

Glioblastoma of the Spine: A case of successful rehabilitation

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Introduction

Primary glioblastoma (GBM) of the spine is one of the rarest and most aggressive types of cancers of the spinal cord, accounting for approximately 1.5% of all spinal cord tumors (2,6). Standardized rehabilitation protocol for GBM of the brain has been developed, however, there is a gap in literature for supporting a standard of care for GBM of the spine (4). Our case study is an imperative tool which demonstrates successful rehabilitation and its positive outcomes. We based our rehabilitation program on a multidisciplinary evidence-based practice using spine cancer and traumatic spinal cord injury as our reference (5,3).

Background of our client

- 43 year-old male initially diagnosed with adenocarcinoma of the spine. Mass found at C3-C6 with subsequent laminectomy and mass removal in February 2021. Later, diagnosed with GBM of the spine during inpatient rehab stay.
- Baseline function: independent with all ADLs, IADLs, working full-time and married to supportive wife.

Plan of care

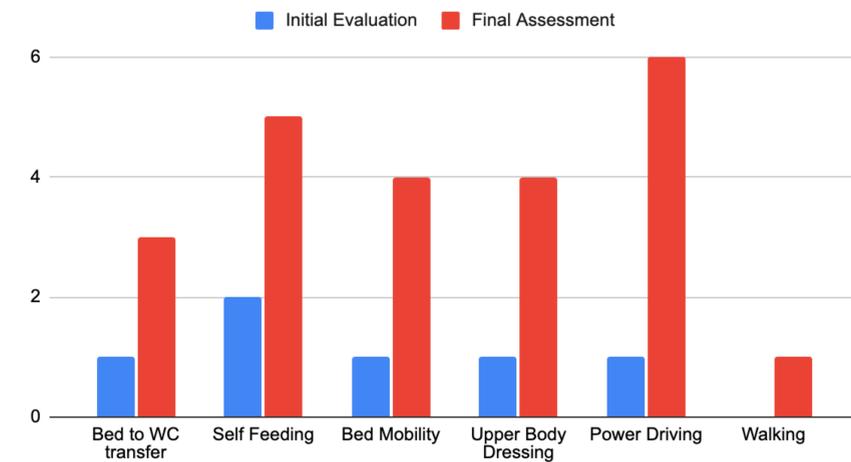
Treatment interventions:

- Spasticity and pain management
- Neuromuscular re-education of upper extremities/lower extremities/trunk
- Transfer training between bed to power wheelchair
- Bodyweight support walking
- Functional electrical stimulation for upper extremities including FES UE bike
- ADL retraining
- Developmental skills: bed mobility, trunk control and upright sitting tolerance



Activity	Evaluation performance score	Discharge performance score
Bed to wheelchair transfer	Total assist with 2 people, using mechanical lift	Minimal-moderate assist squat-pivot
Self-feeding	Maximal assist	Set-up using left upper extremity
Bed mobility	Total assist with 2 people, needing cervical stabilization	Minimal assist for all components including rolling, sitting up and laying back down
Upper Body Dressing	Total assist	Minimal assist
Power wheelchair mobility	Total assist	Independent
Walking	Unsafe to trial	Ambulate 10ft with 2 person assist

QI Score Changes



Comparing knowledge on GBM of the Brain Protocol vs GBM of the Spine Protocol

	GBM of Brain	GBM of Spine
Surgical Protocol	Maximum resection	*limited to no research evidence
Post Surgical Protocol	Daily temozolomide and radiotherapy followed by adjuvant temozolomide (2).	*limited to no research evidence
Rehabilitation Protocol	4-6 week short term inpatient therapy is effective for improving quality of life in GBM of the brain patients (1).	*limited to no research evidence
Follow Up Protocol	Routine surveillance MRI of brain.	*limited to no research evidence

	Daily Schedule
8am	Breakfast in bed
9am	Transfer with nursing or therapy to power wheelchair
10am	Physical Therapy
11am	Occupational Therapy
12pm	Lunch in chair
1pm	Therapy (PT or OT)
2pm	Neuropsychology (1-3x a week)
3pm	Spinal Cord Injury Lecture Series (3x a week)
4pm	Bowel Program
5pm	Dinner in wheelchair
6pm	Transfer back to bed
7- 9pm	Awake in bed until ~10pm

Family training and discharge equipment:

- Transfer training with wife and hired caregiver
- Range of motion for contracture prevention and tone management
- Customer power wheelchair and bathing equipment orders



References

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