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Evaluation of an asymptomatic COVID-19 patient post-surgery with chest radiography: A surgeon's dilemma

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Abstract

Routine chest radiography is not a requirement in post-surgery cardiac bypass patients. However, the safety of abandoning routine chest radiographs in critically ill patients remains uncertain. Surgery in an asymptomatic coronavirus disease 2019 (COVID-19) patient presents additional challenges in postoperative management. Chest radiography remains a valuable tool for assessment of all patients, even a stable one. Management of surgical patients as an emergency in an asymptomatic COVID-19 case remains a surgeon's dilemma.

Key Words: COVID-19; Cardiac surgery; Radiography; Critical care; Chest radiography; Intensive care; Postoperative

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Core Tip: Spallanzani guidelines consider chest radiographs as a valuable tool for initial assessment and follow-up of coronavirus disease 2019 patients, even in stable asymptomatic patients. A high index of suspicion will reduce the risk of high fatal postoperative outcomes.

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TO THE EDITOR

We enjoyed reading the recently published article by Omar *et al*[1] about their observation on the necessity of chest radiographs (CXRs) in postoperative cardiac bypass graft cases in coronavirus disease 2019 (COVID-19)-positive patients. Although their series of patients with favourable post-surgery outcomes was small, their courage and willingness to help in the hour of need with the required COVID-19 protocols was commendable.

We agree with most of the content of the article. However, we would like to put forth more insights on the use of CXRs when dealing with surgical patients, especially an asymptomatic COVID-19 patient.

Omar *et al*[1] rightly indicated that routine CXRs are not a requirement in post-surgery cardiac bypass patients. This aspect has been researched and concluded by other authors in larger study groups. Rao *et al*[2] recommended performing CXRs only when clinically indicated, according to their finding from a study of 300 adult cardiac surgical patients showing satisfactory recovery. The systematic review and meta-analysis by Ganapathy *et al*[3] concluded that a restrictive CXR strategy in the intensive care unit does not cause harm; however, they cautioned that the safety of abandoning routine CXRs in critically ill patients remains uncertain. Tolsma *et al*[4] studied 1102 patients and concluded that selective CXR was an effective and safe approach once clear indications are defined. Porter *et al*[5] studied thoracic surgery patients and concluded that routine postoperative CXR in immediate intensive care management and later after final chest tube removal had a limited impact on clinical care.

Barkhordari *et al*[6] studied 25 asymptomatic COVID-19 patients undergoing emergent or urgent cardiac surgery, of which 84% received a cardiac bypass graft. They concluded that the majority of the patients had comparable early postoperative respiratory outcomes to their matched cohort of pre-COVID-19 patients. However, an intensive care unit readmission fared extremely poorly. They emphasised a lung-protective strategy during anaesthesia by maintaining appropriate tidal volumes with adjustments of ventilatory parameters based on perioperative acid-base and hemodynamic analyses.

Omar *et al*[1] reported on three asymptomatic cases with a mild grade of COVID-19 infection. Surgeries during the COVID-19 pandemic represent significant challenges for the patient and health care workers. There is a need for close monitoring of evaluation parameters or alarm signs in immediate postoperative management. The CXR utility for initial assessment and follow-up of COVID-19 patients is a valuable tool, even in stable patients as highlighted by the Spallanzani guidelines[7]. In COVID-19 infection, chest computed tomography in the postoperative period also needs judicious consideration based on the clinical distress symptoms to alert the surgeon of the possibility of the progression of respiratory involvement. A high index of suspicion will reduce the risk of fatal outcomes[8]. Abate *et al*[9], in their systematic review and meta-analysis on 2947 patients, revealed that perioperative mortality was 29% amongst the patients posted for emergency surgery. They also analysed hypertension as one of the most common comorbidities and pulmonary complications as one of the most common perioperative complications among surgical patients.

The developing strategies for management of asymptomatic COVID-19 patients during emergency surgery remains a surgeon's dilemma. An asymptomatic COVID-19 patient may deteriorate abruptly and collapse quickly. A surgeon should maintain focus on decreasing perioperative mortality, preventing transmission of infection to health care workers, avoiding undertreatment, and adopting a less risky approach by undertaking routine CXR evaluation for immediate postoperative management. Of note, dyspnoea may present with COVID-19 pneumonia as well as myocardial infarction or acute decompensated heart failure. The surgeon needs to adapt constantly to the challenges of evolving clinical presentations, developing virus mutations and changing transmissibility of the COVID-19 virus to ensure patient safety.

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