

Incidentally Detected COVID-19 Case and FDG-PET-CT Findings in a Patient with Newly Diagnosed Breast Cancer

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Keywords

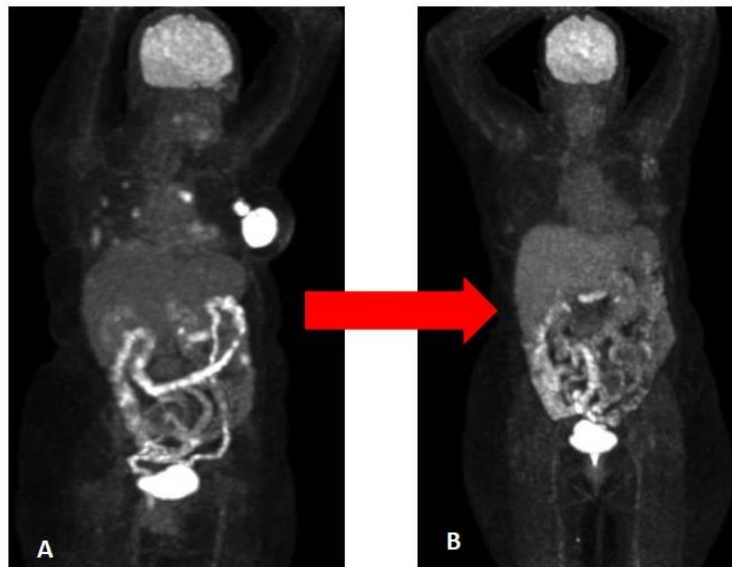
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ABSTRACT

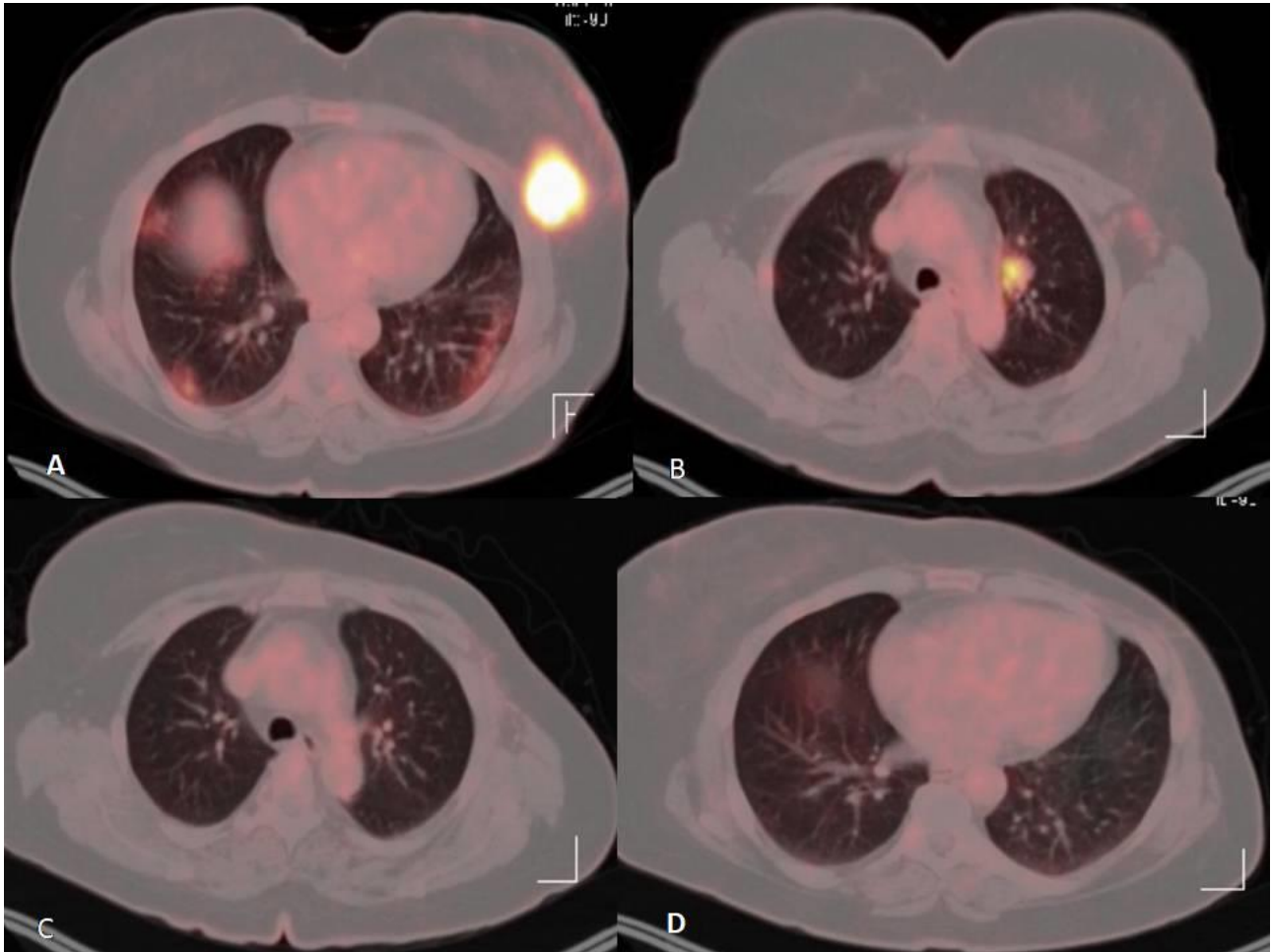
Imaging plays an important role in the evaluation of cancer patients for management of most appropriate treatment options. FDG PET-CT imaging in various cancer patients has been widely used for staging, restaging, and therapy response for various cancer patients. We hereby, report incidentally detected COVID-19 disease FDG PET-CT findings of a newly diagnosed breast cancer patient and follow-up imaging findings.



1. Figure 1

An 56 year old woman with breast cancer underwent FDG PET-CT imaging for initial staging evaluation after 15 mCi (555 MBq) FDG injection. MIP (Maximum Intensity Images) and axial fusion images demonstrate left breast upper quadrant located hypermetabolic mass with spicular contour, 5 cm in diameter, consistent with

primary malignancy (SUVmax: 34) with proven diagnosis of invasive carcinoma. Axillary and pectoral metastatic lymph nodes (SUVmax:23) more than 10 in number with the largest of which is 2.5 cm in diameter were detected. In addition, areas of hypermetabolic reticulonodular densities and ground glass opacity increase in both lung parenchyma areas especially in basal sections were seen (SUVmax: 14) and were interpreted in line with the viral COVID-19 pandemic findings. Treatments planned for the breast were postponed during the isolation period.



2. Figure 2

Axial fusion PET-CT images in top row (A, B) shows primary breast malignancy, axillary and pectoral metastatic lymph nodes and active viral pandemic lung findings. In the lower row (C, D), PET-CT scan findings presented in the same patient after breast operation and treatment of lung pneumonia. She had breast operation and chemotherapy respectively 3 months and 2 weeks before the exam. In this study, it was noted that the COVID-19 viral pandemic lung findings detected in the first PET-CT demonstrated in A and B, was completely disappeared in the current PET-CT (C,D). There was 4 months between two PET-CT scans. In the literature, case reports and very small case series describing incidental findings of COVID-19 in patients performed FDG PET-CT imaging for especially oncological patients (1-11). To date, according to evidence-based data, FDG PET-CT cannot substitute or integrate high-resolution CT to diagnose suspicious COVID-19 or for disease monitoring, but it can be useful to incidentally detection of suspicious COVID-19 infection in especially oncological patients and influences therapy plan period.

REFERENCES

1. Huang HL, Allie R, Gnanasegaran G, Bomanji J. COVID19-Nuclear Medicine Departments, be prepared! Nucl Med Commun 2020;41:297-299

2. Treglia, G. The role of 18F-FDG PET for COVID-19 infection: Myth versus reality. *Clin. Transl. Imaging* 2020
3. Albano, D.; Bertagna, F.; Bertoli, M.; et al. Incidental Findings Suggestive of COVID-19 in Asymptomatic Patients Undergoing Nuclear Medicine Procedures in a High-Prevalence Region. *J. Nucl. Med.* 2020, 61, 632–636
4. Bahloul, A.; Boursier, C.; Jeulin, H.; et al. CT abnormalities evocative of lung infection are associated with lower 18F-FDG uptake in confirmed COVID-19 patients. *Eur. J. Nucl. Med. Mol. Imaging* 2020
5. Cabrera Villegas, A.; Romero Robles, L.G.; Boulevard Chollet, X.L.E.; et al. [18F]-FDG PET/CT in oncologic patients with unsuspected asymptomatic infection with SARS-CoV-2. *Eur. J. Nucl. Med. Mol. Imaging* 2020
6. Charters, P.F.P.; Little, D.; Rodrigues, J.C.L.; et al. 18FDG-PET/CT findings in COVID-19: A single centre retrospective radiological review. *BJR Case Rep.* 2020, 6, 20200091
7. Dietz, M.; Chironi, G.; Claessens, et al. COVID-19 pneumonia: Relationship between inflammation assessed by whole-body FDG PET/CT and short-term clinical outcome. *Eur. J. Nucl. Med. Mol. Imaging* 2020
8. Boulevard Chollet, X.L.E.; Romero Robles, L.G.; Garrastachu, P.; et al. 18F-FDG PET/CT in Hodgkin Lymphoma With Unsuspected COVID-19. *Clin. Nucl. Med.* 2020, 45, 652–653
9. Kamani, C.H.; Jreige, M.; Pappon, M.; et al. Added value of 18F-FDG PET/CT in a SARS-CoV-2-infected complex case with persistent fever. *Eur. J. Nucl. Med. Mol. Imaging* 2020, 47, 2036–2037
10. Halsey, R.; Priftakis, D.; Mackenzie, S.; et al. COVID-19 in the act: Incidental 18F-FDG PET/CT findings in asymptomatic patients and those with symptoms not primarily correlated with COVID-19 during the United Kingdom coronavirus lockdown. *Eur. J. Nucl. Med. Mol. Imaging* 2020
11. Salvatore Annunziata, Roberto C. Delgado Bolton, Christel-Hermann Kamani, et al. Role of 2-[18F]FDG as a Radiopharmaceutical for PET/CT in Patients with COVID-19: A Systematic Review. *Pharmaceuticals* 2020, 13, 377



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