Screening with HRCT chest and PCR testing for COVID-19 in asymptomatic patients undergoing a surgical or diagnostic procedure

Editor

Since the outbreak of the coronavirus disease 2019 (COVID-19), measures have been taken to protect healthcare staff from infection, to prevent infection of patients admitted to the hospital and to distribute personal protective equipment (PPE) according to need1. To assure the proper protection without overuse of limited supply of PPE, screening of patients for COVID-19 before surgical or diagnostic procedure needs to be implemented2, 3. Besides surgery on a COVID-19 patient posing a risk to the treatment team, it can also be detrimental to the post-operative course of COVID-19 for the patient3. Longer surgery time and more difficult procedures are predictors of more complicated disease progression, together with age and comorbidity.

Although the Dutch national guideline recommended screening asymptomatic patients undergoing general anaesthesia, in our hospital, all patients, independent of subspecialty, undergoing spinal/locoregional anaesthesia and sedation were screened as well. Screening included a symptom questionnaire taken by phone 3 working days before the procedure. The symptom questionnaire included new complaints of coughing, shortness of breath, rhinorrhea, loss of smell and taste, sore throat or fever. Additionally, contact with suspected or confirmed COVID-19 patients was inquired after. Two days before the procedure, reverse-transcription polymerase chain reaction (RT-PCR) on a nasopharyngeal/oropharyngeal swab and high resolution non-contrast computed tomography of the chest (HRCT chest) to assess the CORADS classification were performed4. In pregnant women or children <16 years of age only RT-PCR was taken. In emergency admission and surgery, the screening was performed at the emergency department or as an inpatient.

After excluding 9 patients without pre-operative screening, 398 screenings were performed in 386 patients, with a median age of 60 years and body mass index of 26.8 kg/m². Comorbidities were diabetes (9 per cent), hypertension (28 per cent), cardiovascular (26 per cent) and renal failure (3 per cent). The symptom questionnaire was completed in 72 per cent of screenings. In 371 screenings, PCR testing was performed and was negative. HRCT chest (386) in 374 patients found 18 cases with CORADS 3, three patients had their surgery postponed and additional measures were taken in 3 other patients (Fig 1). Incidental findings on HRCT chest were found in 5 per cent.

Surgery was performed in 370 patients, 137 (37 per cent) of whom had an indication for emergency surgery. Four patients developed symptoms suspected for COVID-19 post-operatively, after which repeat RT-PCR testing came back positive, one of these patients died. Three had negative screening before surgery and in 1 patient, CORADS 3 was reported pre-operative.

All data combined suggests that screening of patients before a surgical or diagnostic procedure with sedation or anaesthesia for COVID-19 is necessary. A symptom questionnaire to exclude symptoms suspect for COVID-19 is probably the most important tool and further screening through RT-PCR testing in certain risk groups should be considered. With a low prevalence of COVID-19, HRCT chest has no added value. This screening method will result in proper distribution of PPE, therefore reducing the risk of infection of medical staff and patients and help keeping stress under control5. This will also help to prevent a more complicated course of COVID-19, by avoiding surgery on asymptomatic patients with COVID-193.

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Figure 1 Patient flow and screening outcome in the study
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