

The impact of FDG-PET in the management of patients with salivary gland malignancy

Hideki OTSUKA,^{*,**} Michael M. GRAHAM,^{*} Masahiro KOGAME^{**} and Hiromu NISHITANI^{**}

**Division of Nuclear Medicine, Department of Radiology, University of Iowa,
Roy J. and Lucille A. Carver College of Medicine, Iowa, USA*

***Department of Radiology, University of Tokushima School of Medicine, Tokushima, Japan*

Objective: The aim of this study was to evaluate the impact of FDG-PET in the management of patients with salivary gland malignancy. **Patients and Methods:** We performed 45 FDG PET studies in 31 patients with salivary malignant tumors, using PET (33 studies) and PET/CT (12 studies). Patients comprised 21 males and 10 females with a mean age of 69 y (range 38–89). Nineteen patients had a single study, ten patients had 2 and two patients had 3 studies. Twelve studies were performed for initial staging and 33 studies for restaging. Four patients of the initial staging group were restaged with PET after therapy. Histology consisted of 8 adenocarcinomas, 8 squamous cell carcinomas, 4 adenoid cystic carcinomas, 4 carcinoma ex pleomorphic adenomas, 2 mucoepidermoid carcinomas, 2 poorly differentiated carcinomas, 1 salivary duct carcinoma, 1 lymphoepithelial carcinoma and 1 melanoma. PET findings were reviewed with the clinical and radiologic findings and the impact of PET on staging and patient management was determined. **Results:** In the initial staging group, all 12 primary lesions (100%) showed positive FDG uptake (5 squamous cell carcinomas, 2 adenocarcinomas, 2 poorly differentiated carcinomas, 1 carcinoma ex pleomorphic adenoma, 1 salivary duct carcinoma, 1 lymphoepithelial carcinoma). Three patients (25%) had FDG positive distant disease (liver, bone, lymph nodes); surgery was canceled and therapy changed to chemoradiation. One patient (9%) with no FDG uptake in the neck nodes avoided a planned neck dissection. In the restaging group (33 studies in 23 patients), 5 patients (22%) had FDG positive distant disease, which changed the treatment from surgery to chemoradiation or other. A second primary lesion was detected in one patient (4%). One patient (4%) with clinically suspected recurrence was able to avoid other invasive procedures because of the negative PET. Overall, FDG PET resulted in a major change in management in 11 of 31 patients (35%). **Conclusion:** This study shows that FDG PET has a significant impact on the management of patients with salivary malignant tumors in both the initial staging and restaging.

Key words: FDG-PET, salivary gland malignancy, patient management