

IMAGING GAMUT

Pulmonary arteriovenous malformation diagnosed on a ^{18}F-fluorodeoxyglucose PET/CT scan

Khattab Khaled*, Amir Javaid, Qaisar Hussain Siraj

Department of Nuclear Medicine, Farwania Hospital Kuwait

Key words: *AV malformation, PET/CT scan*

Background A 68-year-old female with known gastric cancer in 2011 had a routine follow-up CT scan in Nov 2016, which showed a pulmonary nodule in the right lung. The patient was referred to the nuclear medicine department for an ^{18}FDG-PET scan to investigate the nature of the lesion.

Procedure ^{18}F-flourodeoxyglucose (277 MBq) was injected intravenously and PET/CT imaging performed after 60 minutes. PET, CT and fused images were reconstructed in the transaxial, coronal and sagittal axes (Figure 1).

Findings The PET-CT scan showed a hypermetabolic lesion in the lateral segment of the lower lobe of the right lung with SUV_{max} of 4.3 (Figure 1a). This mass-like lesion was seen to be interposed between the right inferior pulmonary vein and branches of the right interlobar artery (Figure 1b) with the CT appearance of fingers-in-a-glove, a sign in keeping with a pulmonary arteriovenous malformation (AVM). This was seen to correspond to the hypermetabolic lesion (Figure 1c). The scan was otherwise normal.

Conclusion The PET/CT scan findings were consistent with a hypermetabolic right lung mass suspicious of an AVM. A contrast-enhanced CT confirmed this impression (Figure 2).

Comments Pulmonary AVM is a rare congenital anomaly with uncertain aetiology [1]. Since the patients are usually asymptomatic and an undiagnosed AVM may be associated with serious complications [2] it is important to make an early diagnosis for instituting correct and timely treatment.

In a patient with known previous gastric carcinoma, an FDG-avid mass-like lesion could have raised the possibility of malignancy and may have resulted in misdiagnosis leading to further unnecessary bronchoscopic biopsy. There are however several benign conditions which show increased FDG avidity. A literature search revealed a previous report of a patient with AVM showing increased FDG uptake [3].

This case underscores the importance of careful evaluation of both the CT and the PET images taking into consideration the entire

***Correspondence**

Khattab Khaled
Nuclear Medicine Department
Farwania Hospital
PO Box 18373
Kuwait 81004
Email: kateyah_radio@mail.com

 2221-0288(201601/01)6:1<69:PAMDOA>2.0.TX;2-M

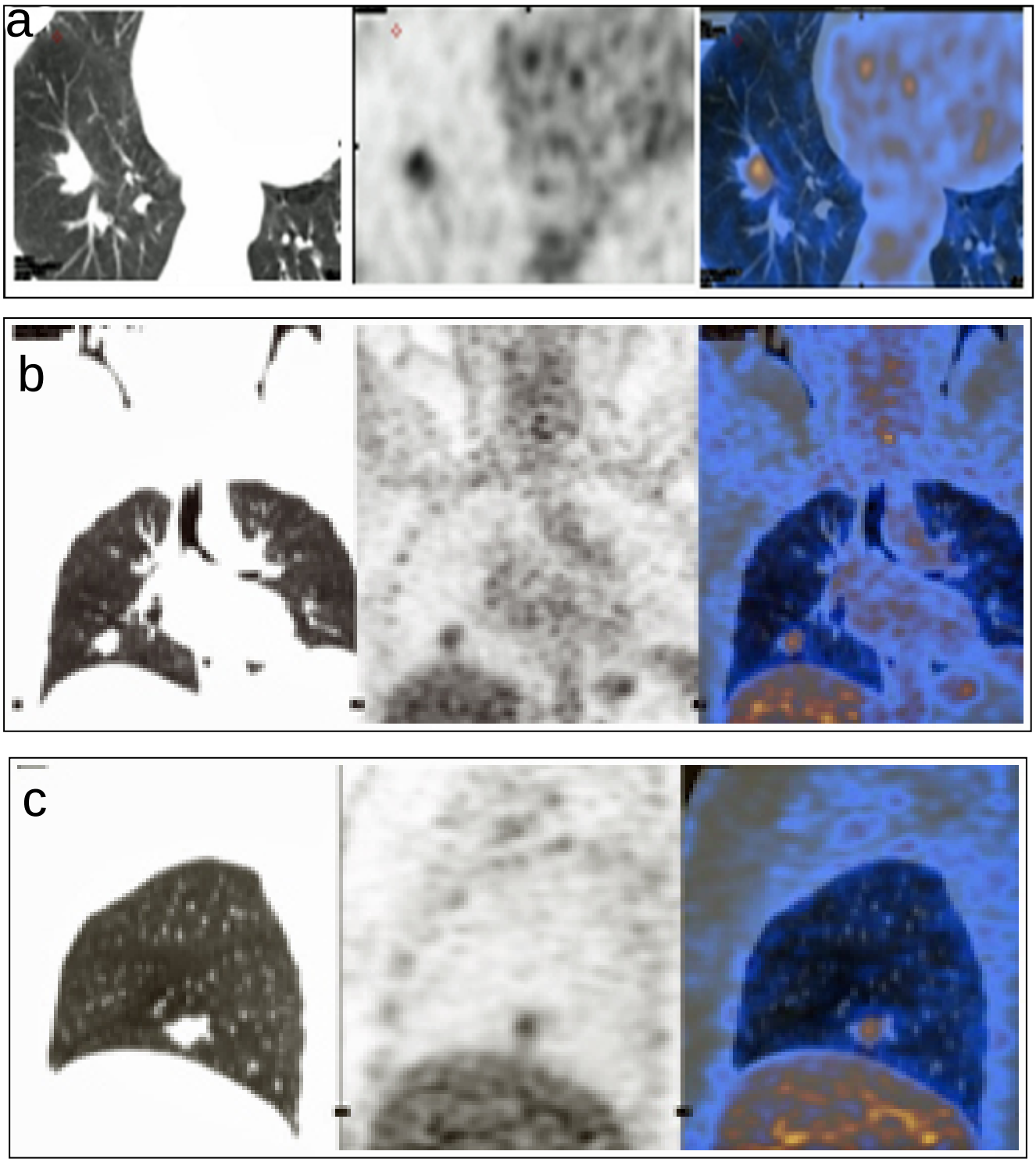

Figure 1 *PET-CT scan showing PET image (left row), the CT image (middle row), and the fused image (right row) in the transaxial (a), coronal (b) and sagittal (c) axes. The PET component shows an FDG-avid (SUV_{max} 4.3) nodule in the lower lobe of the right lung. The CT component shows a mass-like para-hilar lesion in the lateral segment of the right lower lobe of the lung. The fused images shows the focal increased FDG uptake to correspond to the mass-like lesion*

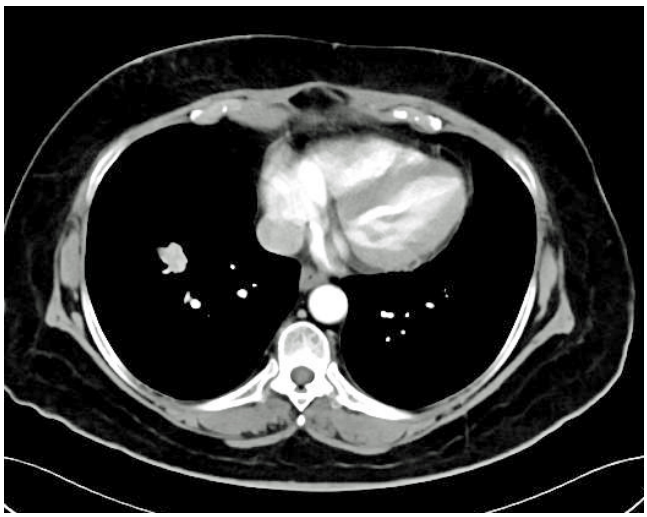

Figure 2 *Axial section of the contrast-enhanced CT of the chest showing vascular enhancement in the well circumscribed mass-like lesion*

gamut of the reported benign pulmonary pathologies, which may show increased ^{18}F-flourodeoxyglucose uptake to avoid making a misdiagnosis.

References

1. Gossage JR, Kanj G. Pulmonary arteriovenous malformations: a state of the art review. Am J Respir Crit Care Med 1998; 158: 643-61.

2. Sood N, Sood N, Dhawan V. Pulmonary arterioveneous malformation (AVM) causing hemothorax in a pregnant woman requiring emergent cesarean delivery. Pulm Med 2011; 2011: 865195.

3. Elboga U, Kalender E, Çelen ZY, Yilmaz M, Aktolun C. Pulmonary arteriovenous malformation mimicking a pulmonary tumour on 18F-fluorodeoxyglucose positron-emission tomography/computed tomograph. Arch Med Sci 2015; 11, 2: 461–462.