Lumbar Spinal Stenosis: *Right Back at You*

**Case Study**

**Assignment:** Please design your initial and 2 follow up treatments for the patient. You should list your treatment for each of the 3 sessions, and the rational behind your treatment choices. Include a home exercises program, and references as appropriate.

A 65-year-old gentleman presents to you in your outpatient clinic with ongoing limitations due to back pain and difficulty in walking. He reports pain beginning about 3 years ago, but was mild at the time and only occurred after walking 9 holes of golf. However, the pain has gradually become more limiting, and the patient is now only able to walk for about 10 minutes, prior to fatigue. When the patient sits the discomfort diminishes, especially if the patient sits with his legs up in his recliner. The patient states he sometimes uses a walker, when he knows he is going to be out for a while walking. Radiological images shows narrowing of the central canal with thickening of the posterior elements.

*The following information was found on the evaluation.*

**Past medical history** includes:
- Diabetes, adult onset, controlled by insulin.
- Hypertension controlled by medication. The patient had a balloon angioplasty in 2005 and a right wrist fracture in 2008, after falling down a step.
- Pain – on average, 4/10
- Oswestry score - 36
- Posture – right iliac crest is slightly elevated compared to the left; patient has maintained adequate lordosis, and has an increased thoracic kyphosis, rated at a 5/10 on the ReEdco posture score sheet
- Active ROM into **forward flexion** with inclinometer at 55 degrees
- Extension – 15 degrees; pain into leg at 10 seconds
- Sidebend – limited 10 degrees to the right and 20 degrees to the left
- Hip internal rotation to 20 degrees, **external rotation** to 30 degrees
- Hip extension to 5 degrees
- Hip flexion 100 degrees
- Dorsiflexion – 8 degrees right, 10 degrees left

**Single limb stance** on the right at 7 seconds, left at 10 seconds.
- Functional reach to 10 inches in the frontal plane.
- Sit to Stand - The patient requires upper extremity assistance to rise from a chair.
- Gait – flexed at hip and knees, forward flexed at trunk, wide base of support
- Strength – Bridge held for 45 seconds; hip abduction with dynamometer right 33 pounds, left 48 pounds; plank hold 6 seconds

**Sensation** is in tact but there are reduced knee and ankle jerk reflexes bilaterally
- **Spasms and tenderness** are found with palpation through the right quadratus lumborum, multifidus, and piriformis
- **Segmental mobility** is reduced grossly through the lumbar spine
**CASE STUDY - RECOMMENDED TREATMENT PLAN**

**First session:** Reduce spasm and pain pre treatment with heat and TENS. Manual Techniques of soft tissue mobilization and trigger point work to reduce spasms in the quadratus lumborum and multifidus. Trager rotation in side-lying grade II to III grossly through lumbar spine. Measure HS length since it wasn’t done initially and if found to be limited then stretch hamstrings, and hip flexors. Instruct patient on a posterior tilt to open the spinal canal, and how to strengthen into a posterior position, by engaging abdominal muscles. Perform one rep max testing for hip abduction and extension, since both tested weak in the evaluation. Educate patient on sleeping positions and gait with flexion bias.

**Treatment 2:** Begin treatment with heat if musculature of the spine is still tender and tight. Release trigger points as needed in spinal region, Patient prone with pillows, stretch into lumbar flexion. Begin a biking program. Exercises as previous with addition of balance work and pelvic tilts in standing and sitting. Add resisted exercises in sitting and start performing strengthening for abductors and extensors.

**Treatment 3:** add balance and address postural exercises and thoracic mobs; consider discussing don tigny for assym.

**Poor answers**
- Work on increasing time into extension without tingling/pain by stretching into lumbar extension
- Strengthen gluts by bridging
- Start with planks for strengthening
- Stretch gastrocs and soleus
- Hip mobs initially