



A case of COVID-19 lung infection first detected by [18F]FDG PET-CT

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An 82-year-old man with a history of the adenocarcinoma of colon who had undergone sigmoidectomy followed by adjuvant chemotherapy 8 years ago presented with fatigue and myalgia for 10 days. On laboratory work-up, mildly elevated carcinoembryonic antigen (CEA = 9.8 ng/mL, normal range up to 5 ng/mL) was detected. Total colonoscopy showed no remarkable finding. The patient was therefore referred to our institute to obtain an [18F]FDG PET-CT scan for evaluation of recurrence. [18F]FDG PET-CT scan was performed per institutional standard protocol. On [18F]FDG PET-CT scan (a, MIP image), no hypermetabolic focus was detected in the pelvic or abdominal areas to suggest a malignant focus; physiologic activity was seen in the bowel (black arrow). There were, however, foci of moderate to severely increased FDG activity with an SUVmax of 8.6 (SUVmax ranging from 1.5 to 8.6 in the left lung and 1.2 to 8.3 in the right lung) in both lungs (a, MIP image; b–d, axial fused PET-CT; red arrows) corresponding to the multiple peripheral bilateral pulmonary patchy ground-glass opacities on CT (e–g, axial CT; green arrows) with hypermetabolic mediastinal lymph nodes (SUVmax of 4.5). Despite lack of typical symptoms of coronavirus disease 2019 (COVID-19) infection, the morphological pattern on computed tomography was highly suggestive of

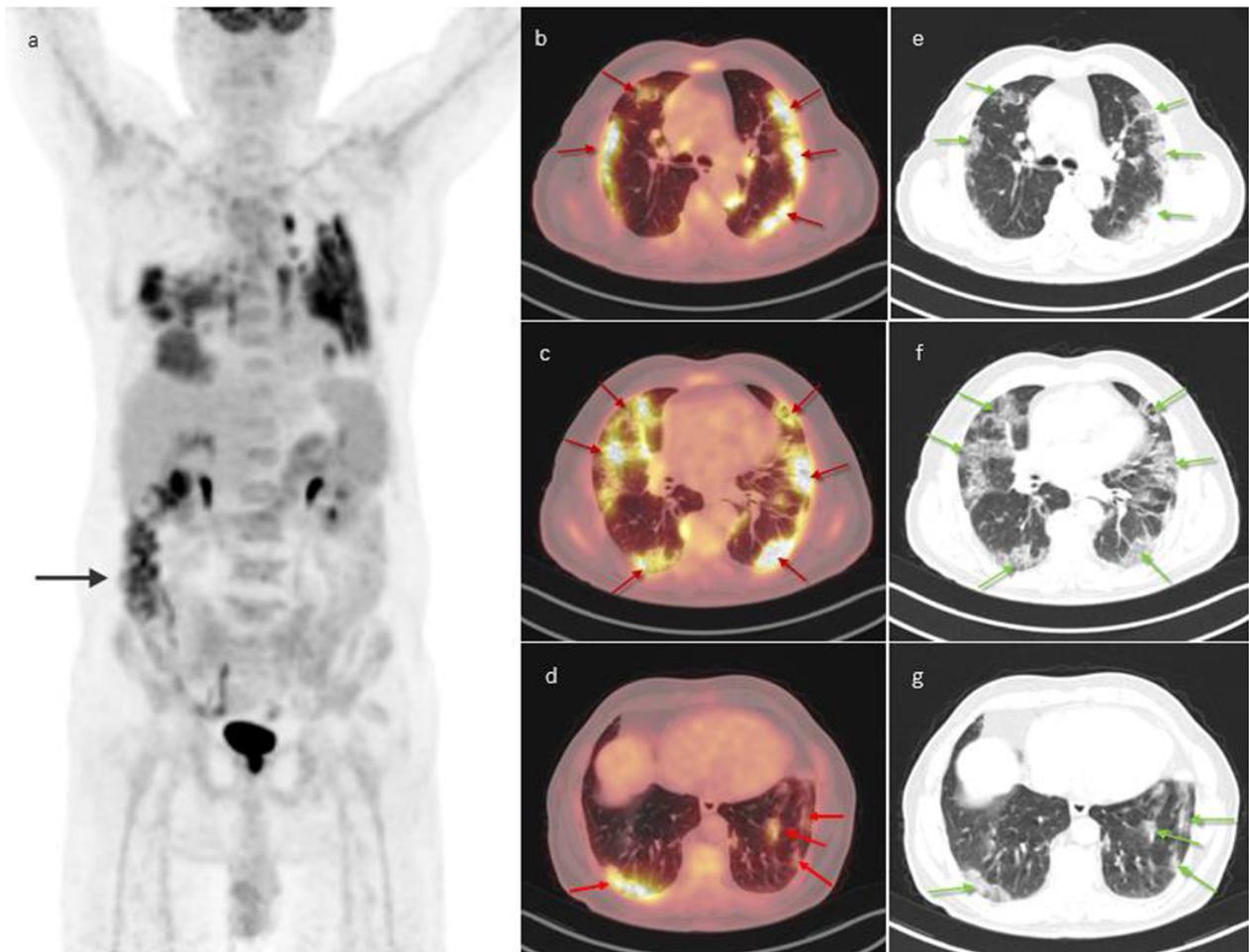
a COVID-19 infection, given the recent outbreak of this novel coronavirus globally [1].

The patient was admitted and received supportive care. Four days later, the suspicion of coronavirus 2 (SARS-CoV-2) lung infections was confirmed by polymerase chain reaction showing COVID-19. Increased FDG activity has been recently reported in COVID-19 pulmonary infection [2, 3]. However, in this case, the patient did not have any specific symptoms to suggest a COVID-19 infection. With the pandemic status of COVID-19, it is not unexpected that patients with cancers who are referred for [18F]FDG PET-CT have already been exposed to or contacted this virus. Therefore, nuclear medicine centers should follow institutional screening processes and should follow their jurisdictional safety recommendations when scanning any potentially infected COVID-19 patients ([https://www.who.int/publications-detail/coronavirus-disease-\(covid-19\)-outbreak-rights-roles-and-responsibilities-of-health-workers-including-key-considerations-for-occupational-safety-and-health](https://www.who.int/publications-detail/coronavirus-disease-(covid-19)-outbreak-rights-roles-and-responsibilities-of-health-workers-including-key-considerations-for-occupational-safety-and-health), <https://www.eanm.org/covid19-info-centre/>). Additionally, front-line staff should familiarize themselves with the pattern of COVID-19 infection on CT images to quickly identify infected patients in order to efficiently manage their care, and to ensure the safety of clinical staff, and the public.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflicts of interest.

Informed consent Informed consent was obtained from the participant for publication of this case report.

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