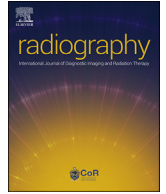




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Letter to the Editor

COVID-19 preparedness for portable x-rays in an Indian hospital – Safety of the radiographers, the frontline warriors



Sir,

COVID-19, the dreadful pandemic, is caused by the severe acute respiratory syndrome coronavirus 2 (SARS CoV-2) affecting the respiratory system.¹ It has a high human to human transmission. As per the World Health Organisation, the modes of transmission are airborne, fomites, and droplet borne.² The infected persons may remain asymptomatic, or they may present with symptoms ranging from fever, dry cough, fatigue, myalgia, shortness of breath to respiratory distress. Pulmonary opacities are seen on x-rays and CT scans.^{1,3} Death occurs in about 10% of the cases requiring mechanical ventilation.⁴

The imaging of the chest plays a vital role in the assessment of the disease burden and follow-up.³

As per the guidelines of Radiology preparedness for the COVID-19 pandemic, imaging is recommended only in those patients where imaging will impact the management. In the guidelines, they have also mentioned that imaging of COVID patients should be done in locations where there is less foot traffic away from the stations of critically ill patients. Whenever possible portable imaging should be performed.¹

In our hospital the x-ray cassette is covered with triple layers of polythene sheets tightly fixed with adhesive tapes (Fig. 1A, B). The portable x-ray machine is also completely wrapped with three layers of polythene sheets and sealed with leucoplast (Fig. 2A). This is a time-consuming procedure taking about 45 min. Two cassettes are marked for the COVID-19 cases only, and won't be used for routine cases. A radiographer enters the COVID zone with fully sealed personal protective equipment (PPE) and the machine (Fig. 2B). Once the x-ray is acquired, the cassette is removed from below the patient. The first layer of covering is discarded there and taken to the outer area where the second layer is opened

without touching the inner layer. The cassette is then handed over to the second radiographer waiting outside wearing gloves, head cap, disposable gown, shoe covers, and protective goggles found in an ordinary PPE kit along with an N-95 mask. He or she holds the cassette covered with the inner layer without touching



Figure 2. A,B - Covering of the portable x-ray machine with three layers of polythene sheets and transportation into COVID zone by radiographer wearing fully sealed PPE.

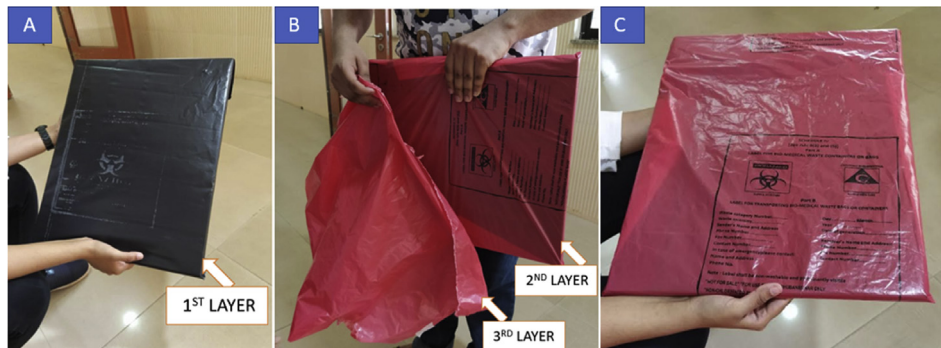


Figure 1. A,B,C - Three layer polythene sheet covering of the radiography cassette sealed with adhesive tapes.

the second layer. The innermost layer of polythene covering the cassette is cleaned with disinfectant (hypochlorite solution) using cotton by the second radiographer and taken to the main department for development in the computed radiography (CR) system. After the development of the film, the cassette is again wrapped similarly, transported to the COVID area and handed over to the radiographer in sealed PPE waiting inside. This cycle is repeated until all the indicated x-rays are done. The same procedure is followed for uncovering the ambulatory x-ray machine, which is then parked in a safe zone nearby. The radiographers are regularly trained in donning and doffing of the PPE.

The exercise can be eased by using a greater number of cassettes. Mobile digital radiography helps avoiding the use of cassettes, their tedious transportation, and also reduces the manpower requirement.

With the rational utilization of the available resources and strict adherence to the tiresome protocol, the radiographers who are the frontline warriors of COVID-19 can safely execute their duty towards the patients.

Conflict of interest statement

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