



## Multifactorial Lower Back Pain: When Motorized Mobility May Improve Quality of Life

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### CASE DIAGNOSIS

- 87 M with PMH right femoral neuropathy treated with an KAFO, CAD, and chronic atrial fibrillation
- He presented for physiatry evaluation for 6 weeks of chronic bilateral low back pain without sciatica

### CASE DESCRIPTION

- HPI:
  - 6 weeks of severe acute on chronic low back pain radiating to both legs with R>L improved with use of a walker
  - Currently uses a borrowed wheelchair for assistance with ambulation
  - Sxs alleviated with sitting, reclining, and lying down
  - Treated for chronic back pain in 2016 secondary to lumbar stenosis with left L4/L5 transforaminal epidural steroid injection
- ROS: 15lb weight loss, urinary frequency and urgency
- Social Hx: Lives in a retirement complex and was confined to his apartment due to COVID 19 prevention measures. At the time the pool and gym were closed but have reopened at the present time
- Physical Exam:
  - Gait: Symmetric gait with use of a walker; decreased stride length and distance due to pain
  - Motor:
    - RLE: 2/5 IP, abductors, extensors; 2/5 quads
    - LLE: 3/2 IP, abductors, extensors; 4/5 quads
    - Limited lumbar ROM; increased pain facet loading
  - Sensation: intact throughout all dermatomes
  - Reflexes; decreased R knee; all others normal
- Imaging: Xray demonstrated L3 compression fracture; MRI demonstrated worsening of fracture 2 months later
- Recommended Tx: Physiatry recommended a lumbar sacral orthosis and prescription for a motorized wheel chair

### CONCLUSION

Wheelchair prescriptions are important for mobility, community inclusion, mobility and independence. Multiple factors including comorbidities must be considered when deciding the type of wheelchair that is best for the patient.

### DISCUSSION AND FUTURE STUDY

- Wheelchair Prescription Factors
  - Proper fit: ill fitting wheelchairs lead to microchanges in posture and movement required for daily living. An optimal fit may prevent worsening of back pain.
  - Mobility and Community Inclusion: Due to COVID he was confined to his apartment which led to decreased mobility and further deconditioning. The muscle atrophy from greater use of his wheelchair needs to be balanced with wheelchair use for increased access to inhouse exercise facilities, access to the outdoors and facilitation of social relationships.
  - Comorbidities need to be factored into wheelchair prescriptions for manual versus motorized wheelchairs
    - The patient's multifactorial comorbidities include his decreased strength, back pain and cardiopulmonary health issues limiting his use of a manual wheelchair long distances throughout his retirement complex.
- Future areas of study
  - How intermittent motorized wheelchair usage may aid in prevention of further deconditioning

### REFERENCES

- Sabol, Timothy P, and Evelyn S. Haley. "Wheelchair Evaluation for the Older Adult." *Clinics in Geriatric Medicine*, vol. 22, no. 2, 2006, pp. 355–375., doi:10.1016/j.cger.2005.12.013.
- Sonenblum, Sharon E., et al. "Effects of Wheelchair Cushions and Pressure Relief Maneuvers on Ischial Interface Pressure and Blood Flow in People With Spinal Cord Injury." *Archives of Physical Medicine and Rehabilitation*, vol. 95, no. 7, 2014, pp. 1350–1357., doi:10.1016/j.apmr.2014.01.007.
- Sprigle, S. "Measure It: Proper Wheelchair Fit Is Key to Ensuring Function While Protecting Skin Integrity ." *Advances in Skin & Wound Care*, vol. 27, no. 12, 2014, pp. 561–572., doi:10.1097/01.asw.0000457274.38718.3c