Background

- The National Highway Traffic Safety Administration noted 7,277,000 police reported motor vehicle accidents (MVA) in the United States in 2016. As a result, 2,177,000 people were injured.
- In 2008, approximately 340,000 emergency department visits were because of hip fractures.
- Femur fractures average $40,000 in medical bills in the succeeding years.
- A review of 12 trials resulted in mixed evidence on the necessity of skilled physical therapy (PT) interventions to maximize functional mobility in individuals with femur fractures.

Purpose

The purpose of this case report was to report on the results of skilled PT intervention in treating an individual with a subtrochanteric femur fracture sustained during a MVA.

Case Description

- 47-year-old male with diagnosis of subtrochanteric fracture of the right femur
- 6 weeks s/p intramedullary segmental femur fracture repair
- Highly motivated to return to work, return to prior level of function, regain ability to babysit grandchild, and received immense support from his wife
- Demonstrated severe ROM and strength deficits
- Ambulated with bilateral axillary crutches with toe-touch weight bearing (TTWB) for eight weeks, then ambulated with unilateral axillary crutch
- Participated in skilled physical therapy interventions 3x/week for 6 weeks; the patient was not discharged during this case report

Interventions

- Joint Mobilizations
  - Medial Patellar Glides
  - Superior Patellar Glides
- Soft Tissue Mobilizations
  - Quadriceps
  - Iliotibial Band
  - Hamstring
- Russian Electrical Stimulation
- Short Arc Quads
- Straight Leg Raise
- Balance
- Aerobic Conditioning
  - BiodexStepper
  - Strengthening
  - Open-chain, closed-chain
  - Core
  - Lower extremity stretching
  - Quadriceps
  - Hamstring
  - Calf
- Bilateral Axillary Crutches
  - TTWB
  - Heel strike
  - Step through gait pattern
  - Single Axillary Crutch
- Manual Therapy
  - Neuro Re-Education
  - Gait Training
- Therapeutic Exercise
  - Core
  - Open BiodexStepper
  - Single Axillary Crutch
  - Bilateral Axillary Crutches

Outcomes

<table>
<thead>
<tr>
<th>Test</th>
<th>Initial Evaluation</th>
<th>Final Measurement</th>
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</thead>
<tbody>
<tr>
<td>LEFS</td>
<td>30/80</td>
<td>35/80</td>
</tr>
<tr>
<td>Right Knee Flexion AROM</td>
<td>23°</td>
<td>102°</td>
</tr>
<tr>
<td>Right Knee Extension AROM</td>
<td>Lacking 11°</td>
<td>0°</td>
</tr>
<tr>
<td>Right Hip Flexion AROM</td>
<td>44°</td>
<td>122°</td>
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<tr>
<td>Right Knee Flexion MMT</td>
<td>3/5</td>
<td>4/5</td>
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<tr>
<td>Right Knee Extension MMT</td>
<td>2+/5</td>
<td>3+/5</td>
</tr>
</tbody>
</table>

Conclusions

- Gait training, therapeutic exercise, manual therapy, and neuro re-education were shown to be beneficial.
- Decreased pain, improved LEFS score, strength improvements, increased independence and functional mobility were observed.
- Delayed WB status slowed therapeutic exercise progressions leading to a prolonged recovery, decreased independence, and increased impact on the family.
- A minimal clinically important difference was not seen in the patient’s LEFS score.
- The patient required continued skilled PT interventions.
- More research is needed to further study the best approach to treating this diagnosis.

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References