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Abstract: Nodal Metastasis of Parotid Mucoepidermoid Carcinoma

Background: Mucoepidermoid carcinoma is the most prevalent subtype of malignant parotid cancer; however, there is inconclusive data about its absolute and relative rate of nodal metastasis, risk factors, and survival implications to guide clinical management. We aim to determine the rate of nodal metastasis in parotid gland mucoepidermoid carcinoma in comparison with other malignant parotid gland tumors, identify risk factors associated with increased mucoepidermoid nodal metastasis, and determine association between nodal metastasis and survival length.

Methods: This is a retrospective, archival research study using the Surveillance, Epidemiology and End Results 18 (SEER 18) database. 1249 patients were identified with parotid mucoepidermoid carcinoma from 1988-2015. Variables included were age at diagnosis, race, sex, staging, cause of death, nodes positive, nodes examined, tumor size, survival months and histological grades. Statistical analysis was performed with Statistical Package for the Social Sciences (SPSS). Binomial logistic regression was performed to evaluate nodal metastasis. Odds ratios were calculated for the risk factors. Median and mean survival were calculated and Kaplan-Meier plot analysis performed for overall and disease-specific survival.

Results: The overall rate of nodal metastasis for parotid mucoepidermoid carcinoma was 16.3%, as compared to adenoid cystic carcinoma 20.7% and acinar cell carcinoma's nodal metastasis rate of 10.4%. Increased age and increased tumor size and staging was associated with increased incidence of nodal metastasis, and males were associated with increased risk. Increased nodal metastasis, age and tumor size was also associated with decreased survival time. Positive metastasis was linked on average to a decrease of 7.5 months, decreasing survival time from 51.4 months to 43.0 months.

Conclusions: Parotid mucoepidermoid carcinoma carries significant risk of metastasis to lymph nodes and decreased survival, suggesting the importance of nodal evaluation, dissection and adjuvant therapy in treatment of this subset of parotid gland cancer. Demographic risk factors with increased rates of nodal metastasis include male gender and older age, while oncologic risk factors include increased tumor size.