Case of the Month—May 2005

FDG-PET for Staging Head and Neck Cancer

History
This 57-year-old male presented with a right neck mass. Biopsy of this mass confirmed poorly differentiated carcinoma. Further evaluation revealed primary right nasopharyngeal cancer. Initial clinical staging was Stage IIB (T1N1M0). A PET scan was requested for further evaluation.

PET Findings
The PET study revealed foci of intense FDG uptake in the nasopharynx and adjacent right neck. These foci are consistent with primary cancer with right cervical lymph node metastasis. In addition, the PET scan identified multiple foci of hypermetabolism involving the left hip, sacrum, T2, and both proximal femora, that are consistent with osseous metastasis.

Follow-up
A CT of the abdomen and pelvis demonstrated a large lytic lesion in the left hip that is consistent with metastatic bone lesion.

How Did PET Help?
The PET scan correctly identified distant bone metastasis and upgraded this patient’s cancer staging. Before the PET study, this patient was staged as IIB; this staging level was upgraded to Stage IV due to the multiple distant bone metastases seen on PET. The patient’s radiation treatment plan also changed based on the PET finding. The initial plan focused on neck treatment, but after additional lesions were identified by the PET study, the patient underwent additional treatment for the left hip.

Discussion
Yen and others studied the value of 18F-FDG-PET in the detection of stage M0 carcinoma of the nasopharynx\(^1\). They found that the patient-based sensitivity and specificity of 18F-FDG-PET for distant metastases were 100% and 86.9%, respectively. They concluded that the ability of 18F-FDG-PET to detect occult distant metastases is valuable in avoiding aggressive locoregional radiotherapy in some nasopharyngeal cancer patients, especially those with with primary disease at a nodal stage of N2-3.


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