# Candida Esophagitis Incidentally Detected by 18F-FDG PET/CT in Metastatic Lung Adenocarcinoma


## Abstract

The diagnostic significance of esophageal 18F-FDG uptake in oncologic patient is challenging. It may represent normal physiological uptake, inflammation, infection, or neoplasia. We present a patient with a recent diagnosis of non-small cell lung cancer stage IV and esophageal mild uptake on 18F-FDG PET/CT scan. Biopsy of esophageal mucosa demonstrated Candida esophagitis.


**Key Words:** *18F-FDG PET/CT, Candida albicans, esophagitis, infection, lung cancer*


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A 57-year-old man, heavy smoker (two packs per day for more than 40 years), complained of acute disorientation and unsteady gait. Brain contrast-enhanced computed tomography (CT) and gadolinium-enhanced magnetic resonance imaging (MRI) showed multiple metastases in brain parenchyma, mesencephalus, and cerebellum. Chest X-ray and whole-body CT revealed ill-defined nodule of 1 cm in size located in left lung upper lobe and enlarged left axillary lymph node (1.3 cm in diameter). Histological analysis of the lymph node was reported as metastatic adenocarcinoma. Samples were negative for ALK and EGFR mutations. An 18F-FDG (FDG) positron emission tomography /computed tomography (PET/CT) scan was requested for staging. FDG PET/CT showed increased metabolism in the lung nodule (SUVmax 2.05) and left axilla lymphadenopathy (SUVmax 4.39). Moreover, PET/CT showed diffuse FDG uptake along the proximal and middle third of the esophagus (SUVmax 3.58) [Figure 1]. The patient had no clinical or biochemical signs of immunodeficiency.

Upper gastrointestinal endoscopy revealed multiple raised white plaques throughout all the esophagus [Figure 2]. Biopsy confirmed Candida albicans esophagitis and therapy with oral Fluconazole (200 mg/day for 14 days) was established. Endoscopy was not repeated at the end of fungal treatment.

Based on the radiological and FDG PET/CT findings, cranial radiotherapy, and chemotherapy was started. Three months later, a new FDG PET/CT performed for

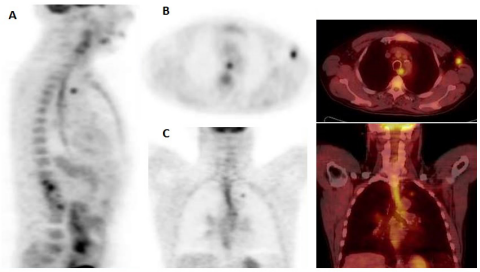


**Figure 1: (A) Sagittal view of 18F-FDG PET scan shows diffuse FDG uptake along the esophagus, more intense in the proximal, and middle third corresponding to infectious Candida albicans esophagitis. (B) Axial and coronal 18F-FDG PET and PET/CT fusion images show the esophageal uptake in addition to enlarged left axillary lymph node reported after biopsy as metastatic lung adenocarcinoma and (C) a small 1 cm size long nodule in left lung upper lobe.**

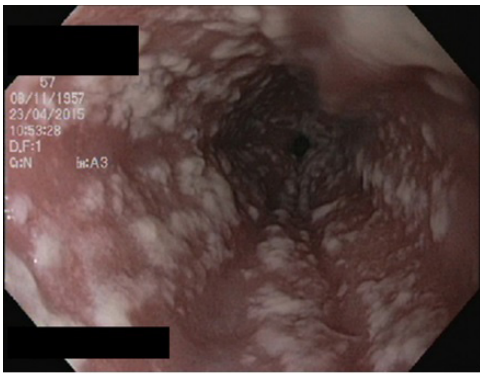

**Figure 2: Upper gastrointestinal endoscopy showed multiple raised white plaques throughout the entire esophagus compatible with Candida albicans infection.**

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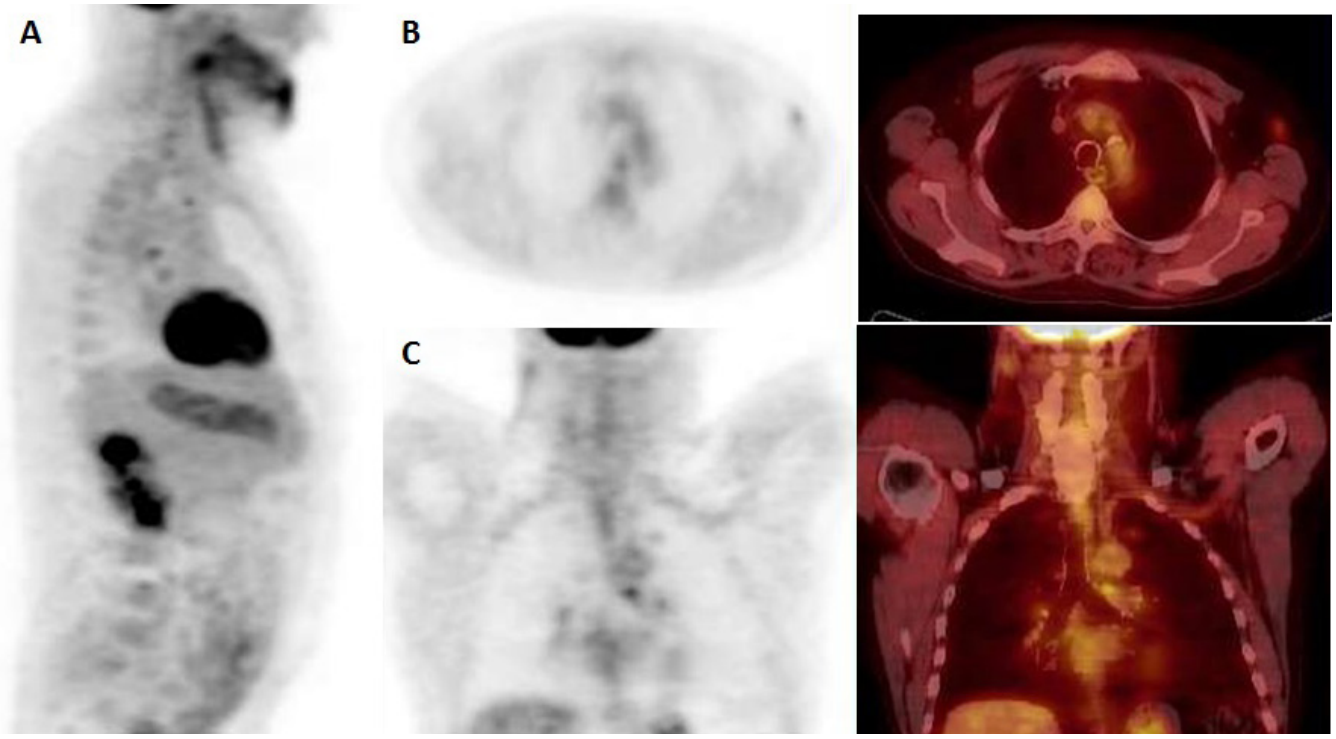


**Figure 3: Reevaluation FDG PET/CT after three months of chemotherapy and antifungal treatment showed a decrease of FDG extent and intensity of FDG uptake in the esophagus, (A) in the sagittal view. (B) and (C) Axial and coronal 18F-FDG PET and PET/CT fusion images shows reduced uptake in the lung nodule and left axillary lymphadenopathy.**

treatment monitoring showed a decrease of FDG uptake in the lung nodule (SUVmax 1.80) and left axillary lymphadenopathy (SUVmax 3.24). In addition, a decrease both in the extent and intensity of FDG uptake in the esophagus (SUVmax 1.89) was observed [Figure 3].

Esophageal FDG uptake is likely multifactorial, including malignant and non-malignant conditions. Thus, incidental detection of esophageal uptake has been associated with swallowed saliva, active smooth muscle, metabolic active mucosa, lymphatic tissue uptake, Barrett's esophagus and inflammatory or infectious esophagitis.[1-7] Esophagitis may be caused by fungal (Candida albicans), bacterial (Helicobacter pylori, Mycobacterium tuberculosis), and viral (herpes simplex, citomegalovirus, HIV) infections. Candida albicans infection is often observed in immunocompromised patients.[2,8] Patients with solid tumor are susceptible to fungal infections, being Candida the most common pathogen isolated in the gastrointestinal tract. In this context, unexpected visualization of esophageal FDG uptake must be investigated by endoscopy. Biopsy should be considered based on endoscopic findings.

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### *Conflict of interest*

There are no conflicts of interest.

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