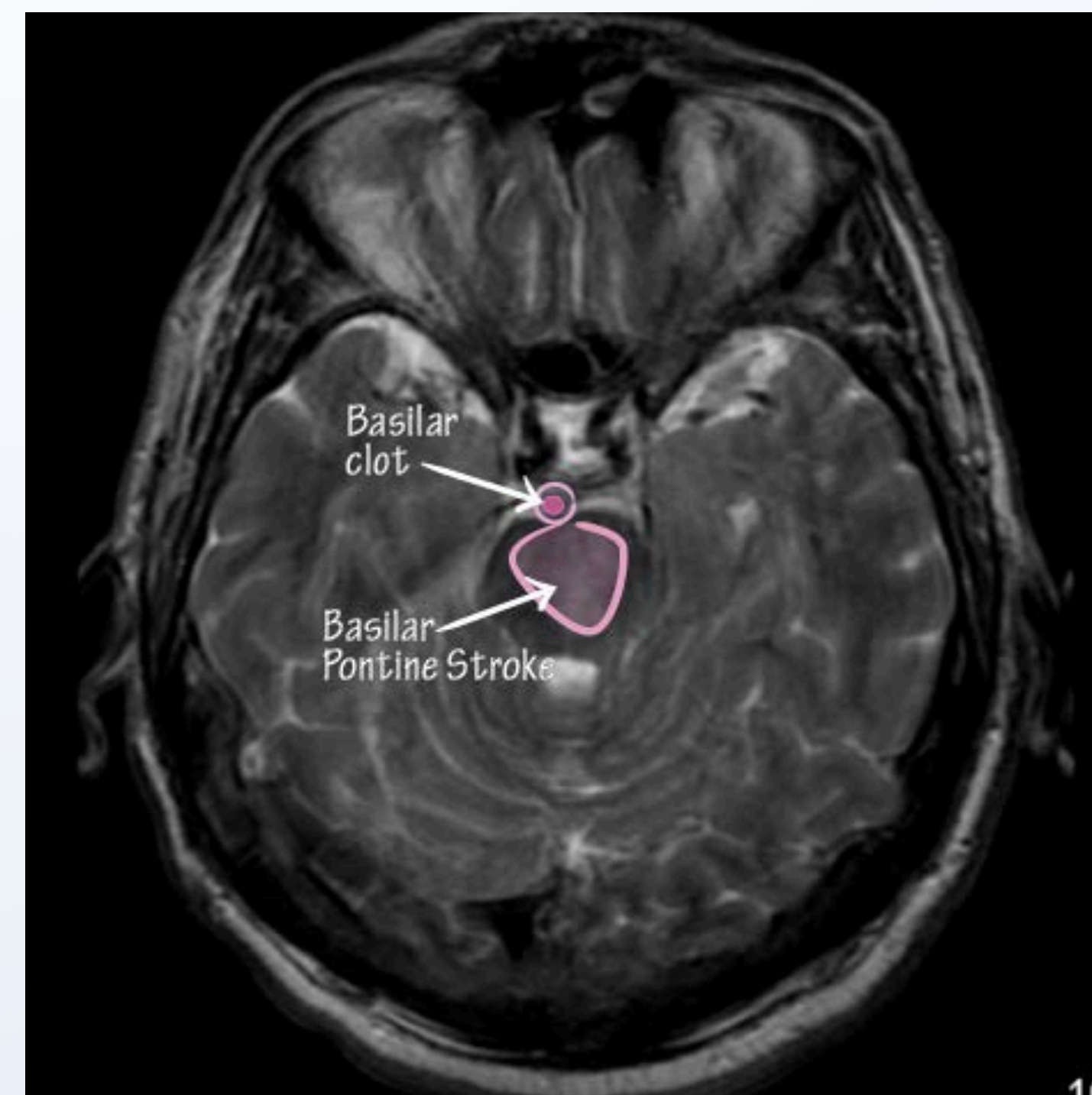


Acute Inpatient Rehabilitation of a Patient Following A Pontine Stroke With Limited Recorded Medical History: A Case Report

Background

- 795,000 strokes occur annually in the United States, or one every 4 seconds¹
- Impairments following a stroke may include deficits in strength, coordination, sensation, and language skills¹
- Expected impairments of **pontine** strokes: hemiplegia, sensorimotor dysfunction, ataxic hemiparesis, and dysarthria²
- 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

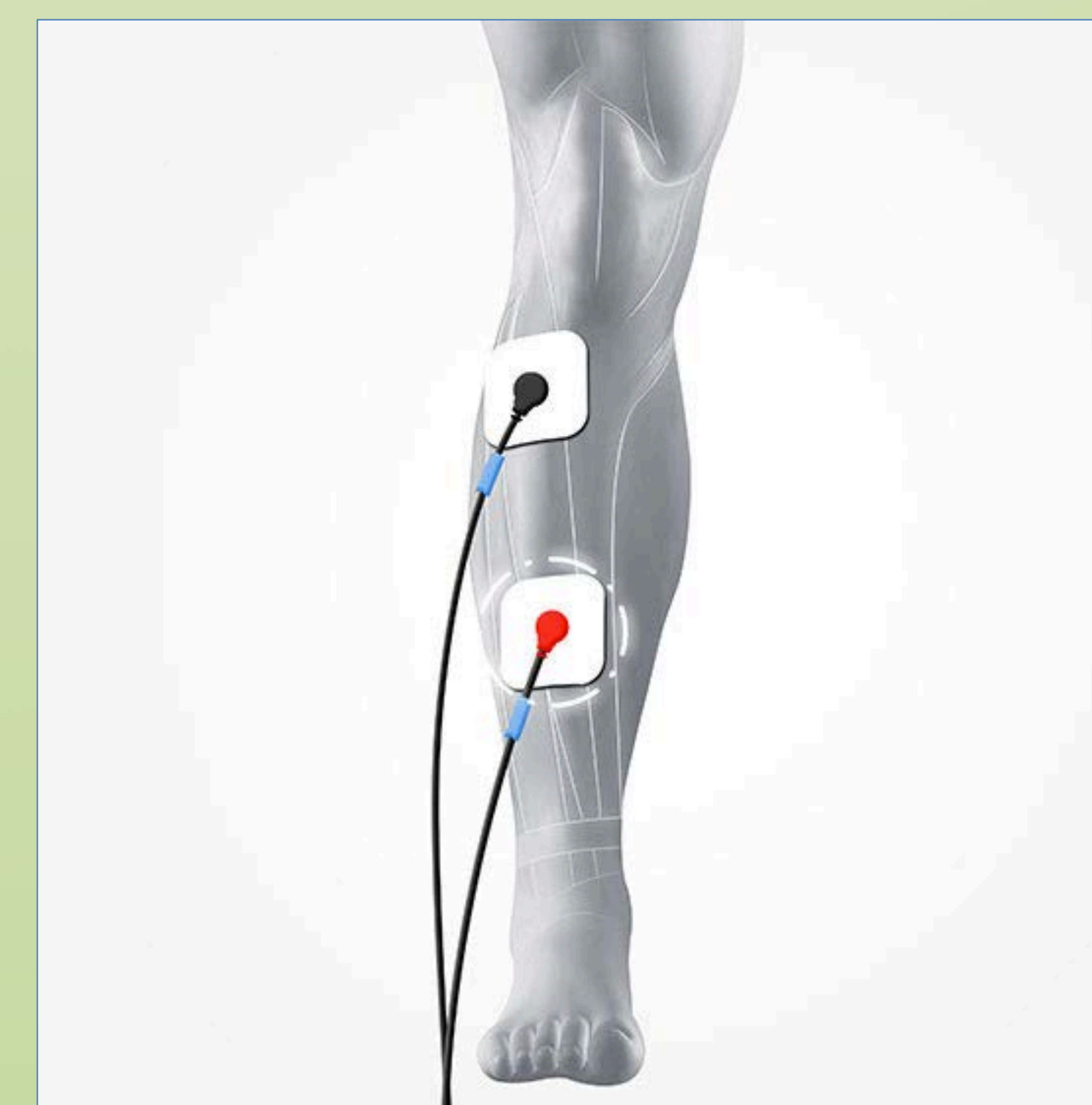
- 63 year old Caucasian male
- Sudden weakness in LE resulting in fall and inability to stand
- MRI showed cerebrovascular accident to pontine region
- Treated for 4 weeks on acute rehabilitation floor of hospital
- Reported not seeing PCP in previous 5 years
- No electronic medical record other than 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



NuStep used in weeks 2-Discharge



NMES pad placement for foot drop

Outcomes

Tests & Measures	Initial Evaluation Results	Discharge
Rolling Supine ↔ Side Lying	Mod/Max A both to and from hemiparetic side	Supervision to and from both sides
Supine ↔ Sit	Mod/Max A	Independent
Transfer	Mod A sit ↔ stand w/ front wheeled walker	Supervision/Independent w/ front wheeled walker
Gait Analysis	Difficulty extending R knee Scissoring gait on R LE R foot drop Toe drag in swing phase Decreased stride length Narrow base of support 10' w/ ModA with front wheeled walker	267' w/ Front wheeled walker/ cane Trace adductor tone causing scissoring gait R LE R foot drop (used AFO) Increased stride length Increased cadence
Balance	Sitting Static: Fair- CGA Sitting Dynamic: Poor Standing Static: Poor Standing Dynamic: Unable	Sitting Static- Normal Sitting Dynamic- Good + Standing Static- Normal Standing Dynamic- Good
Berg Balance Scale	31/56	35/56
6 Minute Walk Test	67 meters	81 meters

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

The author acknowledges Jennifer Audette, PT, PhD for assistance with case report conceptualization, Matthew Hopkins, PT, MS for assistance with patient treatment and the patient for compliance and cooperation and participation with the case report

1. Benjamin E, Blaha M, Chiuve S, et al. Correction to: Heart disease and stroke statistics—2017 update: A report from the American Heart Association. *Circulation*. 2017;136(10):e196. <https://www.ncbi.nlm.nih.gov/pubmed/28874428>. doi: 10.1161/CIR.0000000000000530
2. Kim JS, Lee JH, Im JH, Lee MC. Syndromes of pontine base infarction. A clinical-radiological correlation study. *Stroke*. 1995;26(6):950-955. <https://www.ncbi.nlm.nih.gov/pubmed/7762044>. doi: 10.1161/01.STR.26.6.950
3. <https://www.drawittoknowit.com/course/neuroanatomy/glossary/pathophysiologic-disorder/locked-in-syndrome>
4. https://www.livingmadeeasy.org.uk/product.php?product_id=0118062&groupid=1617
5. <https://www.compex.com/electrode-placements/tibialis-anterior>