

Effects of Physical Therapy on the Function of a Patient with Stage III Parkinson's Disease: A Case Report

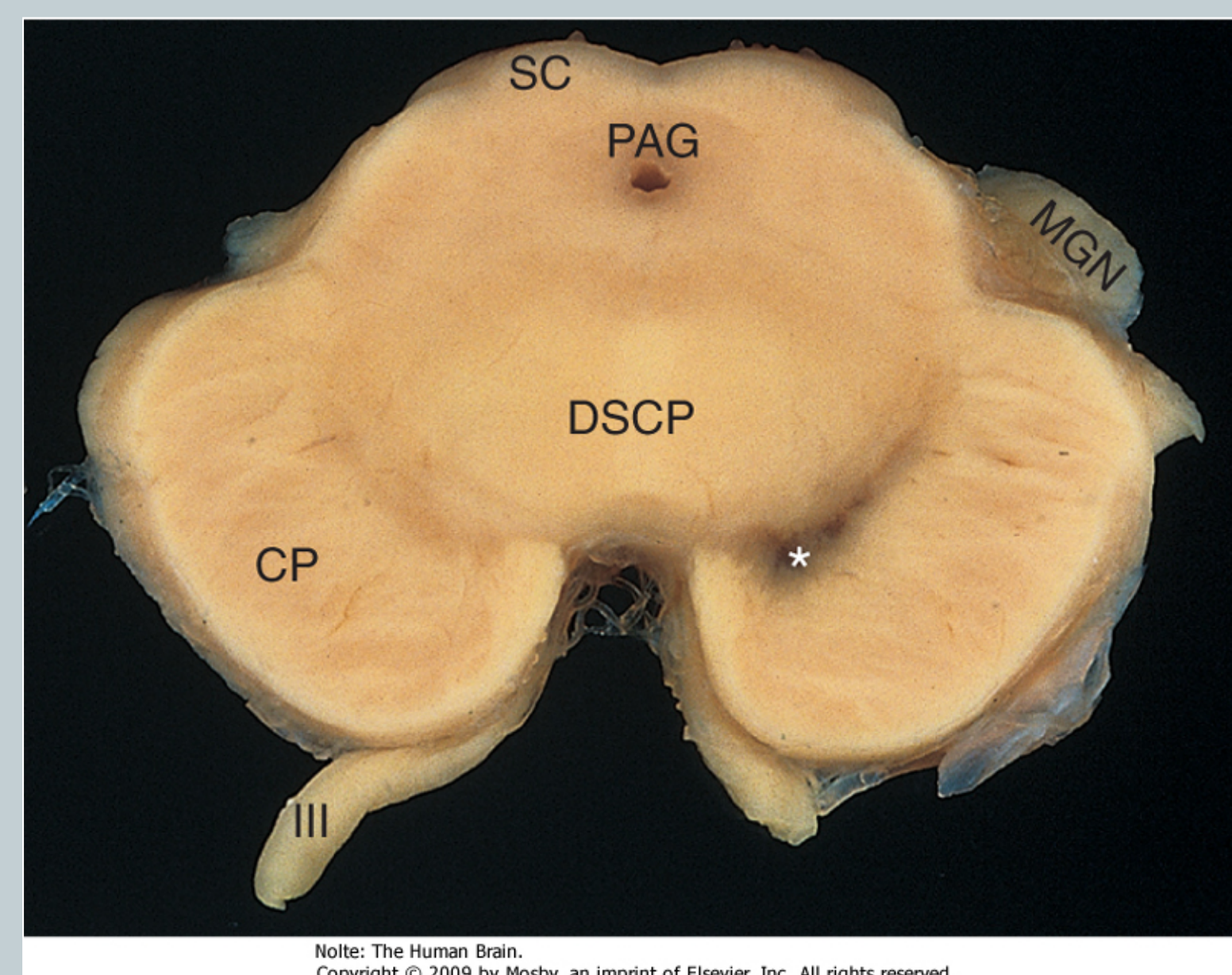


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Background

Parkinson's disease (PD) affects 1.5% of the US population over 65 years of age.¹ PD is typically diagnosed in individuals over the age of 60.^{2,3} There is no cure and the disease itself is not fatal, however, its effects can be very debilitating.¹ PD occurs when the neurons in the basal ganglia of the brain stop producing enough dopamine.⁴ Dopamine is a neurotransmitter that helps to regulate body movements and emotions.⁴ When there is a reduction of dopamine in the brain, the motor symptoms of PD begin to appear.⁴



This photo displays the midbrain of a patient with PD. The (*) shows pigmentation loss of the substantia nigra, which is part of the basal ganglia in the brain. Substantia nigra send out fibers to tissue located in both sides of the brain. There the cells release essential neurotransmitters that help control movement and coordination.⁵

Purpose

The purpose of this case was to report the outcomes of multiple physical therapy interventions including aerobic and endurance exercises, strengthening exercises, and balance and gait training on a patient with stage III PD.

Case Description

- 54-year-old female; retired insurance agent
- She was diagnosed with Parkinson's disease at age 49
- **Medical diagnosis:** Parkinson's disease, OA
- **Chief complaint:** R hip pain, loss of balance, loss of function
- Hobbies included: drawing, coloring, and painting
- Lived with parents; needed assistance with ADLs
- Used rolling walker in community, single point cane in home

Systems Review

Cardiovascular/Pulmonary System	• Unimpaired
Musculoskeletal System	• Limited hip, knee, and ankle range of motion • Unimpaired strength • Impaired flexibility of hip, knee and ankle musculature • Impaired standing posture
Neuromuscular System	• Impaired standing balance
Integumentary System	• Unimpaired
Communication	• Unimpaired
Affect, Cognition, Language, and Learning Style	• Unimpaired

Interventions

Stabilization

Flexibility

Bridging



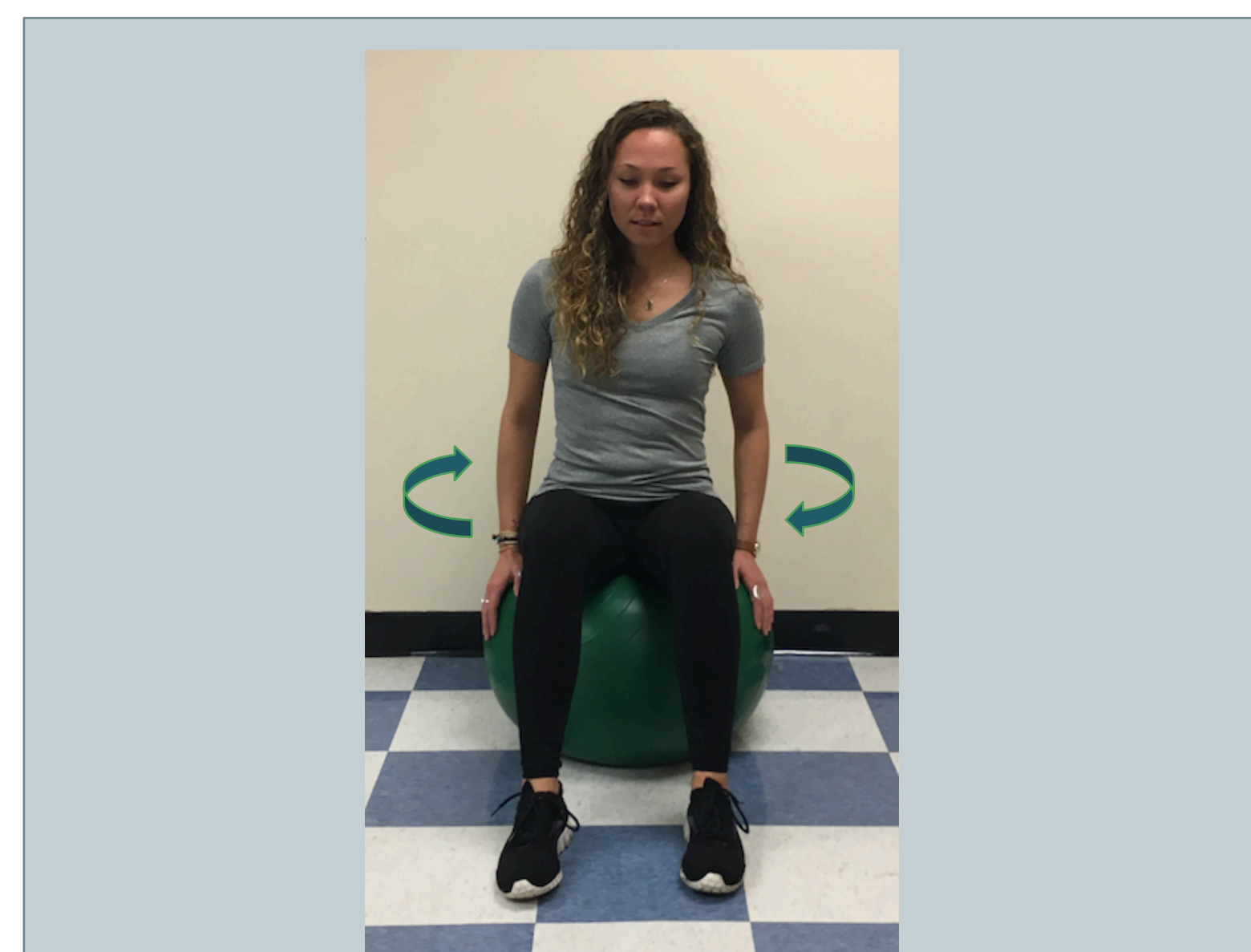
Seated Hamstring Stretch



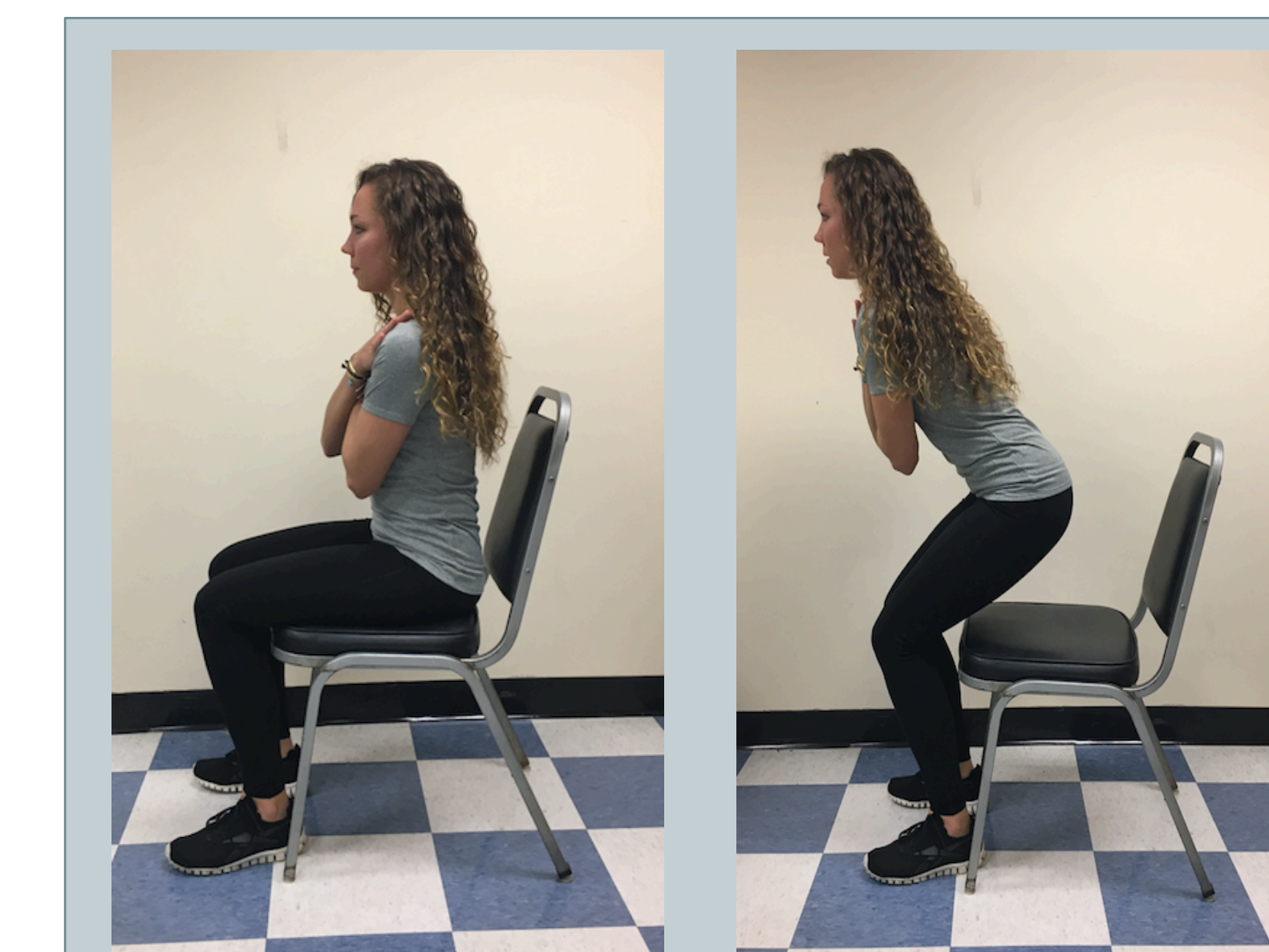
Dynamic Training: Closed Kinetic Chain Activity

Transitional Movement

Pelvic Circles



Sit to Stand



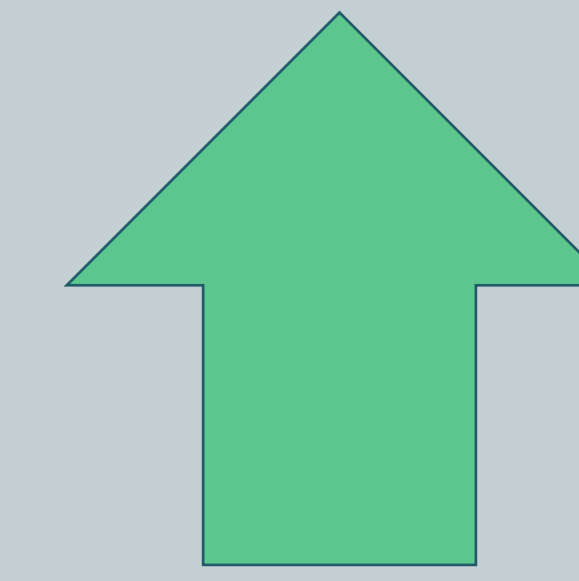
Outcomes



Increased Standing Balance



Increased ROM



Increased Flexibility

- Gait, transfers, and TUG scores remained the same
- Strength remained the same as 5/5 on the manual muscle testing scale

Lower Extremity Functional Scale

17/80

Initial Evaluation

25/80

Discharge

Discussion

This case report was designed to assess the outcomes of multiple physical therapy interventions on a patient with stage three, young-onset PD.

Future research should be conducted to further study the best physical therapy interventions needed to improve functional outcomes for patients with stage III PD.

Acknowledgements

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Resources

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