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INTRODUCTION
After radiation treatment, head and neck cancer patients often undergo FDG PET and CT imaging to survey for nodal metastasis. Inconsistencies among these make it difficult to decide if surgery is necessary. Our goal is to determine the accuracy of these modalities to predict histopathologic findings.

METHODS AND MATERIALS
• From 2000-2011, there were 486 patients with head and neck cancer with a FDG PET scan through an existing database through the Nuclear Medicine division at our institution.

• PET positivity were defined as a standardized uptake value (SUV) of ≥ 3.0. CT positivity was defined as lymph node size of ≥ 1 cm.

• We included those with squamous cell carcinoma who had undergone a neck dissection after their post-radiation PET and CT scan.

RESULTS
• Of the 64 patients with post-radiation PET and CT scans, 16 underwent a neck dissection after imaging.

• When either PET or CT was positive, all 9 cases of malignancy were identified (sensitivity 100%), and the positive predictive value was 69.2% (9/13). Of the 7 with benign pathology, 3 were negative for both modalities (specificity 42.8%). In this setting, the negative predictive value was 100% (3/3).

• Eight cases had discrepant results between PET and CT imaging. For these, the positive and negative predictive values with PET imaging alone were 33% and 20%, while with only CT imaging, they were 80% and 66%, respectively.

DISCUSSION
The results of our study, and those of earlier ones, suggest that there is a high negative predictive value when using the combination of FDG-PET and CT in the evaluation of neck disease in post-radiated patients. When PET and CT results conflict (8), CT imaging appears to have a higher predictive accuracy compared to PET scans.