CASE STUDY #5

Irene is an 85-year-old woman who fell at home, resulting in acute low back pain and right more than left (R > L) lower extremity radiculopathy and necessitating bed rest for more than 2 weeks. She is weak, deconditioned, unsteady on her feet, and fearful of falling. She now uses a walker for ambulation. Her back still gives her pain, although she no longer suffers lower extremity symptoms. Irene lives in her own apartment in an assisted-living environment. Before the fall, she independently handled her basic activities of daily living and was socially active with fellow residents.

EXAMINATION

Posture: Kyphotic/lordotic thoracolumbar alignment; anterior pelvic tilt; hips slightly flexed

Strength Testing: Leg lowering 2/5; gluteus maximus (R) 2+/5, (L) 3+/5; gluteus medius (R) 2/5, (L) 3/5; iliopsoas (R) 3/5, (L) 4-5/5; quadriceps (R) 4/5, (L) 4+/5; hamstrings (R) 3-5/5, (L) 3-5/5

Muscle Length: Moderate shortening of quads > iliopsoas, R > L; (B) hamstrings unremarkable

Functional Movement Testing: Pain with standing or walking (4/10). Pain relief with sitting or sidelying. Standing forward bend at 20 degrees; standing backward bend trace with reproduction of symptoms

Gait: Positive Trendelenburg with stance R > L; wide base of support; flexed at hips with forward displaced trunk over pelvis; markedly diminished lumbopelvic rhythm

Balance: Standardized stand reach test of 6 inches; provoked balance response demonstrates delayed step response with hip > ankle strategies

Reflexes: Knee jerk (B) 2+; ankle jerk (R) 1+, (L) 2+

Sensory: Light touch intact, mildly decreased proprioception R > L

EVALUATION: Fixed kyphosis and lordosis malalignment, with corresponding muscle length and tension changes; painful with active or passive extension, affecting static and dynamic standing balance, and standing tolerance

Impairment
• Fixed kyphotic-lordotic alignment of thoracolumbar spine
• Muscle weakness, especially trunk and proximal lower extremity
• Shortened iliopsoas and quadriceps, R > L
• Decreased static and dynamic standing balance
• Fear of falling
• Pain with lumbar extension

Functional Limitation
• Assistance required to get out of bed or up from a chair
• Inability to stand > 2 minutes
• Inability to walk > 10 meters
• Mobility avoidance

Disability
• Loss of independence performing basic activities of daily living
• Loss of independence with ambulation
• Unable to walk to dining room
• Reluctant to participate in usual social activities (bridge, films, out for dinner with family)

DIAGNOSIS: Lumbar spinal stenosis exacerbated by fall. Now with subacute pain, deconditioning, balance deficits, and increased fear of falling.

PROGNOSIS

Short-Term Goals (2 weeks)
1. Independent ambulation with walker, 25 meters
2. Independent transfer out of bed
3. Independent stand for 10 minutes for morning self-care routine

Long-Term Goals (8 weeks)
1. Independent ambulation within building complex; no assistive device
2. Resume all previous social activities with friends and family