Elevated ^{68}Ga-FAPI activity in aspergillus pneumonia

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A 47-year-old woman was complained of cough and hemoptysis for 2 months. Previous chest computed tomography (CT) imaging revealed a pulmonary nodule in the right upper lung with heterogeneous enhancement (approximately 2.6cm in size, not shown). The findings were suspected to be a lung tumor. Subsequently, gallium-68-fibroblast activation protein inhibitor (^{68}Ga-FAPI-04) positron emission tomography (PET)/CT was performed (Figure 1). The maximal intensity projection image revealed moderate FAPI uptake in the right upper chest (curved arrows, maximum standardized uptake value (SUVmax) of 2.0). On the axial and sagittal images of the chest, the increased FAPI uptake on the PET corresponded to the known pulmonary nodule on the CT and fusion images, with "air crescent" sign. Based on these PET/CT findings, the lesion was suspected to be pulmonary fungal infection. Finally, the pulmonary nodule was surgically resected due to its size and the symptom. The pathoogic diagnosis was aspergillus pneumonia. Gallium-68-FAPI is a novel PET agent developed for detecting multiple primary and metastatic tumor [1]. However, increased ^{68}Ga-FAPI uptake can be observed in various non-malignant etiologies of lung, including pneumonia [2], pulmonary tuberculosis [3], benign metastasizing leiomyoma [4], and solitary fibrous tumor [5]. Our case demonstrates that aspergillus pneumonia can also demonstrate FAPI uptake, and differentiation is necessary when reviewing similar FAPI PET/CT findings.

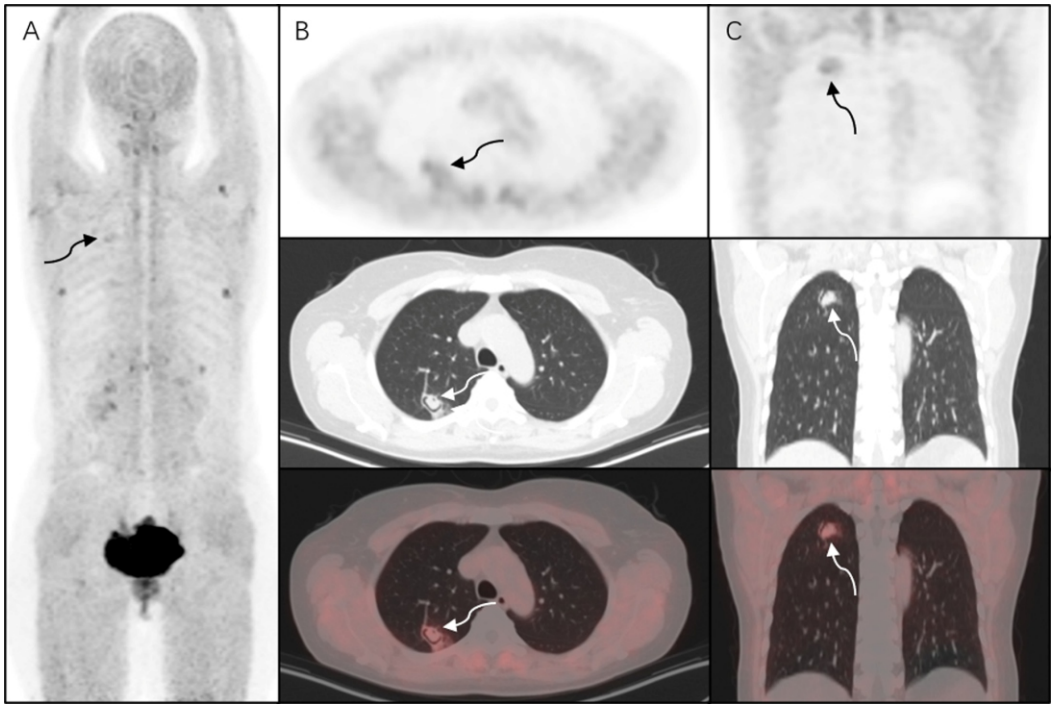

Figure 1. Gallium-68-FAPI PET/CT maximal intensity projection image (A) revealed moderate FAPI uptake in the right upper chest (curved arrows, SUVmax of 2.0). On the axial (B) and sagittal (C) images of the chest, the increased FAPI uptake on the PET corresponded to the known pulmonary nodule on the CT and fusion images, with "air crescent" sign (upper: PET; middle: CT; lower: fusion images).

The authors declare that they have no conflicts of interest.

Bibliography

1. Kratochwil C, Flechsig P, Lindner T et al. ^{68}Ga-FAPI PET/CT: Tracer Uptake in 28 Different Kinds of Cancer. *J Nucl Med* 2019; 60: 801-5.
2. Tang W, Wu J, Yang S et al. Organizing Pneumonia With Intense ^{68}Ga-FAPI Uptake Mimicking Lung Cancer on ^{68}Ga-FAPI PET/CT. *Clin Nucl Med* 2022; 47: 223-5.
3. Liu W, Gong W, Yang X et al. Increased FAPI Activity in Pulmonary Tuberculosis. *Clin Nucl Med* 2023; 48: 188-9.
4. Wu S, Cai J, Chen Q et al. Increased ^{68}Ga-FAPI Uptake in Benign Metastasizing Leiomyoma. *Clin Nucl Med* 2023; 48(9): 809-11.
5. Liu H, Liu L, Chen L et al. [^{68}Ga]Ga-DOTA-FAPI-04 PET/CT imaging of benign pulmonary solitary fibrous tumour. *Eur J Nucl Med Mol Imaging* 2021; 48(6): 2053-4.

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