The Use of Manual Lumbar Traction and Therapeutic Exercise in the Treatment of a Patient with Low Back Pain: A Case Report

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Background and Purpose

- The prevalence of low back pain (LBP) has been increasing in the United States.[1]
- Manual lumbar traction and therapeutic exercise are two common treatments by physical therapists (PT) for LBP, but there is limited research investigating the combined effects of these treatments on low back pain.
- The purpose of this case report was to investigate the combined effects of these treatments on LBP.

Case Description

- 48 year old female
- primary complaint- pain in the lumbar region
- Pain inhibited daily tasks and activity
- PT diagnosis- Spondylosis without myelopathy or radiculopathy, lumbar region
- Positive prognostic indicators- motivation to participate in PT and return to prior level of function and research reports patients with LBP had favorable outcomes with most pain and related disability resolved within weeks.[3]
- Negative prognostic indicators included onset age, gender, and chronic nature of symptoms.[3]

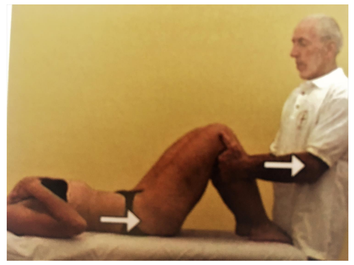
Tests and Measures

	Initial Evaluation		Week 6	
Thoracolumbar Active ROM	Full- Pain increased with extension		Full ROM No Pain with Any Motion	
Manual Muscle Testing	**Left**	**Right**	**Left**	**Right**
Gross LE	4/5	4/5	5/5	5/5
Hip Abduction	-4/5	-4/5	+4/5	+4/5
Transverse Abdominis	-4/5		+4/5	
Flexibility Restrictions	**Left**	**Right**	**Left**	**Right**
Piriformis	Moderate	Moderate	Slight	Slight
Iliotibial Band	Mild	Mild	Slight	Slight
Hamstrings	Moderate	Moderate	Slight	Slight
Palpation	**Left**	**Right**	**Left**	**Right**
Gluteus Medias and Piriformis	Grade II- Pain with Wincing	Grade II- Pain with Wincing	None	None
Squatting	Knees anterior to toes at end of motion Complaint of increased lumbar pain		Good mechanics Full ROM Hold 5 seconds No increase in pain	
Numeric Pain Rating Scale (NPRS)				
Pain at Worst	6/10		1/10	

Interventions

- Interventions included manual therapy, muscle stretching, and therapeutic exercises.
- Manual lumbar traction was selected to increase intervertebral space.
- Muscle stretching was performed to reduce soft tissue mobility restrictions of the piriformis, tensor fasciae latae (TFL), and iliotibial (IT) band.
- Therapeutic exercises were selected to improve transverse abdominis and hip abduction strength.

Manual Lumbar Traction



Piriformis Stretch

TFL and IT Band Stretch

Abdominal Brace

Heel Slides

Clamshell Exercise

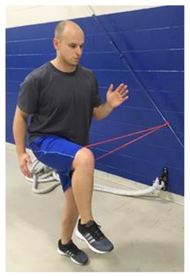
Bridging Exercise

Brace with P-Press

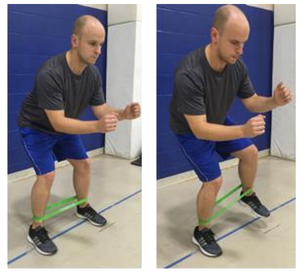
Brace with One Arm Row

Brace with Across Body Chop

Standing Hip Flexion



Side Steps



Outcomes and Goals

- Improved pain levels, strength, soft tissue restriction, tenderness upon palpation, and functional movement
- All short term goals achieved except pain levels
- Despite not meeting goal for 3/10 on the Numeric Pain Rating Scale (NPRS), the patient reported decreased frequency of pain.
- All long term goals achieved at discharge

Goals at 3 Weeks	Result
3/10 NPRS	✘
Pain free squat	✓
LE strength +4/5	✓

Goals at 6 Weeks	Result
1/10 NPRS	✓
Squat with 5 second hold	✓
LE strength 5/5	✓

Discussion

- Plan of care was successful in decreasing LBP for this patient
- Increased intervertebral space[6], supported lumbar spine[7], or increased blood flow to the spine[8] may have contributed to successful outcomes.
- Future research- greater sample size, examination of long term effects, and other outcome measures

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