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Chiropractic Approach to Lumbar Spinal Stenosis
Part II: Surgery and Treatments
By Carol Marleigh Kline, JACA Online editor

In Part I of this article, Drs. Donald Murphy, Matthew Kowalski, and David BenEliyahu discussed symptoms and diagnostic criteria, testing, and patients who may/may not benefit from chiropractic conservative care for stenosis. In this issue, they speak about surgical issues and options, as well as a range of chiropractic conservative care treatments.

SURGERY

Until the literature began to show otherwise, surgery was considered the treatment of choice for lumbar spinal stenosis (LSS). Patients were told that if they thought their pain was bad now, it would only get worse without an operation—and allowing a doctor of chiropractic to move a stenotic back was potentially dangerous. These days, however, even allopaths are revisiting long-held beliefs about who can help LSS patients. Haig, for example, says, “The lack of objective predictors of decline makes surgical decision-making [for stenosis] less clear than previously thought.”1

Dr. Matthew Kowalski’s familiarity with the literature and his professional experience over the years have led him to an even stronger conclusion: “Surgeries aren’t good for stenosis. The outcomes for the most common surgery, lumbar decompression, can bring good patient satisfaction for the first 2 years, but in the long term—the 10-year follow-up studies—patients’ symptoms seem to be pretty equal whether they have surgical care or conservative care. So if a person really needs surgery, it should be pushed off as far into life as possible.

“This is a pretty significant surgery. We don’t know whether a person will be a good risk for re-surgery in 10 years. With conservative care, we hope that we can push surgery off so the patient can get the maximum benefit in the meantime.”

Dr. Kowalski says patients who choose surgery have a variety of options in addition to decompression. “Port-hole” surgery removes the spinous processes and ligament. Another procedure can replace an enlarged facet joint. Fusion, he says, “is typically done only when patients have significant spondylolisthesis.”

Spondylolisthesis presents unique challenges. Weinstein et al. concluded after the SPORT trials that surgery is the preferred choice for patients who suffer from severe spondylolisthesis: “In . . . nonrandomized comparisons with careful control of potentially confounding baseline factors, patients with persistent neurogenic claudication from degenerative spondylolisthesis treated surgically showed substantially greater improvement in pain and function, as well as satisfaction, for two years.”2

Inventive minds are devising still more surgical options as the number of potential patients expands. “There’s a new, more minimally invasive procedure called X-Stop, which is showing some promise, but the long-term studies are not yet there,” says Dr. Kowalski. “If a person has a single level of stenosis, X-Stop may be beneficial.” In this procedure, a surgeon makes a small incision between the spinous processes to insert the X-Stop, widening the interspinous space and preventing extension.

Epidurals—Yes? No? Perhaps?

Both Drs. Donald Murphy and David BenEliyahu refer patients for epidurals, but only as part of an integrated treatment plan. Dr. Murphy says it’s impossible to know ahead of time whether injections will help, although “a lot of people respond well to them. I use them to help facilitate the exercise and neural mobilization and distraction
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manipulation that I do.” If a patient has epidurals and nothing else, however, “you’re probably not going to get results, but if you [use epidurals] as part of an active approach to mobilizing the nerve root and the spinal segment, it can be a useful tool in some people.”

He adds that the effectiveness of epidurals depends on the degree to which inflammation is a major part of the pathophysiology. When it is, injections can be temporarily helpful. “From our standpoint as nonsurgical spine specialists, ‘temporary’ is all we need. People who criticize epidural injections base their objections on studies—and correctly so—where doctors just give people epidural injections and nothing else. They follow up six months later and patients aren’t doing any better than they were before the injections. That’s not the purpose of epidurals. If they are used to produce long-term benefit, they are being misused. They are a means to an end—to get patients more active in terms of exercise and mobilization.”

Dr. Kowalski, however, says he rarely refers for epidurals. “When you think about it, you’re putting fluid into the epidural space, which is already compromised in size. So by pushing fluid in there, you are transiently decreasing the spinal canal diameter even further. I’ve had two patients who had epidurals against my advice and who then had short-term loss of bladder control following the epidural, so I’m not a big proponent. On the other hand, I am a big proponent of considering facet joint blocks, facet injections, or facet oblations in patients who have advanced facet disease” for back pain control.

MRI No Gold Standard

Haig takes issue with other MDs who would schedule a patient for surgery based on MRI findings. “We do not question that some people have spinal canals that are insufficient for their needs. But the anatomic term ‘spinal stenosis’ has little clinical meaning given the spectrum of findings and lack of an anatomic diagnostic standard. It also is dangerous . . . ; we have treated countless patients whose referring physicians have assumed that an MRI finding we now know occurs in up to 85% of older people without symptoms implies progressive pain and disability unless surgery occurs. Specialists do recognize some kind of syndrome, but it is held together by objective EMG findings, not imaging . . . [R]adiologic stenosis neither implies symptoms nor prognosis.”1 EMG findings are appropriate, he says, because they are “more than a picture of a nerve. [EMG] can test nerve function and show if there is actual nerve damage.”

The majority of people over 65 with undiagnosed and asymptomatic degenerative stenosis respond in a way congruent with good health, says Dr. Kowalski. Most will have achiness and stiffness in the back at some point but their bodies tend to adapt to the incremental stenotic process. “A fall or an injury can disrupt that process, however, and make a person symptomatic. The stenotic patient’s MRI will show that the spine looks terrible, but the patient says, ‘I didn’t have symptoms until two weeks ago.’”

Spine Society Favors Conservative Approach

Although doctors of chiropractic who work with stenotic patients may disagree with the North American Spine Society’s (NASS) Guideline numbers on the necessity for surgical interventions, even NASS admits that conservative care occupies a singular, and valuable, treatment position. In 2006, NASS stated, “Of patients with mild to moderate lumbar spinal stenosis initially receiving medical/interventional treatment and followed for 2 to 10 years, approximately 20-40% will ultimately require surgical intervention.” NASS adds, “Of the patients who do not require surgical intervention, 50-70% will have improvement in their pain.”

CHIROPRACTIC

Doctors of chiropractic who work with LSS warn that becoming qualified to handle fragile stenotic backs calls for more study and hands-on training than the average DC has acquired in school. It requires not only familiarity with the related literature, but also specialized knowledge and awareness of the often inter-related complexities of stenosis in the aging body. Dr. Murphy says researchers are still in the process of sorting
through options and outcomes where stenosis is concerned. Just as there’s little good evidence to tell practitioners which types of surgical therapies are most helpful, little exists on the long-term effectiveness of the various conservative approaches.² He adds, “The advantage we have as nonsurgical spine specialists is when it’s not clear whether a person will respond or not, there’s no harm in giving it a try. The worst thing that can happen is that they don’t respond. With surgery, if you’re not sure whether the person is going to respond or not, it’s a lot harder to just say, ‘Let’s go for it and see what happens.’ You’re making a permanent change in the structure of the spine.”

Techniques
To improve function and reduce pain, both Drs. Kowalski and BenEliyahu use flexion/distraction. Dr. Kowalski also uses manual mobilization of the sacroiliac joints and spine as indicated. Dr. Murphy combines distraction manipulation (DM)* and neural mobilization (NM). He explains the process he used with patients in his 2006 study: “In applying DM, the patient lay prone on a table that allows for distraction of the spine through inferiorward and flexion movement of the lower body. This maneuver has been demonstrated to decrease intradiscal pressure and is believed to create vertebral motions and increase the intervertebral foramen.” He applied DM “by having the patient lie supine while the doctor or therapist dorsiflexed the ankle and flexed the hip with the knee extended. The leg was raised until the practitioner felt the ‘barrier,’ i.e., the point at which tension is initially felt. The foot is then moved alternately into plantar flexion and dorsiflexion repeatedly for several cycles.” Neural mobilization is described as “a manual and exercise-oriented method that is theorized to mobilize nerve roots suspected to be the source of nerve root pain.”

Because of the many complicating factors typically involved in stenosis, Dr. BenEliyahu says a doctor’s treatment plan cannot be too narrowly focused. “I think modern chiropractors do not treat only with spinal manipulation. They use a package or a protocol. That includes different types of manipulation, including high-velocity and flexion/distraction or an instrument type of adjustment.”

Handle with Care
High-velocity manipulation is right, however, for only a minority of LSS patients says Dr. BenEliyahu. “A chiropractor needs to be careful in administering a high-velocity classic lumbar roll. Sometimes it’s going to help, but sometimes it’s going to exacerbate the symptoms. I’ve found that it’s best to use flexion/distraction because you can use both flexion as well as circumduction if tolerated. In my opinion it’s just a safer technique for LSS patients.

“The lumbar roll is not as safe, especially in patients who are older, who have significant degenerative changes with some instability, who have decreased spinal canal sizes, some sensory motor deficit, and significant amounts of spasm. It’s not that I don’t ever use that technique. I do. But typically it’s on younger patients. Either way, I hold off on it for a quite some time. Even when I do consider using it later on, I put the patient in a pre-manipulative maneuver—and look for a hard end-feel or barrier. Most times the patient will give you feedback that it hurts and will report it is increasing back, buttock, or leg pain. If that occurs, I consider it a contraindicated technique for that patient.

“In my experience, I can use a high-velocity lumbar roll with maybe one in five stenotic patients. I think it’s prudent to be conservative. I’m still a chiropractor. I use spinal manipulation. I’m just very judicious about who I use it with because it can backfire.”

Vascular Issue
Dr. Murphy says that in his study, he was working to decompress and mobilize the involved nerve root(s) to break up periradicular adhesions, thus releasing nerve root entrapments and restoring vascular function. He would like to see larger randomized, controlled trials that will prove that maintenance of intersegmental and nerve root mobility will maximize long-term treatment benefit.
A year and a half after completion of his study, he says a majority of participating patients continue to experience positive outcomes. “What’s so interesting is that, of course, the bony changes that produce symptomatic stenosis are unchangeable. The only way to change that is with a surgical procedure that takes away that bony structure. So when nonsurgical management is effective, it’s obviously not because the actual compression to the nerve root has been removed. There must be some other mechanism by which this happens. The best theory is that loosening and stretching the adhesions of fibrotic tissue reduces the vascular compression—reduces the tractioning on the nerve root that is produced by the adhesions—and this produces the result.”

**Cardiovascular Training**

Dr. Kowalski, too, believes the vascular compression theory may turn out to be important. For that reason, he includes cardiovascular training as an LSS treatment component. “We like to increase the patient’s cardiovascular capacity. One study showed that when patients who were developing symptoms on a treadmill were given oxygen, their symptoms diminished, so I use this as a tool to justify the need for cardiovascular training.”

**Trigger Points**

Patients with stenotic symptoms will often suffer from muscle spasm, says Dr. BenEliyahu. “In my experience, the iliopsoas, piriformis and gluteus muscles go into spasm, forming myofascial trigger points and adhesions. The sciatic nerve sits right under those muscles, so commonly when we are dealing with an issue that occurs centrally at the spinal level, it often will result in a peripheral entrapment. Muscle adhesions can bind up nerves and become another pain generator. I tend to direct a lot of attention to the muscles with physiotherapeutic modalities like ultrasound, electric stimulation, and myofascial release—including stretching, and post-isometric relaxation technique—to release the trigger points and adhesions that may affect underlying nerves.”

Dr. BenEliyahu says the modern DC should approach stenosis on numerous levels, including not only physiotherapeutic modalities, but also exercise prescription, ergonomic instruction, as well as dietary changes, weight loss if indicated, nutraceuticals, and supplement advice.

**Ergonomics**

Dr. Kowalski makes a number of ergonomic recommendations to his patients. For example, he asks them not to sleep in a face-down position—or to sleep in a way that torques the spine too much. He also suggests that patients sleep with a pillow between the knees. “Sometimes,” he says, “we use braces. One of my favorites is the Cyb-tech™ brace—a nice brace to support the back.”

**Diet and Nutrition**

If the body of an LSS patient is stressed by an inflammatory reaction, Dr. BenEliyahu recommends anti-inflammatory dietary changes and nutraceuticals. “If you’re trying to reduce inflammation in the spinal canal or in the nerve root, and you keep on eating pro-inflammatory foods, it’s like banging your head against the wall,” he says. “I talk about supplements—glucosamine and chondroitin sulfate in particular because they are in the literature.” He also recommends fish oils and flax seed for their anti-inflammatory omega 3 fatty acid content.

“Obviously, if we’re talking about someone who is obese, that’s a significant co-morbidity factor for this condition and that issue should also be addressed. Another co-morbidity factor that needs to be considered is diabetes. If patients are diabetic, or have diabetic neuropathy, it also will adversely affect their outcome.”

Other anti-inflammatory dietary additions, says Dr. BenEliyahu, could include the use of green tea, ginger, curcumin, grapeseed extract, and avoidance of refined sugar products and processed meats. That list can include gluten and dairy products if the patient has intolerance to them.
Natural analgesics can also be recommended, such as white willow bark, devil’s claw, proteolytic enzymes, and boswellia. These act as Cox-2 inhibitors, and help reduce substance P and pro-inflammatory leukotrines.

**Stretches and Exercises**
Typical exercises for stenosis include lying down with the knees clasped as close as possible to the chin or riding a bicycle with the handlebars adjusted to cause maximum flexion of the back, which reduces pain. “Riding a bike allows the patient to exercise while the spine is in flexion so it permits you to exercise in spite of the fact that you have spinal stenosis, which is great. But,” Dr. Murphy adds, “it’s not going to change the condition.” Two more exercises Dr. Murphy included in his study were the “cat and camel” and “nerve flossing.”

Dr. BenEliyahu emphasizes strengthening of the core muscles. He suggests patients practice yoga and learn how to work with the Swiss ball to increase both flexibility and strength.

Because exercise is so important for stenotic patients, Dr. Kowalski says he often recommends that they join a community-based pool program “to get some movement going in the legs,” or that they buy a pedaler, a portable set of pedals that they can use to exercise while sitting in a chair. In addition, he suggests a variety of flexion-based exercises and stretches to functionally increase the diameter of a patient’s spinal canal. These include stretches of the erector spinae muscles and the posterior soft tissues of the spine.

Like Dr. BenEliyahu, Dr. Kowalski wants his patients to strengthen core muscles, as well as the rectus abdominis. “We also teach our patients,” he says, “to walk in a slight pelvic tilt because it increases the spinal canal’s diameter. In addition, it’s important for patients to consider stretching of the quadriceps, hip flexors—any of the muscles that will cause them to extend their spines excessively. You want to induce flexion and the way to do that is to stretch the extensors. Basically, you want them to bend forward to open up the spinal canal; [therefore], they have to stretch the muscles that bend them backward.”

**Multiple Disorders Create Challenges for DCs**
Multiple orthopedic disorders often contribute to functional problems that exacerbate stenosis symptoms, says Dr. Kowalski. For example, “If a patient has degenerative hips and knees, these may create gait alterations that cause dynamic stenosis. With stenosis, a patient’s spine may not be critically stenotic, but when the patient starts to walk, the torsion of the spine and the gait abnormalities that occur may exploit the underlying stenosis and make the symptoms worse.

“A patient of mine had bilateral hip degeneration and knee degeneration, but one side was worse than the other. She had pretty severe stenosis and pseudoclaudication symptoms and she did not do well with my care. She went to a spine surgeon who wanted to do surgery on her back. I recommended that she go for a hip replacement, instead, which she did. Her symptoms went away. A couple of years later, her symptoms had returned. Her degenerative knee was so bad that I suggested she have her knee replaced. Now she doesn’t have stenotic symptoms. That’s because we stabilized her gait and looked at her more from a functional standpoint, not just an anatomical standpoint.”

“Doctors,” he says, “should consider the mechanics of the spine and how the spine is influenced by peripheral stresses. It’s incredibly complex. Too few people,” he says, “take the time to look at it in the complex nature that it presents.”

**What Patients Can Expect**
Dr. Kowalski says that stenosis isn’t a condition that’s cured. It’s managed. “It’s really important to get the expectations of the patient down with this condition. If he or she expects to have complete resolution of symptoms either from surgery or from conservative care, it’s not going to happen. A very good outcome is a 50% reduction in symptoms, and this has to be made clear to doctors and their patients. A great surgical outcome is a 70% reduction.” He also states that while conservative care is best for mild or moderate
cases, it’s a toss-up between conservative care and surgery when it comes to more advanced cases—although some with severe stenosis do respond well to chiropractic.

To people who can stride through their days with ease, the thought of spending life hunched over a cane, a walker, or a shopping cart is unacceptable. But as Dr. Murphy says, “If there’s nothing else that can be done, then we just have to accept it.” He says, however, that chiropractic does offer substantive hope to many patients. “According to our data, there are things that can be done to make actual long-term changes.”

One of the problems he sees, says Dr. Murphy, is that stenosis continues to be poorly understood by allopaths. “Many patients are told not to go to a chiropractor, told that their spine is degenerated and the last thing they want to do is to have someone move it. In my experience, having someone move the spine is the best thing. But the only way to change minds is to come up with credible evidence and substantive argument.”

Dr. Murphy is working to help provide further evidence and argument in this area. He is in the process of writing a grant proposal for another study—a randomized controlled trial on stenosis.

* Dr. Murphy says, “‘Distraction manipulation’ and ‘flexion-distraction’ are synonymous. The method was developed by James Cox, DC. In the beginning, he referred to it as ‘flexion-distraction,’ but he later began referring to it as ‘distraction manipulation.’”

References

The following sources may also be of interest:

Dr. Kowalski affirms that there is no conflict of interest between Cybertech™ and himself.