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Working with Clients Who Have Spinal Cord Injuries

By Ruth Werner, LMP, NCTMB

Dear Readers,

In my last article I provided some information on multiple sclerosis - a topic that many readers had requested. I hope that information was helpful and provided some insight into fruitful ways to work with these clients.

At the end of the article, I promised to devote my next column (this one) to working with clients who have spinal cord injuries - another frequently requested topic. Then I put out a request for those of you who work with that type of client to share what you do, what works, and what to avoid, so that we all might benefit from your experiences.

Guess how many responses I got? Goose egg. Zilch. Bupkis. To me, this means one of two things: either no one is doing any work at all with spinal cord injury survivors, or no one feels confident enough about what they're doing to share it with others. I know the first can't be true, since somewhere between 183 and 230 thousand people in this country currently live with permanent spinal cord injuries. Surely some of them receive massage!

After considerable research, I finally found a few therapists with experience in this area. In addition, I just finished being a support person for the 2002 Winter Sports Massage Team for the Paralympic Games, so I do have some things to share. I'll proceed on the premise that many of us do have some of these clients, but we feel that we're working in the dark. I'll do my best to shine a little light on this subject.

First, let's look at what exactly happens when the spinal cord is injured.

Spinal Cord Injury: What Happens?

Spinal cord injury (SCI) is a situation in which some or all of the fibers in the spinal cord are damaged, usually by trauma, but occasionally from other problems such as tumors or bony growths in the spinal canal. They fall into one of three categories: concussions, in which tissue is jarred and irritated but not structurally damaged; incomplete injuries, in which only some of the neuron tracts in the spinal cord have been damaged; and complete injuries, in which all the ascending and descending tracts have been interrupted at a specific level or levels.

As long as at least part of the spinal cord is intact, some motor or sensory function may remain in the affected tissues. This factor will determine what kind of recovery a person can expect to achieve. Obviously, the higher the damage, the more of the body is affected. Injuries to the anterior part of the cord affect motor function, while damage to the posterior aspect affects the senses of touch, proprioception, and vibration. Damage to the lateral parts of the cord interrupts sensations of pain and temperature.

An injury that affects the lower abdomen and extremities, but leaves the chest and arms intact, is called paraplegia. An injury that impacts the body from the neck down is called tetraplegia or quadriplegia. Among the SCI patients alive today, quadriplegics slightly outnumber paraplegics.

A person with a newly injured spinal cord goes through a period called "spinal cord shock." During this time, blood pressure is dangerously low, the heart beats slowly, peripheral blood vessels dilate, and the patient is susceptible to hypothermia. A number of secondary reactions may occur in the CNS at this time, including excessive bleeding; edema; free radical activity; scar tissue formation; white blood cell attacks on healthy tissue; and demyelination of healthy cells. These secondary responses can interrupt function up to two full levels above the primary injury, but they can be controlled with medical intervention, so it is vital that the patient receive aggressive care during this window of opportunity. With a new spinal cord injury, the affected muscles may be either flaccid or hypotonic. When the inflammatory process begins to subside (and this can take days or weeks after the initial injury), the muscles supplied by damaged axons begin to tighten, and their reflexes become hyperreactive. Spasticity along with hyperreflexia is a hallmark of spinal cord injury. If muscles stay flaccid and reflexes are dull or nonexistent, the damage is probably to the nerve roots rather than to the spinal cord itself. Injuries to the low back often show this pattern, as the spinal canal is occupied by the cauda equina nerve root extensions from T12 down to the sacrum. Depending on the nature of the trauma, it is perfectly possible to sustain injury to both the spinal cord and the nerve roots simultaneously.

Spinal Cord Injury Complications

Spinal cord injuries can lead to many serious long-term complications, several of which have important implications for massage therapy. SCI patients invest a lot of time and energy in working to prevent, minimize, or recover from these secondary problems.

- **Decubitus ulcers.** Also known as bedsores or pressure sores, these can arise anywhere circulation is limited by mechanical compression of the skin. Because these wounds don't heal quickly or easily, they are highly susceptible to infection.
- **Heterotopic ossification.** This is the formation of calcium deposits in soft tissues. They can be very painful.
- **Deep vein thrombosis, pulmonary embolism.** The formation of blood clots in the venous system is a high risk for new SCI patients, but the risk decreases only slightly with the passage of time. Any clot that forms on the venous side of the systemic circulatory circuit carries the risk of breaking off and traveling directly to the lungs as a pulmonary embolism.
- **Respiratory infection.** SCI patients are at high risk for respiratory infection, especially if the damage is higher than T12. When the chest can't fully expand and contract and the cough reflex is limited, it is difficult to expel pathogens from the respiratory tract. The leading cause of death for SCI patients is pneumonia.
- **Urinary tract infection.** If a SCI patient uses a catheter to urinate, the question isn't if he or she will develop a UTI; it's when. Left untended, the risk of kidney infection is high.
- **Autonomic hyperreflexia.** Damage to the spinal cord above T6 raises the risk of developing autonomic hyperreflexia, a condition in which a minor stimulus (a full bladder or bowel, a ridge of cloth caught under the skin, menstrual cramps, etc.) creates an uncontrollable sympathetic reaction. It causes a pounding headache, increased heart rate, sweating, and other flight-or-fight symptoms, including dangerously high blood pressure. Autonomic hyperreflexia can be a medical emergency.
- **Cardiovascular disease.** Suddenly changing from being ambulatory to being confined to a wheelchair means a significant reduction in physical activity for most SCI patients. The risk of developing hypertension, atherosclerosis, and other cardiovascular problems is high for this sedentary population.
- **Numbness.** Most SCI patients experience some numbness or reduction in sensation, depending on which part of the spinal cord has been damaged. The absence of pain is a dangerous feature, because it allows for damage to occur without warning. Small cuts or abrasions can become infected and an SCI

patient may never know. Of course, numbness also influences important decisions about bodywork.

- **Chronic pain.** Some SCI patients experience various kinds of pain along with numbness. Some chronic pain problems are generated in the spine itself, but refer sensation to the damaged limbs; nerve root pressure may refer pain along the associated dermatome; pain may be generated by the development of calcium deposits; or pain may be related to musculoskeletal injury as patients must learn to use their arms and shoulders in new ways to propel wheelchairs, and lift themselves into and out of them.
- **Spasticity, contractures.** As the muscles supplied by damaged motor axons begin to tighten, an SCI patient loses range of motion. This is a slow but progressive process, which may be slowed or even stopped by stretching and physical therapy. If any sensory or motor function is left in the limb, temporary episodes of spasticity may also be a problem. These may be caused by any kind of stimulus; the reflexes of active muscle fibers in SCI patients are very extreme and sensitive.

Spinal Cord Injury Treatment Options

New treatment options for SCI patients are being developed daily. Some SCI patients may have electrodes implanted in muscles that are controlled from an external computer. These implants can provide pinching and gripping capabilities for people who otherwise would not have the use of their hands. Surgical transfer of healthy tendons can also be helpful. For some people, the triceps muscle may be paralyzed, while the deltoid is not. Surgically extending the posterior deltoid tendon and attaching it to the olecranon can provide these people with the power it takes to use a wheelchair.

Treatment for SCI survivors is targeted at providing them with the skills to live as fully as possible. Physical and occupational therapists specialize in helping these patients gain the skills they need to function; mental/emotional therapists are also critical, especially for those who are adapting to their paralysis as a new way of life. Ultimately about 90% of all SCI patients are able to live independently with these new skills.

Spinal Cord Injuries and Massage

With all these complicated processes going on, and all these potentially dangerous problems that may develop, could it ever be appropriate for an SCI survivor to receive massage? Absolutely. In fact, the range of massage therapy modalities that can be successfully used with SCI patients is exactly the same as that for any other clients. As long as threatening complications like blood clots, pressure sores, and infections are not present, massage therapists can apply their skills with compassion and imagination to the great benefit of their clients.

Some bodyworkers specialize in energy and light-touch work with their SCI clients: this approach, which could include therapeutic touch, craniosacral therapy, and any number of other modalities, can be especially powerful in achieving "incorporation"- that weaving together of the whole body that many SCI patients lose.

Other approaches address the mechanical challenges of being confined to a wheelchair. The spasticity that SCI patients live with is a chronically progressive situation. This progress can be slowed or even halted with a carefully applied program of exercise and stretching-massage is certainly appropriate in this setting. Further, some of the spasticity and contractures that SCI patients experience seem to be a function of myofascial binding as much as loss of enervation. One therapist I spoke to described how exciting it was to work with an elderly patient's gnarled and claw-like hand, and see her gradually relax and be able to regain some control.

As SCI patients' muscle tone changes, they are likely to experience postural distortions that can be quite painful. Massage can help to limit this process and reduce the pain associated with it. As long as sensation is present so the client can give accurate feedback about how the bodywork feels, massage can be a powerful tool in keeping these changes at bay.

Finally, many SCI patients have to cope with chronic tendinitis and overuse syndromes in their hands, wrists, elbows and shoulders. In these cases it's not only appropriate, but essential to receive bodywork that can help to restore function as quickly as possible.

Practical questions such as how to position clients on a table, or whether to use a table at all, can only be answered on a case-by-case basis. At this year's Paralympics, the 2002 Winter Sports Massage Team had hydraulic tables that could be raised and lowered to make getting in and out of a chair as easy as possible. This is a good investment for therapists who work with any clients who might have movement difficulties. Plan on using bolsters extensively, and be sure to accommodate for urinary catheters and/or colostomy bags. Ultimately, the best service we can offer is simply to ask, "How can I make you most comfortable?"

I'd like to conclude this article with excerpts of a reflection written by Jan Fields, a member of the 2002 Winter Sports Massage Team, after he had worked with a Paralympic alpine skier with spina bifida:

With an effortless motion, he pulled himself onto the table. He grasped his lifeless legs and twisted his whole body until he was lying in a prone position. To gaze on his body was to grasp two opposing realities at once. His legs, clad in a loose fitting pair of sweatpants, were shriveled and limp. Even his

hips and buttocks were hollowed out and gaunt after years of frustrated growth and nearly useless service to the greater whole.

Yet, beginning with his lower back, and especially with the lower border of his rib cage, a transformation of epic proportions occurred. The sides of his torso tapered out dramatically to accommodate his thickly muscled back. Indeed, his entire upper body resembled that of a professional bodybuilder. Thus, while the lower half of his body revealed a life of disease, death, and despair, his upper body reflected a life filled with drive, determination, ambition, and hope.

At the end of the session, after my client had gotten off my table and had dressed and left the building, I reflected on the meaning of wholeness. It dawned on me that wholeness is not a disease-free condition, at least in this life, in this reality.

Instead, wholeness is a realized and utilized connection between the human will and a greater purpose, a greater goal. This athlete thrives because his sights are set on goals that diminish the significance of his lower body and magnify the significance of his upper body, including and especially his mind. Similarly, I thrive when my sights are set on goals that are adorned in truth and immersed in love-on my best days, and even on my worst days.

So, readers, what's next? Give me some ideas of topics you'd like to see discussed in "Dealing with Pathologies: What's on Your Table?" Otherwise, I'll just make some up of my own!

Blessings,

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