Diagnostic Value of Neck Node Status Using ^{18}F-FDG PET for Salivary Duct Carcinoma of the Major Salivary Glands

Ja Young Kim, et al, Bundang CHA Hospital, School of Medicine, CHA University, Seongnam, Korea; CHA University, Seoul, Korea, *The Journal of Nuclear Medicine*, vol. 53, no. 6, 881-886, June 1, 2012.

Abstract

^{18}F-FDG PET and PET/CT have shown clinical usefulness in the initial staging and follow-up of patients with salivary malignancy. Therefore, we evaluated the utility of ^{18}F-FDG PET in preoperative staging, determining the extent of neck node involvement, and surgical planning for patients with salivary duct carcinoma (SDC) of the major salivary gland.

Methods: We evaluated 18 patients with SDC who were assessed by ^{18}F-FDG PET and CT before surgery. The sensitivity, specificity, accuracy, and predictive values of CT and PET/CT for predicting the primary tumor site and determining the extent of neck node involvement at each dissected neck level were evaluated by comparing imaging findings with pathologic nodal stage.

Results: The median maximum standardized uptake value of the primary lesions and cervical nodes were 4.7 (range, 1.8–12.1) and 5.8 (range, 1.7–13.0), respectively. The sensitivities of ^{18}F-FDG PET and CT for predicting the primary tumor site were 100% (18/18) and 94.4% (17/18), respectively. In analyzing cervical lymph nodes at 73 dissected neck levels, ^{18}F-FDG PET had a sensitivity of 76.1%, a specificity of 96.3%, a positive predictive value of 97.2%, and a negative predictive value of 70.3%; the corresponding values for CT were 39.1%, 92.6%, 90.0%, and 47.2%, respectively. The sensitivity and negative predictive value were significantly higher for ^{18}F-FDG PET than for CT ($P < 0.001$ and $P = 0.03$, respectively).^{18}F-FDG PET determination of the extent of neck node involvement changed the neck dissection regimen in 5 patients (27.8%).

Conclusion: SDC of the major salivary gland is a highly metabolic tumor with high ^{18}F-FDG uptake. ^{18}F-FDG PET is useful for evaluating neck node status and for determining surgical planning in patients with major salivary gland SDC.

The Journal of Nuclear Medicine, vol. 53, no. 6, 881-886, June 1, 2012