Q We are going to turn our attention then, sir, to the next study which was, I believe, in August of '04.

During the course of your first exam of Mr. Klein you took a look at other films that he had in August of '04. Is that correct, sir?

A Yes.

Q And those were also MRI's of the cervical spine; correct, sir?

A Yes.

Q Sir, I am going to hand those films to you and ask that you please demonstrate to the jury what those MRI films showed.

A I am going to first put up Exhibit 25-B. And we are again looking at the side view, what we call a sagittal view of the cervical spine.

Is there a question? I am sorry.

Q The question was, sir: What, if anything, did this study reveal to you?

A I am sorry. We are again looking at the side view, and we are seeing a couple of things. The first thing I am noticing is that there is an increase in the angulation at C-4-C-5, so that between the fourth and the fifth bone it appears that the neck, which was a little straightened out, actually now went a little bit

more forward. We use the term kyphosis, which is the bending forward. And that appearance is very much what I think I was seeing clinically when the patient came and I said the neck was somewhat bent forward.

So we are seeing this kyphosis. We are also seeing that the defect pushing back from C-4-C-5 actually looks a little bit increased. As we run the different images, we continue to see abnormalities at C-4-5 and C-5-6. So the slight change in -- it is not overwhelming, but I think it is real, is that there is an increased angulation and more of a defect seen at C-4-C-5.

Now I am going to move to Exhibit 25-D.

Q Can I ask you a question before we do that, sir?

A Certainly.

Q The kyphosis. What causes the neck to go forward like that?

A Well, obviously we can do it voluntarily, but we also find that our neck assumes the position that is most comfortable. So that when a patient walks around with the neck bent forward, if you ask him why are you doing that, most of the time they will say what do you mean. You say, well, your neck is bent forward, straighten it out, and they will be uncomfortable

straightening it out because it is the position of less comfort.

So the kyphosis, which is the bending forward, is the position assumed by the patient because it is a more comfortable position.

Q Sir, I am going to show you a blowup of some of the slices of that MRI film. I am going to ask you --

A Can I bring it over here?

Q Sure. 26.

THE COURT: No, let the jurors see. Keep it straight.

Jurors at the end, can you see this? Okay? Just a shift. There you go.

Q Is the kyphosis shown on this blowup, sir?

A Yes. You can see -- let me make sure what we are looking at first.

8/24/04, Alison Klein. You are seeing --

THE COURT: Stand to the side there, Doctor. Use the pointer.

A You are seeing between the fourth and the fifth vertebrae that there is a curve here and then it cants forward or bends a little bit forward, and that's the kyphosis I am talking about. We also can see the

disc material pushing out there. This was the image I think I centered on a little more. And, again, it shows pretty much the same thing at C-4-5.

Q You said there is an increase in the defect at C-4-5; right?

A It appears, in comparing one to the other, it is slightly more prominent than it was. We are going to look at another image I think in a moment. I can talk about that a little more.

Q Thanks, Doctor.

A I am now going to put up Exhibit 25-B. I have to take off my glasses to figure out what I am doing.

Q Do you wear your glass during surgery, sir, or do you take them off?

A I wear magnifying loops during surgery.

We are now looking at another MRI series of the patient. This is the similar view to the one we looked at earlier. This is now the cross-sectional view again.

I am looking at C-5-6, the lower one of the two we talked about. And again, there is a disc -- there is the so-called disc osteophyte complex, but pretty significant narrowing of the neural foramen. And as I move up to C-4-5 I still see that disc material narrowing the foramen at that level.

I am also seeing at C-4-5 that there appears to be a little bit more of a ridge concentric to the left side than I was seeing on the last image.

I mentioned I thought there was a slight increase in the amount of pathology at C-4-5. I think this again shows that the spinal canal is just a little bit narrow, and left side more than right side there is narrowing of the so-called neural foramen we talked about earlier.

Q Is that increase in the ridge at C-4-5, is that consistent with the history given to you and consistent with your opinion that a disc herniation was caused at C-4-5 by this accident?

A Yes.

Q Share with us how that is.

A I think the fact we are seeing increased

angulation there, we are seeing an increase in probably what now is becoming a disc osteophyte complex here. It means that there is an active process at the C-4-C-5 level. It appears a little bit worse than it did on the earlier study as the patient remains and gets more symptomatic, and it is a manifestation of the process that began with the accident and is progressing.

Q Is it fair to say that more discal material is apparently herniated or outside where it should be

in this August '04 study as opposed to the 6/18/03 study?

A It appears that that is true. And again, it is difficult on strictly an MRI scan to differentiate between just disc and disc osteophyte, but it appears especially at C-4-5 that there is a degree of increase in the pathology especially of the foramen with narrowing of the neural foramen.

Q Now, is that progression of the extrusion of the disc material, is that consistent with your opinion concerning that this accident caused the disc herniation at C-4-5?

A Yes.

Q Share with us how that is.

A Well, the evidence that we see from the first study is that there was an injury, and it seemed to be most acute at C-4-5. And then we talked about the possible change at C-5-6, but the C-4-5 appears more acute. That level seems to be progressing more than the C-5-6 level. Again, giving credibility to the fact

that that was injured, it is now getting worse over time.

Q Doctor, we are going to be done with the shadow box for a second, but I am going to ask you, with the Court's permission, to still stay down because

I am going to be using the model.

After you reviewed the films of Mr. Klein and conducted the the physical exam and took the history --

A Keep going.

Q -- did there come a time --

THE COURT: Let's hit the other light, please.

Q -- that you discussed with him what you believed the nature of his problem was?

A Yes.

Q Can you share with us what you discussed with Mr. Klein?

A Shall I stay here, sir?

Q Yes, sir.

A I felt that the patient suffered from disc pathology at C-4-5 and C-5-6. I felt that that was the cause of the discomfort that the patient was having, although I did suggest that the patient have further evaluation by an orthopedic surgeon to make sure that the shoulder discomfort was not coming from the shoulder primarily.

There is always a little overlap in symptoms. The C-4-5 disc commonly compresses the C-5

25 nerve root. The C-5 nerve root serves the region of

1 the shoulder, so if you irritate that root you will get
2 shoulder pain. But a patient who has trouble moving
3 the shoulder and who is said to have some abnormality
4 on shoulder MRI scan may also be deriving some symptoms
5 from shoulder pathology.
6 So as I discussed with Mr. Klein at the
7 time, I felt that there was significant pathology in
8 this cervical spine at C-4-5 and at C-5-6 to explain
9 the neck position, the neck pain and the discomfort
10 into the arm. I did, however, want to have an opinion
11 again from an orthopedic surgeon saying I don't think
12 the shoulder is a major contributor.
13 Once we had that discussion and if that
14 issue was cleared up, then I think an option in terms
15 of treatment would be to have an operation on the neck
16 to relieve pressure on the nerves at both the C-4-5 and
17 C-5-6 level, and that that specific operation would be
18 an anterior, coming from the front of the neck,
19 cervical discectomy, scraping the disc material out to
20 a very significant degree, interbody fusion by putting
21 a bone plug in where we scrape the disc out, and
22 anterior plating, putting a cervical plate on the
23 spine.
24 Q At some point after your initial consultation
25 with Mr. Klein was the issue of the shoulder

1 contributing to this pain syndrome, was that clarified?

A I did request that Mr. Klein go back for orthopedic evaluation, and it was decided on that consultation that there was no major contribution and no pathology that warranted any specific treatment with reference to the shoulder.

Q At some point did you have a discussion, in addition to what you just told us about how the procedure is performed, with Mr. Klein about the procedure, its risks and its hoped-for benefits?

A Yes.

Q Can you share with us the sum and substance of that discussion?

A I told the patient that I felt that there was a reasonable probability that the discomfort and trouble he was having with the neck was coming from the pathology at C-4-5 and C-5-6. I felt that there was a reasonable probability that performing the surgery would, number one, relieve pressure on the nerve and, number two, diminish the amount of the patient's pain to a significant degree, to a point where I like to be able to say to the patient -- 80 percent of patients who have this operation say they are happy they had it. That doesn't necessarily mean that a hundred percent of the pain is gone because that is not usually the

outcome, but that there is enough pain relief so they can say it is not an issue in my life, I can get back to normal now.

Q Sir, did you discuss any risks that might be associated with the surgery?

A I would discuss with every patient with this type of operation a number of risks: You are having an operation, it involves an incision in the neck, it involves dissection past a number of important structures, including the trachea or the breathing tube, the esophagus or the swallowing tube. We are near the region of the vocal cords, we are near the carotid artery, we are near, when we take the disc out, the spinal cord and the nerves that are exiting the spinal cord. It is possible to damage any one of those structures.

It is also possible to develop bleeding in the wound which would cause something called a hematoma. If it is big enough, it could compress the breathing or the swallowing tube. It might even require reoperation. There is also a risk in any operation of infection, and that's a possibility we have to deal with.

So those probably are the major complications that I talk about, which run from

something very minor to the loss of all neurological function. So it is a pretty broad spectrum.

Q The loss of all neurological function in layperson's terms, that means paralysis?

A Would be paralysis, yes.

Q I want you to assume that there is going to be testimony in this trial from Mr. Klein that he was afraid of paralysis prior to this surgery being performed.

Is that consistent with any discussions you had with him?

A Well, it certainly was part of the discussion, that there is no way I can talk to any patient about this operation and avoid saying that one of the potential though incredibly uncommon risks would be paralysis.

Q So it is not common but it is possible.

A Yes.

Q Sir, did there come a time after this first consultation with Mr. Klein that a decision was made by him to go forward after discussing it with you?

A Yes.

Q And does your chart indicate whether that took place during an office visit, or during a telephone consultation or something else?

A Well, we had discussed the surgery on our first visit, and then there was a phone consultation that I had with the patient, at which time we again discussed the surgical procedure. And I am not sure if at that time or sometime between then and when we performed the surgery he made the final decision to go ahead.

Q Sir, I want you to assume that in evidence there are records from a Dr. Shiau, a Dr. Klein and a Dr. Bitan, all spinal surgeons, indicating that Mr. Klein needed surgery. Would you agree with those gentlemen?

A Yes, I would.

Q Sir, did there come a time that you performed the surgery upon Mr. Klein's cervical spine?

A Yes.

Q And, sir, where did that surgery take place; at what hospital?

A At Roosevelt Hospital on Tenth Avenue in New York City.

Q Sir, during the course of that surgery, was anesthesia administered to Mr. Klein?

A Yes.

Q What type anesthesia, sir?

A General endotrachial anesthesia, meaning the

patient was completely asleep, he had a breathing tube going down into his lungs and we had him under completely controlled ventilation.

Q Sir, can you share with the jury, first utilizing the model in front of you, what you did during the surgery, and then we are going to look at some postoperative films to show the hardware, sir.

A Yes. The operation, as I think I started to say, involves an incision in the front of the neck. That's the anterior component. That's through skin. And there is a layer of muscle called the platysma muscle which runs under here.

Once we are through that we actually use mostly blunt dissection to find an anatomical plane where we push the sternocleidomastoid muscle, which is a big muscle in the trachea and esophagus, to the middle and to the side, so we are basically creating a

tunnel which is almost in the midline -- it is a little bit off the midline -- so that we have a good view of the anterior portion of the spine.

Q Anterior means front; right?

A Front. Correct.

We take x-rays with a little marker on the skin before we start and another x-ray with a marker right on the spine to be sure we are at the

correct levels. Once we get to and identify the correct levels to C-4-5 and C-5-6, we have a pretty good view of those, we put a special retractor in that holds the muscle off to either side. So I am looking straight in and just a little bit off to the side of these bones.

The procedure then is to make an incision into the front of the disc, to remove disc material with an instrument called a pituitary ronjeur, which is a little biting instrument that varies in size from one millimeter up to five or six millimeters, so that we start to remove superficial disc material.

There is also always a little lip called an osteophytic lip in front of the spine that we have to drill away so that we can open up the full space in the disc. Now, when I am talking about opening up, this is a tight space. It is three or four or five millimeters, which is very narrow. Once we have done the superficial work, we then put a pin into the C-4, C-5 and C-6. We may do C-4-5 and then do C-5-6, but we put those in to allow us to use a special device

called a distraction device to increase our view, to open up the space a little bit more. And, again, I am talking about opening it up from maybe three or four millimeters to five or six millimeters. So it is

not a huge difference, but when you are operating it does make a difference.

Q Kind of like using a jack to increase the space?

A It is a little gross, but yes. More or less like that.

Q Sorry about the gross. Somebody should object then. Sorry.

A Once we have that space opened and once we have the superficial disc material removed, we then bring an operating microscope into the field, and that gives us very high magnification.

Through the microscope we scrape the disc material from front all the way to the back so it -- I will give you a -- this is the front. We want to get back here because the nerve roots are back there (Indicating).

And as we do this we are guided by our view through the microscope, and we know when we get to the back of the vertebral body we then scrape out any material that is herniated or any bony ridge that is pushing into the space where the nerve roots and the spinal cord run. We extend it out to the side in either direction to make sure these neural foramen are opened up.

Now, we are limited obviously in how much we can do. I mentioned much earlier there is this red structure called the vertebral artery. If you push out too far you can damage that and cause tremendous bleeding and possibly a stroke. So we are obviously limited in just how agressive we can be, but we can through the operating microscope get far enough back to feel we have taken the pressure off the nerves and the pressure off the spinal cord.

We then want to perform the fusion portion of the operation, and to do that we measure -- this may be five, six or seven millimeters. We measure with a little sound or measuring device exactly how big it is. Then we will go to a bottle of prepared sizes and say, okay, I need a six-millimeter bone graft, for example. We will take that out, we will soak it for awhile in antibiotic solution and then coat it with another substance to promote fusion, and then gently tap it into the space where we removed the disc.

Q Can we take a step back for a second? The disc is removed as best you can remove it; correct?

A Yes.

Q And then you take, you said, a bone graft. Tell us where that comes from, the bone graft.

A We use something called an allograft, which

is from somebody else.

Q It is a cadaver bone?

A Basically a cadaver bone.

I should mention that once we remove the disc, part of removing the disc intentionally involves roughening up the surface of the bone. We have taken soft tissue out and basically we are now looking at bone on bone. So that one of the things to promote the fusion would be we roughen up the endplate, which is the surface of the disc, to promote the fusion. We then place the bone in and gently tap it in with a little mallot and a little tapping device so that it sits between C-4 and C-5.

We then release that distraction so that it clamps down tightly. We then push on it and make sure it is in good position. We then repeat the same process at the level below, C-5-6, and do essentially the same thing. When we are done, we feel secure that we have taken the pressure as much as we can off the spinal cord and the nerves, we again roughen up the endplates, measure again, take another piece of bone out of the bottle, another piece of cadaver bone, and tap it into position.

Once that's all in position, we want to further stablize it. We want to prevent the

possibility of the bone popping out of position if the patient moves their neck too far. We want to eliminate the need for the patient to wear a collar for three months to prevent motion.

Q A couple of questions. I need to stop you

for a second. I am sorry.

Once you take out that disc, can it grow back?

A The disc itself can't grow back.

Q You roughened up the bone. Why do you roughen up the bone?

A I mentioned that is to promote a little bit of bleeding on the surface of the bone. That is said to improve the probability of fusion.

Q Story to interrupt, Doctor. Please proceed.

A So we are back at the point where we have two bone plugs in. They are sitting nicely. We pushed on them to make sure they are not going to move. And then to secure that construct, to eliminate the probability of bone pushing out, to increase the probability of fusion, we use what's called an anterior cervical plate. It is a little plate that runs from the vertebral body above the disc we have taken out to the vertebral body below the second disc. We then secure that in position with two screws above, two screws

below, one or two screws in the center.

Q Sir, I am going to show you 27 in evidence and ask you to please tell the jury what we are looking at, sir.

A This is an AP or front-to-back x-ray of the neck of Alison Klein dated 7/27/05.

Q That is the date of the surgery; right?

A I think that is the day or the day after surgery. I can't recall.

And what we are seeing is -- this is a big blowup. The plate is really much smaller than that. But it gives us a good view. We are seeing a metal plate that is made out of a substance called titanium. That runs from the C-4 across the C-5, down into the C-6 body. You can still see the disc space at C-4-5 and C-5-6. We can't on this really see the bone graft. One screw, one screw, one screw, one screw and then a single screw in the middle.

So this is a front-to-back view of the plate that was put in position at the time of surgery.

Q Sir, let's turn our attention, please, to Plaintiff's 28, and I am going to ask you, sir, can you see the bone graft any better in that view?

A Yes. This is a lateral view of the cervical spine and this is front, this is back. This is the

back of the skull. He was wearing glasses at the time; that is what that is. And we are seeing the cervical plate, this metal plate. Again, remember, this is magnified.

And we are seeing a bone graft sitting between C-4 and C-5. If you look at the disc space there, there and there, it looks a little different than that. There is a piece of bone there and there is a piece of bone in there. We can see at C-5-6 a little bit of a line. That is pretty common because the bone never sits 100 percent against the bone plate. But it is designed to fill that gap, maintain the height.

Actually, we have gotten kind of a nice

improvement or straightening of that lordosis we were talking about. So this is exactly what we like a postoperative x-ray to look like.

Q The plate that is in Al's neck is running, using my own throat, like right down along the front (Indicating)?

A Yes. Well --

Q Or is it to the side?

A It is behind the -- pushing on your trachea, it is behind the trachea and esophagus. So the skin is here, the trachea and esophagus are sitting there, and then there is the endplate (Indicating).

Q The screws that you used, sir, it looks like they are going right into those vertebral bodies, the bone. Is that correct?

A That is correct.

Q So you screw them. What do you use to get them in; a drill?

A No. We use what is called a self-drilling screw. So the bone is first taken -- we first take an awl, and with the plate sitting there we make a hole into the bone with the awl, and then we use something called a self-drilling screw and screwdriver and we literally just screw it in. The plate has a little catching or popping mechanism so we know it is secure.

Q Is this known as a two-level or three-level fusion surgery?

A Two-level fusion.

Q It is a two-level fusion but there are screws

going into three levels of bone. Is that fair to say?

A That is correct.

MR. O'TOOLE: You can have a seat, sir.

THE COURT: How much more do you have?

MR. O'TOOLE: I probably have another 30 minutes.

THE COURT: We could probably use a break for the jury.

Jurors, why don't we take ten minutes at this juncture. Thanks.

(Jury leaves courtroom.)

(Short recess taken.)

oOo

(Jury enters courtroom.)

MR. O'TOOLE: May I, Judge?

THE COURT: Yes.

MR. O'TOOLE: Thanks.

Q Doctor, after the surgery you followed Mr. Klein in terms of how he was doing; correct?

A That is correct.

Q Can you share with us how his postoperative course was while in the hospital?

A I don't recall anything unusual about the postoperative course in the hospital. I think there was a little nausea and vomiting, but probably related to anesthesia. I don't recall any specific event that stands out in my mind at this time.

Q And after a short period of time he was discharged from the hospital; correct?

A Yes.

Q If the record indicated that he basically stayed overnight and then went home, that would be commensurate with your experience with this type of

thing? That would be pretty normal?

A Yes.

Q Can you share with us how it is someone who had neck surgery -- would you consider this major surgery?

A Yes.

Q Can you share with us how it is someone who has neck surgery can walk out within a couple of days of the surgery?

A Well, I think the answer is that if the patient's comfortable enough to go home and feels they can care for themselves at home, we let them go.

One of the things I mentioned is that we put a plate in, a metal plate, and that artificially gives him an immediate degree of stability to the spine. The actual incision in the skin is sore and it is felt as sore, and the problems that the patient has postoperatively might include a little hoarseness and a little bit of trouble swallowing because of things that are put on, but usually they say I can go home.

I am not one to say get out of here, we are done with you. And if they say, gee, I am sore, let me stay another day, I let them do that. But most patients with this type of surgery go home day one after surgery, and the rest of them usually go home day

two after surgery.

Q And they're made comfortable in part by narcotic medications; correct, sir?

A Yes.

Q On oxycodone or something like that?

A Yes. That is a narcotic analgesic. It is basically the major component of Percocet.

Q Sir, after Mr. Klein was discharged from the hospital, did you come to see him at your office at some point?

A Yes, I did.

Q Can you share with us when you saw Mr. Klein for the first time in your office after the surgery was?

A It was on August 17th or August 18th, one of those two dates.

Q Can you share with us how Mr. Klein was doing at this time, sir?

A I felt that he was doing well. He still had discomfort. He was taking Percocet four times a day, which I felt was going to be something we had to slowly taper off as he had been on it for some time. But there still was a good deal of neck stiffness and discomfort of that nature. But I felt basically for three weeks after surgery the patient was right on

schedule.

Q Now, when you saw Mr. Klein for the first

time, was he -- he was working prior to that time; correct?

A I am sorry. When you say?

Q When you saw Mr. Klein for the first time, he was working as an attorney; correct? The first time ever. April '05.

A Yes. Yes.

Q And when you saw him postoperatively for the first postop visit on August 18, 2005, had he returned to work yet at that point?

A I did not mention it in my note. I know by the next time I saw him he had -- I am not sure if he had by August 18th.

Q Sir, I am going to refresh your recollection, the August 18th, 2005 note which is in evidence where it says you have asked Al to start doing a little work, and I am hoping by the week after Labor Day that he would be able to return to full activity, including going to court, etc.

A Well, that refreshes my memory that he probably hadn't started working yet.

Q But you were encouraging the patient to try to get back into it?

A Yes.

Q So at that point you are happy with the surgical result; correct?

A Yes.

Q Did you continue to follow Mr. Klein after that point?

A Yes.
Q And can you share with us the next time you saw Mr. Klein?
A The next notation I have is September 7th 2005, which was approximately seven weeks post surgery.
Q Now, I forgot to ask you, Doctor. When you discharged Mr. Klein from the hospital, was he given any kind of apparatus for his neck?
A I don't usually send the patient home with any collar, but he may have been sent out with a cervical collar. I don't recall specifically.
Q How was he doing on September 7th when you saw him?
A He was still complaining of discomfort, though more uncomfortable than he had been on the last visit, but was still noticing limited ability to move the neck. He had tried to go back to work, and after spending several hours in court said he was rather uncomfortable and hadn't tried again. So I think one

or two days he tried to go to work.
Q I think you may have misspoken. Your note I think says that he was feeling progressively more comfortable. Is that correct?
A I thought I said that.
Q I think you said uncomfortable.
A I thought I said more comfortable. I apologize.
Q When he tried to go back to work then he was uncomfortable?

A He noticed discomfort with the effort of going and being in court. Specifically, that made him more uncomfortable during those episodes. Overall, he was less uncomfortable than he had been on the last visit.

Q Increase in symptoms based upon activity, that is something you saw at the very outset of your treatment of Mr. Klein; is that correct?

A Yes.

Q And, sir, did you make any recommendations to Mr. Klein at the time of your September '05 visit as to what type of treatment, if any, he should be undergoing at that point?

A Well, I suggested that it would be appropriate to start physical therapy to be taught and

to partake in some range of motion exercises and neck strengthening exercises.

Q Did you order any studies at that point, sir, relative to the C-spine only?

A I suggested that when the patient return on the next visit, sometime between that visit and the next visit a set of plain x-rays of the neck be done.

Q Okay. And when was the next time Mr. Klein saw you after that September '05 visit, sir?

A I have a notation in my chart of October 12, 2005. I have handwritten notes. And it is just a sentence that says "left side better." I don't find a typewritten note that corresponds to that, but my record would indicate it was October 12, 2005. Other

than what I just read to you, left side better, I don't have any recollection of that visit.

Q Sir, did there come a time you saw Mr. Klein after that visit?

A Yes. The next visit was on January 4th, 2006.

Q Can you share with us -- and that is some months; right? You got a bunch of months that passed there?

A Let's see. We are talking October. Three months.

Q How was Mr. Klein doing at that point, sir?

A He noted at that time that the pain on the left side -- we talked about the radiation to the shoulder -- had largely resolved, but he was noticing some discomfort on the right side, and I felt that this could represent some degree of root irritation. But because of that I sent the patient or I suggested that the patient undergo a new MRI scan, as well as x-rays of the neck.

Q And did he undergo those studies, sir?

A Eventually I believe he did. I don't have them right in front of me.

Q Now, at that point, sir, on January '06, we are now about six months postop? Is that correct, sir?

A Remind me of the date.

Q 7/26/05 is the surgery.

A So that is, yes, six months postop.

Q At that point, taking a snapshot in time,

were you happy with the operative result?

A I was concerned, as I mentioned, with the onset of pain on the right side, and I expected by six months post surgery there would be significant improvement if the surgery had achieved what we wanted to. So I was obviously concerned and felt that we should continue to monitor the patient closely.

Q Is that what you did, sir?

A Yes.

Q Can you share with us when you next saw Mr. Klein?

A I next saw the patient on... Let me just coordinate these two. I am sorry. March 6, 2006.

Q Can you share with us, sir, what your examination revealed at that time?

A The patient was complaining of a lot of neck discomfort, more than I would have anticipated. It was made worse both by flexing the neck and extending the neck. The patient again was really limited by neck pain at that time.

Q Sir, is there any notation concerning spasm at the time of that March 6, 2007 visit? Reading from a document in evidence, "paraspinal spasm and limitation of motion in the neck secondary to pain observed."

I am reading from a document dated March 7, 2006.

A I am sorry, I don't have that in front of me.

MR. O'TOOLE: Can I approach the

witness, sir, just to speed things along?

THE COURT: Yes, you may.

MR. O'TOOLE: This document is in

evidence.

A I apologize.

Q No sweat, Doctor (Indicating.)

A Okay. There is a notation, yes, on a March 7 report that I noted --

MR. TUMBARELLO: May I see this?

MR. O'TOOLE: It is in evidence.

MR. TUMBARELLO: I would like to see what the doctor is reading from just for a second because I have the same records that the doctor was talking about.

(Short pause.)

MR. TUMBARELLO: Now I know what we are talking about. Thank you.

MR. O'TOOLE: Part of the disclosure from March of '06.

MR. TUMBARELLO: I just wanted to know what we were looking at. Just give me a second so I can follow along.

MR. O'TOOLE: Whenever you are ready, sir, just let me know.

Q Sir, before you said spasm is a way of the body protecting itself; right?

A It is a way of the body protecting itself, yes.

Q Can spasm be faked, sir?
A It can be but it is difficult.
Q Is it considered in neurosurgical medicine to be an objective sign?
A Yes.
Q Sir, I want you to assume that in evidence in Plaintiff's Exhibit Number 9, that is the Staten Island University Hospital record, Plaintiff's Exhibit Number 11, Dr. L'Insalata's chart, Exhibit Number 12, Dr. Turke's chart, Exhibit Number 13, Dr. Giannone's chart, Exhibit Number 14, Dr. Perel's chart, Exhibit Number 15, Dr. Reilly's chart, Exhibit Number 16, Dr. Klein's chart, that there are indications of muscle spasm.
Would that be significant to you, sir?
A Yes, it would be.
Q Would it be consistent with your examination on March 6th and on other dates of Mr. Klein?
A Yes.
Q Fair to say that spasms can come and go, sir? You might have a spasm on March 6th and the next day you might not have one; right?
A Correct.
Q Sir, did you have any concerns or any growing concerns about Mr. Klein's recovery from the surgery by

the time the March 6th examination took place?
A Yes, I did.

Q Can you share with us what those concerns were, sir?

A The type of complaints that were offered by the patient made me concerned that the patient did not completely fuse in the neck. And there is a term we call pseudarthrosis, which is a way of saying that the bony fusion that we attempted to achieve did not occur.

Given the complaints that the patient was making, I felt that we had to look into this as a possible cause of the problem.

Q Did there come a time, sir, that you ordered diagnostic studies to illuminate that suspicion further?

A Yes.

MR. O'TOOLE: I would like to, with the Court's permission, use the easel and show the jury Plaintiff's Numbers 30, 31 and 32 in evidence, which are CT CAT scans taken on July 28th, 2006. And with the Court's permission, I invite the witness down into the well again.

THE COURT: You may proceed.

MR. O'TOOLE: Thank you, sir.

Q Doctor, I am going to ask you when you get

down here to please put these in the order that would best aid the jury in your explanation because I don't know what order is best.

A I think any one of them would serve fairly well. They all pretty much show the same thing.

So I am putting up Plaintiff's

Exhibit 30. This is a CAT scan of the patient.

I think I mentioned earlier that one of the advantages of the MRI scan is that we can get sections or slices in a lot of different directions. The CAT scan is actually limited in that we can only do cross-sections of the spine. Having said that, this is not a cross-section of the spine chopping off like this, it is actually a similar picture to the one we saw with the MRI scan.

So how does a CAT scan become this? What happens is that the patient undergoes multiple cross-sections. Every millimeter they do a slice, and then the computer has the ability to reconstruct that into this type of picture, this so-called sagittal section (Indicating).

So what we are seeing are slices very similar to what we saw on the MRI scan. This is not a direct reproduction of the image that the CAT scan obtains but a computer reformatting. They take a stack

of, you know, as I said, one millimeter for this distance, however many that is, and they are able to reproduce it into evidence.

So what we are seeing here is what looks like an x-ray, what looks like a CT scan, but it shows the bone very well. The bone, the cortex of the bone or the outer edge, is the white. The slightly darker is the marrow or the softer part of the bone. And we are going to look at this area which is C-4, C-5 and C-6.

If we look from the side at this image we see that very dense white object, and that's the plate that we looked at on the plain x-ray.

Q For the record, we are looking at the third image to the right, sir; correct?

A That is correct. We see a screw fairly well on this. We are not going to see the screws and the plate like we do on an x-ray because the x-ray, as I mentioned, is a summation of everything that the beam is passing through. This is just one slice.

So you don't see a screw here, but you see it here because this is the reconstructed slice and this is the screw. We are seeing the plate because it is fairly wide. So you see that on multiple images.

The next thing we are looking at is the

space between the bones. These are the discs spaces that have been untouched. This is the space between C-4 and C-5. And we saw on the plain x-ray the bone plug that was put in there. Well, it is very difficult to tell the difference between C-4, the bone plug, and C-5, and that is the appearance we like to see when we have the fusion. So that tells me that based on this film there is a high probability of fusion.

There is a little low density or what we call hypodensity there, but we don't see it as much here. So I think that if I saw this alone I would say there is a very high probability, based on the x-ray, that there is a fusion there. Unfortunately, we can never be a thousand percent sure until you actually

look at it, but I would be fairly comfortable with saying that is fused.

Now, I am going to point out the space between C-5 and C-6. I think you could see a dark line going across on almost every image here. And it is true on the other images too. That dark line tells me that it does not look like there is a fusion there.

This is very consistent with a so-called pseudarthrosis. The bone is either partially reabsorbed either on the top, or it looks more likely as though the bottom part just hasn't fused, hasn't

grown together. So this is consistent with the pseudarthrosis between C-5 and C-6 and consistent with what appears to be a solid fusion between C-4 and C-5.

Q Doctor, can I ask you to please circle on the images for us across the board where the pseudarthrosis is demonstrated by these films.

A I am going to put a five and a six sideways.

Q Can you put your initial next to that, sir, too for the record?

A All four images?

Q All four, sir.

(Witness complying.)

Q You can resume the stand, sir.

Sir, can one of the things -- I forgot to ask you before, and I apologize. Do you have an opinion, within a reasonable degree of medical certainty, as to what the cause of the surgery you performed upon Mr. Klein on 7/26/05 was?

A Yes, I do.

Q And can you share with us what that cause was, sir?

A The motor vehicle accident that the patient was involved in in May of 2003.

Q Sir, the pseudoarthrosis we have now just seen on the CT scan, do you have an opinion, within a

reasonable degree of medical certainty, as to what the cause of the surgery and then the resulting pseudarthrosis was? And I am making reference to the accident of May 20, 2003.

A I think it was all related to the accident of May 2003.

Q Pseudarthrosis, sir, is that a known potential outcome from a cervical fusion?

A Yes, it is.

Q And it happens in a certain number of patients; right?

A Correct.

Q Is it a rare -- would you call it a complication, or what would you call it?

A I guess you have to call it a complication because it is not what you want to have happen. So, yes, I think complication fits.

Q But it is not a common one; it is rare. Correct?

A Correct.

Q Now, sir, after looking at that CT scan, did you talk to Al Klein about what it showed?

A I think all along the way I shared with Mr. Klein my concern about the pseudarthrosis, and I am sure we specifically reviewed that, and I think I said

it kind of substantiates what I think is going on.

Q Did there come a time, sir, that you suggested to Mr. Klein that he undergo any type of treatment to potentially cause the fusion to take or help the fusion take?

A Yes.

Q Can you share with us what that is, sir?

A I suggested that the patient use something called a bone growth stimulator. A bone growth stimulator is a little Sony Walkman-size box attached to wires, and two pasties are stuck on the skin in the region of the bone we want to heal. It is very commonly used in long bone fractures to encourage healing or fusion. And it has been shown in the literature and in my own experience to actually cause a pseudarthrosis to heal.

So I made that suggestion as potentially a treatment that might improve the situation by encouraging healing of the pseudarthrosis.

Q Can you share with us, sir, the frequency with which you suggested to Mr. Klein that he wear the bone stimulator?

A The frequency is really suggested by the stimulator manufacturer, and it is suggested that the patient wear it twenty-four seven, if possible. Just

wear it all the time. Most patients don't do that. It is just too inconvenient. But they try to wear it as much as possible.

Q In your experience as a neurosurgeon, having prescribed the bone stimulator, have your patients shared with you whether or not that is a pleasant or unpleasant feeling?

A It is really a variable answer. Some patients say I can wear it all the time, it doesn't bother me, some people say I sweat too much, it falls off, it bothers me. I don't think it is terribly unpleasant so much as inconvenient.

Q Now, we have talked about what pseudarthrosis looks like and what it is. Can you share with us what the symptoms of pseudarthrosis have been for Al Klein?

A Well, I think we talked about the symptoms that the patient had leading up to my suggestion of the CT scan, and that those are the symptoms. It is basically progressively worsening neck pain.

Q Did the bone stimulator work for Al Klein? Did it make the fusion happen?

A It did not appear to do so.

Q And you know that from how, sir?

A Subsequent studies that show that the pseudarthrosis was still there, as well as continuing

complaints by the patient, which is the main thing.

Q Sir, there came a time, I believe, in 2007 that you ordered additional CT scans of Al Klein, and

those would be dated June 18, 2007. Is that correct?

A I believe that is correct, yes.

Q And that confirmed the same pseudarthrosis that we see in the films in evidence?

A That is correct.

Q Any significant change or notable difference in those films of June '07?

A No.

Q We discussed showing them to the jury today?

A Say it again?

Q These June '07 films, you don't have any problem showing them to the jury?

A I would be happy to, if you like.

Q Do they show anything different than the '06 studies?

A No, they don't.

Q Other than the bone stimulator, did you make any other treatment suggestions to Al Klein about how he might be helped from a clinical standpoint? That means from his pain.

A I made a suggestion that might be a little bit of help clinically and also help diagnostically. I

suggested that the patient see a pain management physician to have specific blocks at the region of C-5-C-6. This can be done with a local anesthetic to temporarily numb the area, it could be done with steroid medication to try to treat the area.

He had this done, and it gave him temporary relief when he had blocks at C-5-C-6 which

strengthened my position that this was the cause of a significant part of his pain. It didn't give him any long-lasting relief, however.

Q Facet blocks, that is an injection into the space between the bones; right?

A I would rather show you on the spine, if you want.

Q Okay, sir.

MR. O'TOOLE: May I please approach the witness?

THE COURT: You may.

Q I don't want to cause you to come down too long, sir. Can you show us with this?

A The facet joint is one of the moveable joints in the spine. We talked about the disc allowing motion, but there is a facet joint on each side that is also surrounded by a capsule and actually has sensory nerves in it.

The object of the facet block, which is the type of injection that was done, is to numb up that facet on each side between the fifth and sixth. When we have a pseudarthrosis we know there is motion and that motion is causing irritation, so that the object of the facet block is to try to relieve the irritation temporarily by doing an injection.

And as I said, it gave us more diagnostic information, that it is the C-5-6 that is causing the problem, rather than really any theraputic benefit or any long-term benefit in terms of the pain.

Q Doctor, did they work?

A They worked temporarily, as I said, to relieve the pain. So they worked from the diagnostic point of view and in strengthening my position that that was the origin of the pain, but they did not work long-term and didn't really eliminate his discomfort.

Q Now, you gave that suggestion. He followed through with it at a time when he was already taking narcotic medications; correct?

A Yes.

Q I want you to assume there is going to be testimony and there is going to be evidence introduced at this time in this trial that virtually from the point of the accident until today Mr. Klein has been

prescribed and has been taking narcotic medications. Can you assume that?

A Yes.

Q Is that consistent with the history that you have been told by Mr. Klein and the records you reviewed?

A Yes.

Q Pain meds aren't working, narcotic meds, this doesn't work. What do you try next? Did you make any other suggestions to Mr. Klein from a nonsurgical point of view?

A Well, I think one way of treating this is just with pain medication to see if the level of medication can be found that relieves the pain sufficiently and allows the patient to function.

Another thought might be further treatment by pain management, a variety of other types of injections they might try to do.

So from the nonsurgical view, those would be the two main theraputic attempts. Limiting activity, of course -- if it hurts, don't do it -- would be the other.

Q Sir, I am going to approach you with Plaintiff's Exhibit Number 16 in evidence, which is -- I am sorry, Number 20 in evidence, which is

Dr. Pathare's chart. Do you know who he is?

A Yes, I do.

Q Did you recommend Dr. Pathare to Mr. Klein?

A I believe I did.

Q Is he the gentleman that performed the facet blocks?

A Yes.

Q Did Dr. Pathare also perform what is called rhizotomy upon Mr. Klein?

A I believe that is correct.

MR. O'TOOLE: I would like to approach the witness with the evidence.

THE COURT: You may.

Q Sir, can you please tell us -- and if it helps you to use this photograph in evidence that's dated 4/25/07 -- what a rhizotomy procedure involves and how it is administered?

A I mentioned that the facet joint that I pointed out on the model has little nerves in it.

Rhizotomy is a procedure in which you burn those nerves. It is performed pretty much the same way the injection is. It is literally a needle under x-ray control put at the facet joint, but instead of injecting some local anesthetic you administer a current, the object being to try to actually -- I will

use the term kill the nerve at that level.

The rhizotomy will burn the nerve, it will electrocoagulate the nerve -- they are all the same term -- the hope being that if you effectively eliminate any sensory sensation input from that nerve that it will relieve the discomfort in the patient.

When it is done -- we know the nerve eventually grows back. It may be two or three months or six months. When it is done, the procedure may not have any effect at all.

MR. O'TOOLE: Your Honor, I would like to briefly publish to the jury by walking by them an original photograph contained in the chart of Dr. Pathare (Indicating).

Q And, sir, the instrument on the right over here, is that the thing that goes into the space to burn?

A Yes. It looks like the electrocoagulating probe, yes.

Q And, sir, having spoken to Mr. Klein after the surgery -- I am sorry, after the rhizotomy, did it help?

A No.