

Case of the Quarter—March 2010

Management of Colorectal Cancer and Solitary Metastatic Lesion with FDG-PET/CT

History and Findings

The patient is a 37-year-old woman with a history of colorectal cancer initially evaluated by PET in February 2008. The patient then underwent preoperative radiation therapy, followed by surgical resection of rectal cancer in early June 2008 and a course of systemic chemotherapy. A follow-up PET in October 2008 showed resolution of previously identified FDG uptake in the pelvis, consistent with treated malignancy. In both of

several months after this resection in September 2009 showed no evidence of recurrence. A follow-up PET/CT has been scheduled for June 2010.

How Did FDG-PET/CT Help?

FDG-PET played a critical role in initial staging of the patient's colorectal cancer and in monitoring the patient. Additionally, PET/CT helped in characterizing the SPN as suspicious for tumor.

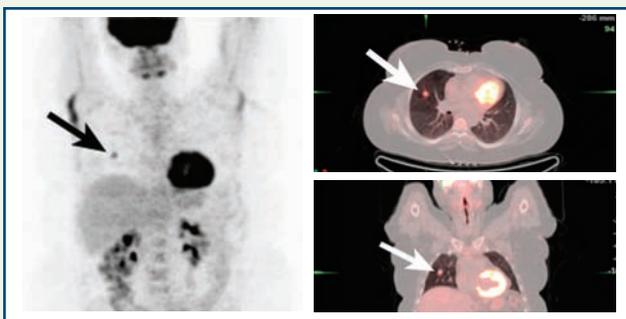


Figure 1. PET/CT June 26, 2009, demonstrating intense FDG uptake at SPN

the 2008 PET studies there was no evidence of metastatic disease in the upper abdomen or chest. However, subsequent CT studies in April and June of 2009 showed an enlarging solitary pulmonary nodule (SPN) in the right lung. A PET/CT conducted in late June 2009 showed a new, intense area of metabolic activity in the right upper lobe that was highly suspicious for malignancy, corresponding to the 11mm SPN seen on CT (Figure 1). This lung lesion was resected in July 2009. A follow-up PET/CT was performed in September 2009, with no new FDG uptake seen in the lung and no evidence of residual or recurrent malignancy (Figure 2).

Follow-Up

Pathology of the resected lung lesion indicated a metastatic adenocarcinoma consistent with a colorectal primary. As noted above, a follow-up PET/CT conducted



Figure 2. PET/CT September 11, 2009, post-surgical resection of nodule, no evidence of recurrence or residual malignancy

or radiofrequency ablation of a lesion in the lung, liver, or a lymph node. If the metastasis is truly solitary, outcomes have been promising. In this case, PET/CT characterized the nodule as suspicious for tumor while it was still relatively small and at an early stage of metastatic disease. PET/CT helped confirm that the SPN was a solitary lesion and thus eligible for metastasectomy. Note should be made that nodules less than 1cm in size are too small to be reliably characterized by PET/CT.

Savino G, Di Veronica A, Martina F, Bellitti A, Basile M, Cozza G, Campioni P., "Lung metastases from rectal adenocarcinoma: about the best diagnostic strategy." *Rays*. 2004 Apr-Jun;29(2):167-74.

Klippenstein DL, Lamonica DM., "Preoperative imaging for metastasectomy." *Surg Oncol Clin N Am*. 2007 Jul;16(3):471-92, vii.

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Discussion

Clinicians have recognized the role that FDG-PET/CT can play in the management of a solitary metastatic lesion, particularly in determining if patients are candidates for metastasectomy

www.nepetimaging.com

NEPET at Holy Family Hospital
 70 East Street
 Methuen, MA 01844
 (978) 689-4738

NEPET of Greater Lowell
 Lowell General Hospital Cancer Center
 295 Varnum Avenue
 Lowell, MA 01854
 (978) 458-9872

NEPET at Elliot Hospital
 One Elliot Way
 Manchester, NH 03103
 (603) 663-2370

Massachusetts Mobile PET, P.C.
 at Anna Jaques Hospital
 25 Highland Avenue
 Newburyport, MA 01950
 (888) 560-4738

Massachusetts Mobile PET, P.C.
 at Merrimack Valley Hospital
 140 Lincoln Avenue
 Haverhill, MA 01830
 (888) 560-4738