Dynamic Chiropractic

PERSONAL INJURY / LEGAL

Communicating in the Courtroom

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In my experience, one of the primary reasons for the sometimes poor outcomes of our patients in their legal struggle for reasonable compensation following a motor-vehicle crash is the difficulty we have in effectively communicating to juries the nature and long-term effect of the trauma patients have sustained.

Remembering that the first minutes of any testimony are the ones best remembered by a jury, and the fact that pictures are worth hundreds of words, I try and begin my testimony with a graphic representation of the injuries sustained as soon as possible. Visual depiction of the tears and disruptions of the support structures of the spine gives great credence to later testimony about permanent impairment. It may take a bit of searching, but, believe me, utilizing such images is worth the effort in a courtroom.

A concept that can be difficult to fully communicate is that of "permanent functional impairment." Broken bones, frank luxation and herniated discs are more easily associated with impairment in the minds of jurors. More subtle injuries, such as we address daily, are a challenge to describe. However, as one medical text on the subject says in regard to these injuries, "The most significant aspect of traumatically induced bony fractures to the spine is the damage done to the connective and soft tissue structure surrounding it."

I have outlined a hypothetical dialogue between doctor and lawyer at trial, hoping it may be of benefit to you in live court-room testimony. Sharing this dialogue with your soon-to-be questioner (your patient's lawyer) prior to your time on the stand will make their job much easier and help fulfill your duty to the patient.

Doctor, could you tell the jury about the nature of the injuries my client suffered as a direct result of their motor vehicle crash? I believe they have suffered a shearing and tearing injury to the support structure of the spine that resulted in permanently destabilizing the normal function in the (cervical, thoracic, lumbar, pelvic) regions. (Project image of torn or damaged spinal structures.)

Doctor, what do you mean by "permanently destabilizing the normal function?" Let me use my wrist as an example. I use the wrist joint because it is capable of the same kinds of complex movement as almost all of the vertebra in the spine. (Demonstrating with one wrist): Flexion is forward movement, extension is backward movement, side-bending is called lateral flexion, rotation is both left and right, and the most complex movement of all is called circumduction. Now, in the wrist this movement is possible only because of the interaction of six small bones within the structure; in the spine, this complex mechanical motion is carried out between each vertebra, using the disc as a fulcrum or swivel point.

If, because of injury to the muscles, tendons or ligaments I can only move in very limited ranges (again, demonstrating with the wrist) then I have a "functional impairment." In other words, my wrist simply does not work properly any more - we commonly call it a crippling effect. In the months following injury, scar tissue replaces normal tissue, along with a process called fibrosis and adhesion formation, and the condition becomes permanent. Also, excessive laxity may occur, which

allows abnormal slippage of bones in the spine.

The best one can hope to do in such a circumstance is to rehabilitate the joint function as much as possible, and then try and live as best you can with the impairment, which needs regular treatment to maintain the improved motion.

Is there a simpler way to describe this? Yes. The spine simply never functions as it did prior to the injury.

Doctor, what is the basis of your conclusion that there is permanent damage? (Projecting image of an exploded-view normal joint structure): Ligaments are strong, fibrous bands that restrict joint movement to keep the joint within normal ranges of motion. (Demonstrate with index finger.) For example, the ligaments in the front of my finger are short and relatively tight; they restrict motion in this direction (pushing back on the fingers to show lack of movement), while the ligaments on the back of my finger are longer and looser, allowing for normal forward movement (demonstrating with finger flexion).

(Projecting an image of a normal vs. stretched or torn ligament): When stretching or tearing of the ligaments of the spine has occurred, there is always some degree of permanent impairment because, when ligaments are stretched or torn in the spine it destabilizes the joint structure, in some ways like a broken hinge on a door. The door no longer lines up properly with the frame and repeatedly slips out of alignment.

Doctor, what is the long-term consequence of this permanent impairment in regions of the spine, and how does it affect a person's ability to live as they did before the injury? Well, the most prominent aspect of living with such a permanent impairment is that the patient often has to live with chronic pain and restrictions in normal activity, and this pain and debilitation tends to increase in severity with age, sometimes dramatically.

The spine is the largest weight-bearing structure in the human body and studies demonstrate that with time the vertebrae and joint structures, including the discs, undergo a very advanced process of anatomical destruction where impairment exists. When things stop working properly in the spine, aging and degeneration of the structures advance quite rapidly. In fact, one can say the form, or anatomy, of the spine depends on maintaining normal function as we age.

What do you mean by degeneration and anatomical destruction? Here is what the change eventually looks like. (Project image of degenerative joint anatomy or use a large model.) You can see that the shape of the bones has changed. Extra bone is deposited at the top and bottom of the blocks that carry the body's weight; this process is called lipping and spurring.

So, traumatic injuries commonly cause eventual "bone spurs" in the spine? Yes.

And what are the other changes that occur? The disc begins to dry out and weaken; this results in what is known as early disc disease and commonly progresses with aging to disc bulging or even disc herniation. (Project image.) There is also a tendency for a mechanical problem to develop in the region.

What effect does this have, doctor? As the disc degenerates, it loses its normal height. This causes the vertebra and spinal joints to drop down abnormally onto the one below, which can result in a buckling and misalignment of the joint to occur, much like a "kink" in a chain. The area becomes very restricted in its normal movement and becomes chronically irritated and inflamed.

What does that mean? Chronic inflammation is a chemical reaction within the joint space. Spinal

joints are surrounded by a capsule that keeps the lubricating oil inside, allowing for easy movement without friction. When the capsule stretches and swells, it sends pain and alarm signals toward the brain.

What effect does that have? Besides conscious pain, the swollen joint structure also stimulates a "guarding" muscle spasm reaction.

What do you mean by 'guarding muscle spasm?' Nature has instilled a natural guarding response around the spine, using the muscles, much like a splint on a broken bone, to limit movement in order to prevent injury to critical nerve structures in the spinal cord and nerve roots. It is a primitive response meant to help keep us alive and mobile in case of spinal injury in the presence of immediate danger.

And what is the consequence of these guarding muscle spasms? All cells create noxious waste that should be eliminated. With chronic muscle spasm, the muscles eventually become very sick themselves because of the build-up of poisonous, toxic substances within the fibers. Muscles are not designed to maintain such a constant state of spasm; when they do, normal blood flow to the cells is impaired and lymph flow, which is designed to carry away the waste material, is also impaired. After a while, the muscle cells begin to die off and are replaced with scar tissue. This process is called fibrosis.

Are there other changes? Yes. Over time the impaired regions of the spine undergo an advanced process of destruction and degeneration.

Are there other long term consequences, and if so, what are they? Very often a person living in chronic pain will become psychologically depressed because of the depletion of neuropeptide substances within the brain. This happens because the body robs these protein substances from the brain in order to try and make its own pain-relieving substances called endorphins. Essentially, endorphins are the body's own morphine-like substances that it uses to counter high levels of pain discharge. It is why an injury that hurts a lot initially will eventually feel less painful. Endorphins act to help diminish conscious pain after an injury.

Are there other effects of this process of destruction? Yes, very commonly with such a high level of pain discharge and restricted blood flow, the nerves in and around the spine may become inflamed. This is called neuritis; *itis* is the suffix that denotes inflammation.

Please explain this inflammation of spinal nerves. Neuritis results in the most powerful pain sensations we can experience. It is a deep, boring pain that cannot be dismissed from consciousness. Neuritis is a result of what is essentially sick nerve tissue, and the pain from spinal impairment often reaches into the arms and legs. Very often it becomes chronic. If it is a result of direct compression on the spinal cord, which does sometimes occur, it may affect the organs of elimination with impaired bowel or bladder function, and the patient will have difficulty urinating or defecating. And we now know that it is very common for mechanically induced inflammation in the neck to create headache syndromes.

What are some of the consequences of chronic neuritis in the arms or legs? If it persists long enough it can cause a paralysis of muscles, a wasting away of the muscles that results in permanent weakness, or the inability to perform certain functions like walking or hand movements.

How can Mr./Ms. ____ try and avoid such a development? With permanent spinal impairment and the loss of normal mechanical function in the spine, it is important that a person receive regular treatment to try and maintain as much function as possible. This is the work that chiropractors and

some osteopaths do. We are trained to find these problem areas and by various physical methods to rehabilitate them and re-establish more normal movement.

Doctor, do you have an opinion on how much treatment my client will require in the future, and if so, how much they will need in their lifetime? (Specifics of case, keeping in mind that the need will increase as a patient ages.)

In a worst-case scenario, doctor, what are some of the other treatments utilized in such conditions as my client is experiencing? In a worst- case scenario there will be destruction of the joint structures and discs to the degree that surgery is required to relieve nerve root or spinal cord compression.

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