

Chordomas of the Skull Base, Mobile Spine, and Sacrum: An Epidemiologic Investigation of Presentation, Treatment, and Survival

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Introduction

The current study examined chordomas of the skull base, mobile spine, and sacrum, in order to: a) analyze trends in radiation and surgery over time and b) determine location-based survival predictors.

Methods

A retrospective cohort study of the Surveillance Epidemiology and End Results (SEER) database from 1973-2013 was conducted. All patients had histologically confirmed chordomas. The primary exposure of interest was tumor location classified into: skull base, mobile spine, or sacrum. The principal outcome measure was overall survival (OS).

Results

The cohort included 1,616 patients: skull base (664), mobile spine (444), and sacrum (508). Skull base tumors presented earliest in life (47.4 years) and sacral tumors presented latest (62.7 years). RT was administered to 697 (43.1%) patients. Rates of RT remained stable for skull base and mobile spine tumors, whereas rates of RT declined for sacral tumors ($z = -2.74$, $p = 0.006$). A total of 1186 (73.4%) patients underwent surgical resection. Rates of surgical resection remained stable for skull base and sacral tumors, but for mobile spine tumors, a slight decrease in surgical resection rate was seen ($z = -2.00$, $p = 0.046$). Skull base chordomas had the longest median survival (162 months) compared to mobile spine (94 months) and sacral tumors (87 months). On multivariate cox regression, having a spouse was associated with improved OS for skull base tumors, whereas age and metastases was associated with decreased survival. Sacral chordomas were the only location for surgical resection to maintain survival advantage after multivariable analysis (HR 0.48, 95%CI 0.34, 0.69, $p < 0.001$).

Conclusions

Skull base tumors presented the

Learning Objectives

To improve our epidemiologic understanding of skull base, mobile spine, and sacral chordomas by assessing changes in radiation and surgical resection over time and elucidating factors associated with overall survival.

References