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.  
- 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.
- Negative prognostic indicators included onset age, gender, and chronic nature of symptoms.

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.

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

Tests and Measures

<table>
<thead>
<tr>
<th>Thorough Lumbar Active ROM</th>
<th>Initial Evaluation</th>
<th>Week 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full ROM No Pain with Any Motion</td>
<td>Full Pain increased with extension</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Manual Muscle Testing</th>
<th>Groin Left</th>
<th>Groin Right</th>
<th>Hip Abduction Left</th>
<th>Hip Abduction Right</th>
<th>Transverse Abdominis Left</th>
<th>Transverse Abdominis Right</th>
<th>Flexibility Restrictions</th>
<th>Hip Flexion</th>
<th>Hamstrings</th>
<th>Hip Adduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left</td>
<td>Right</td>
<td>Left</td>
<td>Right</td>
<td>Left</td>
<td>Right</td>
<td>Left</td>
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<tr>
<td>4/5</td>
<td>4/5</td>
<td>5/5</td>
<td>5/5</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Quadratus Latae and Piriforms</th>
<th>Grade 1</th>
<th>Grade 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left</td>
<td>Pain with</td>
<td>Pain with</td>
</tr>
<tr>
<td>Right</td>
<td>Wining</td>
<td>Wining</td>
</tr>
<tr>
<td>None</td>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Squatting</th>
<th>Knee Extension to 90° at end of motion</th>
<th>Complaint of Increased lumbar pain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good mechanics</td>
<td>Full ROM</td>
<td></td>
</tr>
<tr>
<td>Hold 5 seconds</td>
<td>No increase in pain</td>
<td></td>
</tr>
</tbody>
</table>

| Numeric Pain Rating Scale (NPRS) | Pain at Worst | 6/10 | 1/10 |

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

Acknowledgements
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References