

LETTER

Use of negative pressure individual isolation system for CT scan of patients with suspected COVID-19

Dear Editor

The Sabah Women's and Children's Hospital in Malaysia has one CT scan. Using the single scanner to image patients with suspected COVID-19 would cause a backlog, due to the need for frequent and thorough disinfection after each case. In the care of recent COVID-19 suspect, with a negative CXR, we carried out a CT thorax using a negative pressure individual isolation system (NPIIS), Iso-Pod¹ with our Siemens SOMATOM Definition AS make² CT scanner and describe our experience.

The NPIIS was laid out on a transfer stretcher and the patient lay down on top of it. The NPIIS was then assembled around her by the accompanying physician. This process took less than 5 min. The NPIIS is predominantly plastic with minimal metal materials in its structure. The size is suitable to fit into the CT scan gantry comfortably (figure 1). The patient



Figure 1 Negative pressure individual isolation system fitting comfortably into the CT scan gantry.

in the NPIIS was taken to CT, which was carried out using similar settings as when a CT thorax is done without the NPIIS. The spatial resolution of this scan was found to be equivalent and no noticeable noise on the image quality was seen. We observed minimal metal streak artefacts from the metallic material in the NPIIS which was outside of the patient's body. These artefacts did not interfere with the CT thorax interpretation and image quality was excellent for diagnostic purposes. After use, the NPIIS was wiped with a dish-washing sponge soaked in detergent to remove visible soiling and stains. It was then soaked in 0.1% sodium hypochlorite solution for 1 hour and rinsed with water, then air dried for reuse, following our hospital infectious disease prevention protocol for usage of NPIIS.

Using an NPIIS may enable the work process of conducting a CT for patients with suspected COVID-19 to be less disruptive to the hospital operations and would limit needs for disinfection while reducing the use of personal protective equipment (PPE). In conducting this case, only one clinician was designated to be in full PPE on standby for emergency resuscitation. However, our patient was fairly stable.

For critically ill patients, the process of transferring the patient into the NPIIS may cause delay and is a risk in itself; therefore, conducting a CT scan without using NPIIS may be a better option for these individuals. The use of an NPIIS should be governed by local institutional protocols, suitability of patients and adherence to safety precautions.

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