of 2010, is the first time you saw Mr. Verdon outside of University; is that correct?

A. Yes.

Q. When you sat down with him, did you discuss the surgery again?

A. Yes.

Q. In your impression and plan, can you read to the jury the second sentence about that discussion?

A. "At this point in time, he continues to remain apprehensive."

Q. What does it say right after that?

A. It says "He will follow up with Dr. Touliopoulos and Dr. Hausknecht and return to me as needed."

Q. Can you go to the next time Mr. Verdon came to you, just tell the jury when that is?

A. I saw him in April of 2011.

Q. And do you make similar comments about his not doing the surgery at that time?

A. Yes.

Q. When did you next -- withdrawn.

Do you also make similar comments that he's seeing the other doctors, plural?

A. Yes.

Q. Go to the next visit and tell the jury when that was please?

A. In October of 2011.

Q. And on each of those visits, do you do physical exams as well as talk to Mr. Verdon?

A. Yes.

Q. And on each of those exams, did you find objective complaints?

A. Yes.

Q. I mean objective findings?

A. Yes.

Q. And some of them talk about what you talked about

here, the MRI's in 2011?

A. Correct.

Q. October 24, 2011, did you, in fact, sit down with Mr. Verdon and his family and have that same conversation you'd had after looking at the MRI's from 2011?

A. Yes.

Q. If you could just read the second sentence and third sentence please?

A. Which paragraph?

Q. After impression and plan -- I'm sorry -- page 2.

A. "He's quite well aware of the fact that he remains a candidate for surgical intervention particularly given his low back complaints and symptoms and evidence of sub adjacent breakdown. In light of his current issues, he would like to continue conservative care and treatment."

Q. Okay. And when did you next see Mr. Verdon?

A. February of this year.

Q. And having had Dr. Hausknecht's notes, were you aware that Mr. Verdon was on medication -- withdrawn.

Were you aware whether or not he was on medication from the time you started seeing him until when you just saw him in February 2014?

A. Yes.

MR. GANNON: Objection.

THE COURT: Overruled.

Q. What is your understanding of the type of medication he's been on?

A. He's on a narcotic Acetaminophen combination pill.

Q. And did you once again discuss with Mr. Verdon your opinion whether or not he should have this future surgery?

A. Yes.

Q. And in February of 2014, did you, in fact -- what, if anything, did you tell him and did you -- withdrawn.

With a reasonable degree of medical certainty, did you discuss with him again whether or not he needs future surgery?

A. Yes.

Q. Is his future surgery with a reasonable degree of medical certainty is that an option?

A. Yes.

Q. Will it continue to remain an option?

A. No.

Q. Can you tell the jury with a reasonable degree of medical certainty why it will not continue to remain an option?

A. At a certain point in time, there's -- there will come a point where the bones and the discs in the lower portion of the back won't be able to lordose themselves any more and at that point in some time where that is no longer -- it's no longer able to accommodate for the deformity, there will come a point in time where those nerves are going to deteriorate to the point where walking is going to make it really impossible for

him to walk without having pain.

Q. With a reasonable degree of medical certainty, can you tell the jury at what point, having treated him for almost five years, at what point it's your opinion he will no longer have the option whether or not to do the surgery?

A. So if we look at the progression of his low back over the course of the last four to five years. I think it's reasonable to predict that within the next five to seven years we're going to get the point where those lower backbones won't be able to accommodate any more.

Q. Has Mr. Verdon ever expressed to you over the years or at any time a desire to get off of narcotic pain medication?

A. Yes.

Q. Can you tell the jury what, if any, alternatives you discussed with Mr. Verdon and if you could use Plaintiff's 23 and 24 for identification that have been marked. First tell the jury what, if any, other alternatives to the five years of medication or continued lifetime medication have you given -- talked to Mr. Verdon about?

A. An option when you've reached the limitations of oral pain medications, one of the options for either chronic or longer-term pain is considered the use of a spinal cord stimulator.

Q. Using Plaintiff's 23 and 24 for identification only can you discuss with the jury what a spinal cord stimulator is,

how it works, how it gets in implanted and why that would obviate the need for some medication?

A. A spinal cord stimulater is in many ways a lot like a pacemaker for the heart. It's a small battery powered device that is implanted underneath the skin that has electrical leads that are placed in the area of the spinal cord. That device sends, transmits signals to the spinal cord in order to turn off the pain receptors in the cord and that device can be helpful in terms of helping with chronic long-term what's known as neurogenic pain.

Q. Regardless of whether or not this spinal cord stimulator was inserted into his body, would that be able to allow Mr. Verdon to not have to have the surgery since it's inevitable?

A. No. The surgery is structural and the surgery -- the surgical is a structural way of rebuilding the lower back to prevent it from continuing to cause nerve damage but it certainly doesn't address pain in the long run.

MR. McCRORIE: Your Honor, I don't know what the preference is. It's twenty after. I have to start all the stuff about the opinions and if you wanted me to --

THE COURT: You're not going to finish it in the next ten minutes?

MR. McCRORIE: I won't finish in ten minutes. It wouldn't be much longer. I know it's 4:30 so I wanted

to --

THE COURT: We'll just break here and resume -- okay. So we're going to break for the day. Obviously, the doctor is not finished.

I mentioned to you that we're going to be down Monday. We will not be meeting on Monday. Please don't show up here. If you do, you're still not on jury duty so don't ask for a note. We will resume 10:00 a.m. Tuesday. I think we're going to have another witness at 10:00 Tuesday but the doctor is going to come back Tuesday afternoon to complete his direct and cross examination so you'll be hearing two doctors on Tuesday. So have a great weekend.

THE JURORS: You too.

THE COURT: Don't show up. Thank you. Don't show up Monday and please do not talk about the case.

COURT OFFICER: Jury exiting.

(Jury exits courtroom.)

* * * * *

(This matter was adjourned to April 8, 2014 at 10:00 a.m.)

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