

Public Abstract

First Name:Jeffrey

Middle Name:B

Last Name:Krug

Adviser's First Name:N. Scott

Adviser's Last Name:Litofsky

Co-Adviser's First Name:Anand

Co-Adviser's Last Name:Chandrasekhar

Graduation Term:FS 2008

Department:Neuroscience

Degree:MS

Title:FUNCTIONAL OUTCOME AND SELF-PERCEIVED OVERALL HEALTH STATUS FOLLOWING SURGERY TO REMOVE PRIMARY BRAIN TUMOR

**OBJECTIVE:** Impaired functional abilities, especially those associated with ambulation and standing balance, are common sequelae of brain tumors. A majority of research regarding the effectiveness of surgery in treating individuals with brain tumor (BT) has measured length of survival, recurrence rate, and amount of tumor removed. Objective measurements of functional abilities and self-perceived overall health status (OHS) prior to and after surgery are important aspects of treatment, yet these areas have been inadequately studied.

**METHODS:** 9 adults with diagnosis of primary brain tumor were assessed prior to, immediately following, and at 3 months after surgery using the Timed Up-and-Go (TUG) and Tinetti Performance-Oriented Mobility Assessment (Tinetti) and Medical Outcomes Study 36-Item Short-Form Health Survey (SF-36).

**RESULTS:** Repeated measures ANOVA demonstrated significant differences in all outcome measures from pre- to immediately post-surgery with OHS (SF-36:  $df=1$ ,  $F=6.3$ ,  $p=0.04$ ) and physical functioning (TUG:  $df=1$ ,  $F=6.4$ ,  $p=0.05$ ; Tinetti:  $df=1$ ,  $F=7.2$ ,  $p=0.03$ ) and from immediately post-surgery to 3 months post-surgery, ( SF-36:  $df=1$ ,  $F=14.8$ ,  $p=0.006$ ; TUG:  $df=1$ ,  $F=24.3$ ,  $p=0.003$ ; Tinetti:  $df=1$ ,  $F=39.0$ ,  $p<0.001$ ).

From pre-surgery to 3 months post-surgery, no significant difference was noted for any outcome measure (SF-36:  $df=1$ ,  $F=2.3$ ,  $p=0.18$ ; TUG:  $df=1$ ,  $F=0.03$ ,  $p=0.86$ ); Tinetti:  $df=1$ ,  $F=3.4$ ,  $p=0.11$ ). All measures<sup>â€™</sup> post-surgery scores significantly correlated post-surgery. This included the two physical functioning measures (TUG and Tinetti) immediately post-surgery ( $r=-0.833$ ,  $p=0.01$ ) and 3 months post-surgery ( $r=-0.966$ ,  $p=0.0$ ). It also included the OHS and physical functioning measures: SF-36 and TUG ( $r=-0.762$ ,  $p=0.028$ ) and SF-36 and Tinetti immediately post-surgery ( $r=0.883$ ,  $p=0.002$ ); SF-36 and TUG ( $r=-0.845$ ,  $p=0.004$ ), and SF-36 and Tinetti 3 months post-surgery ( $r=0.849$ ,  $p=0.004$ ).

**CONCLUSION:** Physical functioning and self-perceived OHS are closely linked. It is recommended that future studies of surgery for brain tumor use measures of physical functioning and OHS. The TUG, Tinetti, and SF-36 are appropriate for these purposes.