

New York Law Journal

November 3, 2003, Monday

**SECTION:** NEWS; Pg. 3

**HEADLINE:** Trial Advocacy;

The Cross-Examination of the Radiologist in a Soft Tissue Case

**BYLINE:** By Ben B. Rubinowitz and Evan Torgan; Ben B. Rubinowitz is a partner at Gair, Gair, Conason, Steigman & Mackauf. He also is an adjunct professor of law, teaching trial practice at Hofstra University School of Law. Evan Torgan is a member of Torgan & Cooper. He is an adjunct professor of law, teaching trial practice at Benjamin N. Cardozo School of Law. Richard Steigman, an associate at Gair, Gair, assisted in the preparation of this article.

**BODY:**

There is no more crucial piece of evidence during the soft tissue injury trial than magnetic resonance imaging. An MRI differs from an ordinary X-ray in that it allows the examiner to see more than just bones: in back cases, it shows the actual spinal cord, discs and nerve roots; in knee cases it reveals articular cartilage, menisci and ligaments. Therefore, effective cross-examination of the opposing radiologist is critical. This task may seem intimidating, but with proper preparation, a good grasp of the anatomy and a thorough understanding of radiological studies, the trial attorney can make great strides towards convincing the jury of the virtue of his case and the seriousness of the injuries.

Pretrial Preparation

Thorough pretrial preparation is essential. First, learn the specific anatomy involved in the case. One of the easiest ways to do that is to peruse medical artist Dr. Frank H. Netter's [a medical doctor] Atlas of Human Anatomy, which contains authoritative drawings of the human anatomy. It will easily teach you the general anatomy and allow you to take the first step in reading the actual MRIs.

The next step is meeting with your expert to give you a cursory review of how the anatomy looks on the specific radiological studies. That is a good time for her to point out the abnormal findings on those radiological studies and have her mark them with a red grease pencil. The next step is to procure and read some textbooks, both major and minor, in the field of radiology to give you a greater bank of knowledge in the field. One such text is Michael T. Modic's Magnetic Resonance Imaging of the Spine. By comparing the relevant films for your case with examples of similar pathology in medical texts, you can actually get a firm handle on the pathology shown on your studies.

It is also helpful to learn as much as you can about your opposing expert. Perform a jury verdict search on her. Determine the amount of times she has testified, the types of cases in which she has been involved, and see what her past diagnoses have been involving allegations of similar injuries. The verdict

search should lead you to the relevant transcripts. As is true with all experts, finding transcripts where she has testified on the opposite side of the issue would be incredibly helpful. For example, in most soft-tissue back injury cases, the defense says the disc is merely bulging, while the plaintiff says it is herniated: the defense taking the position that bulging discs are caused by long-standing degeneration caused by aging and that herniations are caused by acute trauma. It is certainly helpful getting a transcript of a defense radiologist previously testifying for a plaintiff that his bulging disc was causally related to the traumatic accident in question.

### Enlarging the Studies

One thing we have learned is that jurors can actually be taught to read these studies during the course of the trial. When science is on your side, why let the jury decide the case based upon the charm, looks or credentials of the battling experts? Instead, show the jury that your client truly does have a herniated disc. To do this you must enlarge the studies for the jury to see. Blow up the individual images to 30 inches by 40 inches. Long before cross of the radiologist, you should have had your radiologist or clinician show them to the jury on your direct case, going through the normal anatomy on a model and then demonstrating how that disc is herniated. Using those enlarged MRIs on cross, however, is even more compelling.

Using enlarged versions of the MRIs can be the difference between winning and losing either on a threshold issue or causation of injury issue. Relying on the small, yet original, version of the study is not enough. Utilizing the shadow box found in most courtrooms will not allow the jurors to see the actual study. The films are too small, the shadow box too dark and the distance from the jury is too great. Moreover, it is too cumbersome to cross an expert utilizing the shadow box. The courtroom logistics are such that the jury, judge, expert and cross-examiner will not be able to focus on the films at the same time, if at all.

### The Actual Cross-Examination

As always, control is the most important part of the cross-examination. Tell the radiologist the answer in your question and get her agreement. Demand responsive answers and do not let her volunteer gratuitous remarks. As part of your cross you must continue the educational process of the jury by instructing it on the significance and mechanism of the MRI:

Q: Now you commented to the jury on direct that you reviewed the actual MRI scans in this case, true?

Q: MRI stands for Magnetic Resonance Imaging, correct?

Q: Which basically utilizes a magnet and a computer to generate an image on a screen or on film right?

Q: And the MRI shows things that a plain film X-ray couldn't possibly show, true?

Q: For example, an X-ray may show an injury like a fracture to a vertebral body, true?

Q: Or it may show narrowing of a disc space, right?

Q: But it wouldn't show whether a disc is herniated, right?

Q: Bulging, true?

Q: Or protruding in any manner, correct?

Q: But an MRI has the capacity to show all those things, right?

Q: As well as compression to any nerve roots or neural structures of any kind?

Q: And together with clinical correlation could show whether a disc injury is causing pain or disability to a patient, correct?

Then show the expert your command of the anatomy to gain both the expert and the jury's respect for your medical knowledge while continuing to educate the jury on anatomy. Get the radiologist to agree that the spinal column runs from the base of the skull to the tailbone or sacrum, that it consists of the cervical, thoracic and lumbar spine, having seven, 12 and five vertebral bodies, respectively. Use demonstrative evidence such as a model of a spinal column and point out the discs, spinal nerves and cord to the doctor and jury. Demonstrate how the discs sit between the vertebral bodies and act as shock absorbers for the spinal column giving us the ability to bend, walk, jump, run and move flexibly. Demonstrate on the model how the discs are numbered by the corresponding vertebral body between which they sit, such as the discs at L1-L2 or L4-L5.

A good technique of crossing the radiologist is to use hypothetical questions based upon the prior testimony of your doctors. Even if he will never concede the herniated disc, you can remind the jury that other physicians gave opinions quite differently. At the same time you can draw the battle lines for the jury:

Q: The disc that we are discussing today is known as the disc at L4-L5, right?

Q: Meaning it is the disc that sits between the L4 vertebrae and the L5 vertebrae?

Q: You know that the plaintiff's doctors feel there is a herniated disc at L4-L5, true?

Q: I want you to assume that the plaintiff's neurologist has testified before this jury under oath that he has reviewed these films and that there is a herniated disc at L4-L5. I want you further, to assume, that the treating radiologist in this case -- not someone who was retained for the purposes of litigation -- has put these films up before this jury and has pointed out that there is, in fact, a herniated disc at L4-L5. I take it you disagree with that testimony?

Q: I take it your position is that both of these treating physicians are wrong?

This is a good time to go to your enlargements of the MRI films themselves. It is important to compare the actual films with anatomical models of the spine so the jury can compare normal anatomy with the MRI films. Through your cross you can demonstrate how there are two primary types of cuts taken by MRI imaging: sagittal or lateral views, which show the side of the spine but with various slices moving

inward to the midline of the spine; and axial views, which are horizontal slices taken from the head down toward the feet. The sagittal cuts are easily compared to the full anatomical model of the spine, while the axial cuts are best compared with small anatomical models that are typically used by doctors to show patient's examples of herniated discs. The easiest views for the jury to grasp are the sagittal views so it is good to begin this aspect of the cross with those cuts. They actually look virtually identical to the side view of the full spine model when they are held side by side. After comparing them and pointing out the vertebral bodies, discs, thecal sac, cerebrospinal fluid, get him to admit at a minimum that by any definition, the disc at L4-L5 is in fact protruding out of position:

Q: There is something known as a protruding disc, true?

Q: Radiologists define those in a certain way, right?

Q: There are differing schools of thought regarding types of protruding discs, correct?

Q: One type is a bulging disc, true?

Q: Another type is a herniated disc?

Q: And obviously there are varying degrees of herniated discs as well?

Q: But a protruding disc is defined as when the disc extends out past the end plate of the vertebral body above, and the vertebral body below, right?

Q: Now I am showing you plaintiff's exhibit 4 in evidence, which is an enlargement of the original sagittal view of the plaintiff's MRI; you'd agree first of all that this is, in fact, a sagittal view of the plaintiff's spine, right?

Q: It was taken one month post-accident according to the date on the top right-hand corner?

Q: As a matter of fact, prior to your testimony you went over these very enlargements with defense counsel earlier this morning?

Q: You'd agree that this shows the L4-L5 disc?

Q: And we know that from counting up from the first segment of the sacrum which would be S1, for sacral segment 1?

Q: So the next level above that would be the disc at L5-S1, true?

Q: Which is normal, correct?

Q: Then we see L4-L5, true?

Q: And you would agree with me, that on this view, of plaintiff's exhibit 4 in evidence, that the disc extends past the vertebral end plate of L4 above, and L5 below [pointing it out to the jury]?

Q: As a matter of fact, these red marks placed on the exhibit by the treating radiologist, outline that very extension by the disc beyond the vertebral end plates above and below?

Q: Which radiologically speaking, means a protruding disc, right?

Q: Which you know all of the plaintiff's doctors have confirmed, true?

If the opposing radiologist does not agree with your point here, it is a very good time to republish the marked enlargement to the jury and ask our hypothetical question regarding your treating physicians' opinions that the exhibit shows a herniated disc.

### Neural Compression

Both sagittal and axial images of MRI studies may show compression of nerve structures, nerve roots, the thecal sac or spinal cord itself. Even if your opposing radiologist does not concede compression of these neural structures, you can still win on this issue. To do so, take him outside his area of daily practice, while technically staying within his area of expertise. One way to do this is to incorporate clinical findings into your cross. If your client's treating physician finds radiating pain, muscle weakness and sensory loss within the distribution of your L4-L5 disc, force the radiologist to concede the "clinical correlation" with the herniated disc.

Q: Although you don't generally treat patients, but read films, you are familiar with the term, "clinical correlation," true?

Q: And often times, with positive findings on MRI or any other radiological study for that matter, you will actual sign off the report to the clinician, "clinical correlation advised," correct?

Q: Because you know that how the patient actually feels is an important factor in making the diagnosis?

Q: And you certainly were involved in residency training involving neurology, true?

Q: As a matter of fact to become a neuroradiologist, by definition you were trained in neurology, right?

Q: So you know with a disc herniation at L4-L5, that will implicate a certain dermatome pattern, true?

Q: That pattern would be within the distribution of the L5 nerve root, correct?

Q: Because a posterior disc herniation on the right side, to a reasonable degree of medical certainty, may compress the descending L5 nerve root, which travels from the low back, crosses over the front of the tibia or shin and travels into every toe but the small one, true?

Q: As a matter of fact, exhibit 2 in evidence, the Netter Dermatome Chart, shows this well, true?

Q: I want you to assume the following is true, doctor: Assume that the plaintiff has told this jury he has constant pain radiating from his lower back down his right leg across his shin and into the top of his foot causing pain and numbness in his four toes. You would agree with me that certainly that clinical picture is consistent with a right-sided posterior disc herniation at L4-L5?

Q: I want you to further assume that his orthopedist and his neurologist have told this jury under oath that he has decreased sensation in that very distribution coming down his right tibia into all of his toes except his pinky toe. You would agree that certainly that clinical picture is consistent with a right-sided disc herniation?

Q: And if that weren't enough, doctor, assume both clinicians found decreased muscle strength of the great toe extensor. You would agree that this is just another clinical finding consistent with a right-sided disc herniation at L4-L5?

Q: If you put all these clinical findings together with these MRI's, you have a severely injured man, don't you?

#### Conclusion

With the proper preparation and technique you can make the radiologist's testimony as effective as if she were your own witness. By making enlargements of the radiological studies, you can demonstrate the correctness of your case directly to the jury. If the studies are clear and unequivocal, don't hide them from the finder of fact. Instead use the opposing expert to underscore the seriousness of your case.