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Predictors of Lymph Node Sampling and Nodal Metastases in Patients with Pancreatic Neuroendocrine Tumors

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Background: Given their ill-defined natural history and the unclear role of nodal metastases in prognosis, pancreatic neuroendocrine tumors (PNETSs) have no consensus staging system. We hypothesized this conflict might be due to inconsistent lymph node evaluation for patients undergoing PNET resections.

Methods: Retrospective review of the University of California, San Francisco pathology database to include patients who underwent PNET resection from January 1, 1988 to March 15, 2010 (n = 149). Univariate analysis and multivariate logistic regression were used to identify predictors of lymph node sampling and nodal metastases.

Results: 57% of patients had lymph nodes evaluated; excluding enucleations, the sampling rate was 75%. Tumor size, distant disease, non-functioning tumors, and operation type were associated with lymph node sampling on univariate analysis. On multivariate analysis, only enucleation predicted sampling (OR 0.05, p-value <0.01). Distant disease was the sole predictor of lymph node metastasis (OR 3.80, p-value 0.02), whereas tumor size did not (p-value 0.48).

Conclusion: Lymph nodes are not evaluated in many PNET resections. Consequently, patients may be understaged and not captured in national registries leading to inaccurate data upon which to build prognostic models. We recommend that surgeons

work closely with pathologists to ensure lymph nodes are evaluated in patients undergoing resection of PNETs.