

Incidental Airway Findings on PET/CT with F-18 PSMA

Jason Orciuolo¹, Akash Sharma², Ephraim E. Parent², Joseph M. Accurso², Manoj K. Jain²,

Jason R. Young²

1. Liberty University College of Osteopathic Medicine
2. Mayo Clinic Jacksonville Department of Radiology

Corresponding Author:

Jason R. Young

Department of Radiology
Mayo Clinic Jacksonville

4500 San Pablo Rd S, Jacksonville, FL 32224

young.jason@mayo.edu

First Author:

Jason Orciuolo

(908)596-1814

jmorciuolo@liberty.edu

Liberty University College of Osteopathic Medicine- Medical Student

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Case Report:

A 76-year-old male presenting with a history of frequent awakening at night due to nocturia, difficulty with urination, and elevated prostate specific antigen of 27.4 ng/mL. Past medical history includes chronic obstructive pulmonary disease (COPD) with prior emergency room visits due to exacerbation. Prostate magnetic resonance imaging discovered a very high risk 2.3 cm prostate lesion invading the seminal vesicles and prostate capsule with suspicious left external and internal iliac lymph nodes. Prostate biopsy showed Gleason score 4+3=7 prostate adenocarcinoma. To complete staging prostate specific membrane antigen (PSMA) positron emission tomography/computed tomography (PET/CT) exam was performed using 10 millicuries of F-18 piflufolastat which demonstrated intense activity within the prostate lesion, many lymph nodes (bilateral iliac, bilateral para-aortic and right retrocrural) along with diffuse bronchial uptake (Figure 1).

Figure 1:

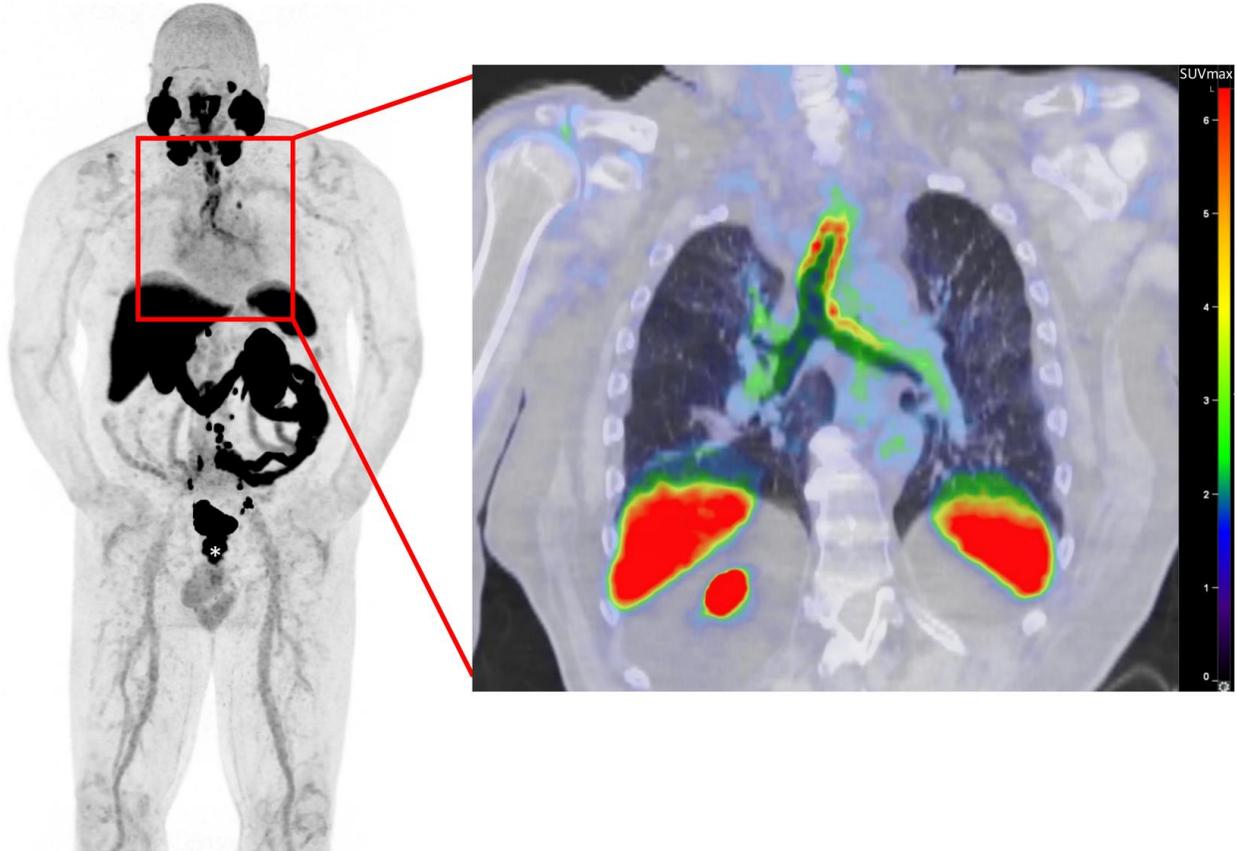


FIGURE 1: F-18 piflufolastat prostate specific membrane antigen positron emission tomography / computed tomography highlighting increased uptake throughout the large airways.

Discussion:

Piflufolastat F-18 was approved by the Food and Drug Administration on May 27th, 2021 to identify prostate cancer metastasis or recurrence. While PSMA usually localizes to prostate cancer, this antigen is expressed on a variety of cells. Afshar-Oromieh et al., showed Ga-68 PSMA-11 uptake in benign inflamed lymph nodes with high PSMA expression in nodes undergoing follicular hyperplasia¹. Gordon et al., found high PSMA expression in neovascularization and inflammatory cell using formalin-fixed tissues².

Ga-68 PSMA-11 has been reported to localize in small peripheral airways in the setting of bronchiectasis with follow-up bronchoscopy and lavage demonstrating inflammatory cells³. However, to the best of our knowledge this is the first clinical report of large airways PSMA localization. The patient presented here has poorly controlled COPD with likely chronic inflammation of the airways resulting in PSMA localization, a potential false positive finding that is important to highlight.

References:

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