

Case of the Month—November 2005

## FDG-PET Detects Unknown Primary Head and Neck Cancer

### History

The patient is a 36-year-old male who initially presented with a mass on the right side of his neck. He was treated with antibiotics for two months and showed no improvement. The patient then underwent right neck mass resection. Cytology analysis revealed squamous cell carcinoma. Further work-up with clinical exam and CT of the neck failed to detect the primary lesion. A PET scan was ordered.

### Finding

An FDG-PET whole-body scan demonstrated asymmetric uptake in the tonsils, with more uptake on the right side. Suspicion was raised that the primary lesion was located in the right tonsil.

### Follow-up

Based on the FDG-PET finding, the patient underwent a tonsillectomy. The primary lesion was

identified in the right tonsil (see arrow).

### How Did PET Help?

FDG-PET helped to identify the primary head and neck tumor that was not detected by clinical exam or CT scan. Additionally, the PET findings were incorporated into the radiation therapy plan, helping to reduce radiation treatment volume as well as to spare normal tissues from radiotherapy sequelae.

### Discussion

The management of patients with metastases of unknown primary origin is often a clinical challenge. In a study of patients with Cancer of Unknown Primary (CUP), Bohuslavizki et al found FDG-PET to be a valuable diagnostic tool, detecting the unknown primary tumor in about one-third of all patients investigated. The authors also found that FDG-PET assisted in guiding biopsies for histologic



An FDG-PET study shows a primary lesion in the right tonsil.

evaluation and in selecting appropriate treatment protocols for these patients<sup>1</sup>.

(1) Bohuslavizki, Karl H. et al, "FDG-PET Detection of Unknown Primary Tumors," *The Journal of Nuclear Medicine*, May 2000, 41 (5): 816-822.

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