Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Original Research

Working in the dark: Interaction with a sub clinical COVID-19 subject and lessons learned

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Abstract Subclinical COVID-19 subjects pose a significant challenge. We present a very close clinical interaction with a subclinical COVID-19 subject that met the "standard screening criteria" and is unique in several ways. Learning from our experience, we suggest close attention should be paid to any unexpected findings such as groundglass opacity on CT as it could help early identification of subclinical COVID-19 infection.

Protecting healthcare workers from subclinical coronavirus infection is a challenge [1]. We present a clinical interaction with a breast cancer patient with subclinical COVID-19 and the lessons we learned from this interaction.

Patient A was diagnosed with breast carcinoma on 28th August 2019. She was referred to radiation oncology for consideration of adjuvant radiation for her breast carcinoma. She had returned from the US and was required to self-isolate for 14 days. On day 16 after her return, on her appointment day, 31st March 2020, she was screened for COVID-19 risk factors and symptoms at the entrance by the dedicated screening team at CancerCare Manitoba [2,3]. She did not have any fever, cough, difficulty in breathing, chest pain, sore throat, myalgia, diarrhoea, runny nose or any other concerning symptoms. She also did not have any history of recent travel within the last 2 weeks and did not have any contact with subjects with proven COVID-19. She was deemed safe at the COVID-19 screening and

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subsequently was seen by a breast radiation oncologist. The option of adjuvant radiation was discussed with her, and she agreed to proceed. As per standard breast radiation protocol, on 31st March 2020, computed tomography (CT) of the thorax was performed for patient set-up, tumour localisation and radiation planning for her breast radiation. Surprisingly, the CT result showed ground-glass opacities that caught the eye of a vigilant radiation therapist. These findings were discussed with the involved radiation oncologist, and further COVID-19 assessment including a diagnostic CT of the thorax (Fig. 1) was initiated after a discussion with the local infection prevention and control team. She had a nasopharyngeal swab test performed on 31st March 2020 and did test positive for COVID-19. Contact tracing protocol was initiated. Subsequently, patient A, the radiation oncologist, the radiation therapist, the nursing team and close contacts were advised 2 weeks of self-isolation. Fortunately, the involved healthcare team did not contract the infection and safely returned to work after 2 weeks as per provincial COVID-19 policy. Despite the changes seen in the CT of the chest, patient A remained entirely well and asymptomatic, and on day 16, after the positive test result, the patient had a repeat test, which was negative.

This case involved a very close clinical interaction with a subject with subclinical COVID-19 who met the 'standard screening criteria' is unique in several ways. She had appropriately self-isolated for 14 days after travel from the US. Thus, she did not meet the 14 days of travel criteria. As she was a patient with breast cancer, radiation planning CT involved the thorax and, the vigilance of the binvolved radiation team members made this detection possible at early stages. Hypothetically, had she been suffering from brain, abdomen or pelvic malignancy, we would not have caught this.

Patient A remained entirely well and asymptomatic throughout the quarantine and never developed symptoms. With several other immunocompromised patients in the oncological facility, there was a risk of spread and consequences. The risk of therapists, nurses and physicians contracting infection and spreading it is paramount. The implications of the risk of a decrease in the specialised radiation oncology workforce size could hamper and even halt operations of radiation oncology.

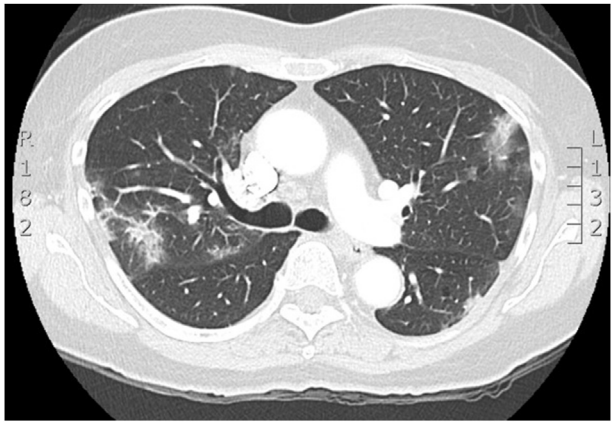

Fig. 1. CT Chest image.

The fact that 1 in 10 subjects with COVID-19 is healthcare personnel is alarming and highlights the need for better policy measures for the healthcare team [4,5]. Ironically, at this point, although personal protective equipment (PPE) guidelines were in place for interaction with subjects with suspected COVID-19 or COVID-19–positive subjects, it did not apply to other routine clinical interactions. Learning from these and other such experiences, updated PPE guidelines were enforced that recommended the use of surgical masks and hand and eye protection during all clinical interactions [6].

This case highlights the importance of clinical vigilance and role of imaging in the identification of subclinical COVID-19. Learning from our experience, we suggest close attention should be paid to any unexpected findings such as ground-glass opacity on CT as it could help early identification of subclinical COVID-19 infection.

Indeed, subjects with subclinical COVID-19 pose a unique challenge amid the ongoing crisis, and yet very little attention is offered to it. Collective effort and research are needed to design or modify policies to protect our healthcare personnel against the current and any future infections are urgently needed.

Conflict of interest statement

None declared.

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