Background

- 795,000 strokes occur annually in the United States, or one every 4 seconds\(^1\)
- Impairments following a stroke may include deficits in strength, coordination, sensation, and language skills\(^1\)
- Expected impairments of pontine strokes: hemiplegia, sensorimotor dysfunction, ataxic hemiparesis, and dysarthria\(^2\)
- Little current research on pontine strokes
- The purpose of this case report is to outline the physical therapy plan of care and response to treatment for a patient following a pontine stroke in the acute inpatient rehabilitation unit of a hospital

### Patient History & Systems Review

- 63 year old Caucasian male
- Sudden weakness in LE resulting in fall and inability to stand
- MRI showed cerebrovascular accident to pontine region
- Treated for 4 weeks on acute rehabilitation floor of hospital
- Reported not seeing PCP in previous 5 years
- No electronic medical record other than right meniscal repair 5 years prior and current torn ACL in L knee
- Cardiovascular/Pulmonary: Impaired due to high blood pressure
- Musculoskeletal: Impaired due to limited ROM, decreased strength, inability to ambulate
- Neuromuscular: Impaired due to loss of distal sensation, increased adductor tone, poor balance
- Communication: Impaired due to mild dysphagia

### Interventions

#### Admission
- Hospitalized following pontine stroke, R sided hemiparesis; dysarthria

#### Week 1
- Initial evaluation; initial treatment; AFO for foot drop, Isometric exercise, Bed mobility, Sitting/standing balance, Begin short distance ambulation w/ front wheeled walker

#### Week 2
- NMES for dorsiflexion, Seated/standing LE strengthening, Bed mobility, NuStep, Standing balance, Long distance ambulation w/ FWW

#### Week 3
- Continue to progress interventions from week 2; 6 Minute Walk Test, Berg Balance Scale, Ambulate on different surfaces w/ FWW

#### Week 4
- Continue to progress interventions from previous weeks; Standing balance w/o UE support

#### Discharge
- Retest 6 Minute Walk Test and Berg Balance Scale; Patient discharged to home w/ FWW

### Outcomes

<table>
<thead>
<tr>
<th>Tests &amp; Measures</th>
<th>Initial Evaluation Results</th>
<th>Discharge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rolling</td>
<td>Sits/Max A both to and from hemiparetic side</td>
<td>Supervision to and from both sides</td>
</tr>
<tr>
<td>Supine =&gt; Side Lying</td>
<td>Mod/Max A</td>
<td>Independent</td>
</tr>
<tr>
<td>Supine =&gt; Sit</td>
<td>Mod/Max A</td>
<td>Independent</td>
</tr>
<tr>
<td>Transfer</td>
<td>Mod A sit =&gt; stand w/ front wheeled walker</td>
<td>Supervision/Independent w/ front wheeled walker</td>
</tr>
<tr>
<td>Gait Analysis</td>
<td>Difficulty extending R knee; Scissoring gait on R LE; R foot drop; Toe drag in swing phase; Decreased stride length; Narrow base of support</td>
<td>267&quot; w/ Front wheeled walker/cane Tracé adductor tone causing scissoring gait R LE; R foot drop (used AFO)</td>
</tr>
<tr>
<td>Balance</td>
<td>Sitting Static: Fair; CGA</td>
<td>Sitting Static: Normal</td>
</tr>
<tr>
<td></td>
<td>Sitting Dynamic: Poor</td>
<td>Sitting Dynamic: Good +</td>
</tr>
<tr>
<td></td>
<td>Standing Static: Poor</td>
<td>Standing Static: Normal</td>
</tr>
<tr>
<td></td>
<td>Standing Dynamic: Unable</td>
<td>Standing Dynamic: Good</td>
</tr>
<tr>
<td>Berg Balance Scale</td>
<td>31/56</td>
<td>35/56</td>
</tr>
<tr>
<td>6 Minute Walk Test</td>
<td>67 meters</td>
<td>81 meters</td>
</tr>
</tbody>
</table>

### Discussion

- The patient did not present with findings typically reported with a pontine stroke
- The treatments were tailored to patient presentation, not expected pontine stroke symptoms
- Strengths of report include patient’s commitment to rehabilitation
- Weakness of report is lack of knowledge of the patient’s baseline status
- Implication for clinical practice may be early implementation of gait training
- Need for further research on presentation and rehabilitation of individuals with pontine strokes

### Acknowledgements

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