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Examination of Factors Associated with Lymph Node Metastases in Lung Carcinoids

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BACKGROUND: Pulmonary carcinoid tumors, including typical and atypical carcinoids, have a decreased incidence of lymph node (LN) and distant metastases compared to their high-grade counterparts. We aimed to (i) examine the clinicopathologic features associated with LN involvement in lung carcinoids and (ii) describe the postoperative management of patients with LN metastases.

METHODS: We identified 102 patients who underwent surgical resection at our institution from 1998-2017. The following data was abstracted, with LN map and staging assessed using AJCC version 7: clinical features (age, sex, race, prior malignancy, smoking history), tumor features (functional syndrome, histology, pathologic size, central vs. peripheral location, laterality), pre-operative workup performed (imaging types and suspicion of LN metastases on imaging), surgery (number of nodes and stations sampled, margin status, surgical approach, and type of surgery), and recurrence outcome. These features were examined between patients with and without LN metastases using the Wilcoxon test (continuous variables) and Fisher's exact test (categorical variables).

RESULTS: Of the 102 patients, 87 (85.2%) had typical carcinoids and 16 (15.7%) had atypical carcinoids. Seventeen (16.6%) patients had at least one positive LN, including 9 with N1 and 8 with N2 disease. None of the patients with LN involvement received adjuvant therapy. In a univariate analysis, only recurrence of lung carcinoid tumor was significantly associated with LN metastases (p=0.01). There was a trend for association of performance of pre-operative somatostatin

receptor imaging (OctreoScan or 68Gallium-DOTATATE PET) and LN metastases (N0 15% vs. N1/N2 35%, p=0.07).

CONCLUSION: In our single institution study, the rate of LN metastases among patients with lung carcinoids was 16.6%. There were no significant clinicopathologic features associated with LN metastases in this series. It is notable that none of the patients with LN metastases received adjuvant therapy. Further data is needed to elucidate the optimal post-surgical management of these patients.