Determinants of Quality of Life in Patients with Skull Base Chordoma

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Background

Skull base chordoma (SBC) affects young patients in their productive years. Modern treatments such as surgical resection combined with radiation therapy have extended survival. Therefore, a determination of the factors affecting the quality of life (QOL) in these patients is important to guide ongoing care.
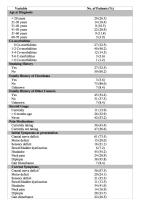
Objectives

1. To measure functional outcome and quality of life in patients with skull base chordoma.
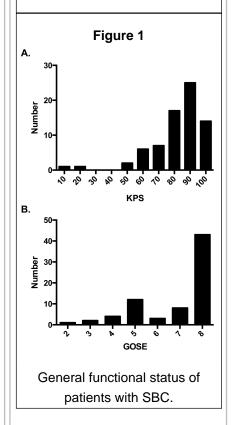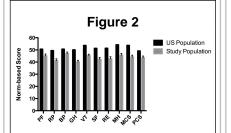2. To identify determinants of quality of life in these patients.

Methods

Internet-based cross-sectional survey, collecting detailed data for 83 individual patients. Demographic and clinical variables were evaluated. Functional outcomes were determined by KPS and GOSE. QOL was measured using the short-form 36-item status survey questionnaire (SF-36), and depression was assessed by PHQ-9 questionnaire. Univariate and multivariate analysis was performed to identify determinants of the physical (PCS) and mental (MCS) components of the SF-36.
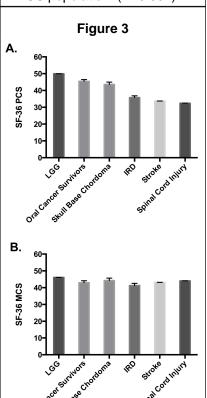
Results

Table 1. Clinical characteristics.

Figure 1

General functional status of patients with SBC.
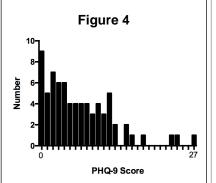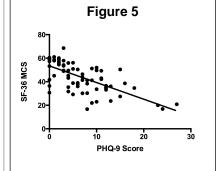
Figure 2

SF-36 measures in SBC patients. The mean SF-36 PCS was 43.6 (SD 11.8) and MCS was 44.2 (SD 12.6) and both are significantly lower than norms for the general US population (P<0.001).

Figure 3

Quality of life in SBC patients versus other disease states.

Figure 4

The median PHQ-9 score was 5 (Range 0-27, IQR 8). Moderate to severe depression was observed in 29%.

Figure 5

Correlation between quality of life (SF-36 MCS) and depression symptoms (PHQ-9) in SBC patients, Rho -0.674, P<0.001.

Table 2. Linear regression analysis for factors predicting SF36-PCS in SBC patients.

Predictor Variable	Scoring	Unstandardized B-value	P-value
(A) Sensory deficit at presentation	Yes =1 / No = 2	7.54	0.015
(B) Bowel or bladder dysfunction currently	Yes = 1 / No = 2	9.033	0.020
(C) Taking Pain medication	Yes =1 / No = 2	6.18	0.026
(D) Taking Corticosteroid	Yes = 1 / No = 2	3.475	0.054

SF-36 PCS = -5.602 + A score*7.54 + B score*9.033 + C score*6.18 + D score*3.475

Conclusions

Good funcitonal outcome, but lower quality of life in SBC patients compared to the general US population.

The determinants of QOL are: 1) neurological deficits (sensory disturbance and bowel/bladder dysfunction), 2) pain medication use, 3) corticosteroid use, and 4) level of depression as scored by PHQ-9.

Recommendations

To enhance health-related QOL in SBC patients we recommend the following:

• Surgical intervention before the tumor bulk produces ataxia, pyramidal weakness, sensory deficits, or bowel/bladder dysfunction.

• Evaluate and optimize treatment for post-operative and chronic pain

• Screen for symptoms of depression and refer for evaluation and treatment

• Encourage smoking cessation

Acknowledgements