Use of Functional Strengthening, Balance Training, and Stretching In The Treatment Of A Patient Following a T11-L5 Spinal Fusion: A Case Report

Anna Sidloski, B.S., DPT student
Brian T. Swanson, PT, DSc, OCS, FAAOMPT
Department of Physical Therapy, University of New England, Portland, ME

Unique
- Abundant evidence available regarding treatment approaches for patients suffering from low back pain (LBP)
- Limited research focusing on PFTreatment status post-multilevel spinal fusion with postural impairments
- Must work within post-operative restrictions
- May have delayed healing due to smoking habits

Interventions

Strengthening
- TA recruitment
- Clamshells
- Side hip add/ext.
- Lateral walks
- SITs
- Step ups
- Bridging
- Posterior pelvic tilt
- Rows
- Shoulder ext.
- Shoulder ER
- Chin tucks
- Chin pinch
- Angels

Stretching
- Manual and self hamstring
- Manual and self hip flexors
- Self pectorals
- Self quadriceps

Balance Training
- Three-point gait training
- Manual perturbations reaching out of BOS at parallel bars
- Alternating toe taps on step
- Tandem and SLS in parallel bars
- M/L and A/P weight shift and maze control on Biodex

Outcomes

Initial Evaluation
- NPRS IE to Final
- ODI IE to Final Visit
- BBS and DGI IE to Final Visit

Final Visit
- Low back pain
- Sciatica
- Lumbar flexion
- Hip flexion
- Hip extention
- Hip adduction
- Hip abduction
- Knee flexion
- Knee extension
- Ankle plantarflexion
- Ankle dorsiflexion

Discussion
- Lower extremity strengthening, stretching, and balance training may be beneficial treatment approaches
- Cigarette smoking may inhibit spinal fusion and adversely affect outcomes, including return to work

Limitations
- Cannot infer cause and effect between these interventions and clinical improvement of the patient
- The functional improvements and decreased forward flexed posture suggest these interventions were likely a contributing factor
- Further research is warranted

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References