

LETTER TO THE EDITOR

COVID-19 masquerading emergency surgical problems: Lessons learnt from four cases diagnosed in the surgical ward

Dear Editor

The World Health Organisation declared coronavirus disease 2019 (COVID-19) a global pandemic on 11 March 2020. It has posed big challenges to medical systems worldwide. A risk-stratification protocol was devised for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) testing in our hospital for identification of potential patients with COVID requiring emergency surgery and directing proper usage of appropriate personal protective equipment (PPE).¹

From our recent observation, the symptoms of patients with COVID are deceptive and can well mimic those of acute surgical problems. We encountered, within a month, four COVID cases confirmed in surgical wards with initial diagnoses of emergency surgical problems. We will share herein some lessons learnt by reviewing these four cases to alert other healthcare workers. A systematic literature review was attempted to elucidate this facet in a wider perspective.

(Case 1) A woman, aged 77, with diabetes mellitus, old cerebrovascular accident, hypertension, and obstructive sleep apnoea syndrome [using continuous positive airway pressure (CPAP) machine during sleep], was emergently admitted to surgical ward on 1 December 2020 because of fever, urinary urgency, dysuria, and diarrhoea for 2 weeks. The initial diagnosis was urinary tract infection with sepsis. Following admission, she was assigned to stay at an isolation room of the surgical ward. Deep throat saliva (DTS) was collected for polymerase chain reaction performed to confirm SARS-CoV-2 infection, and it turned out to be positive with a cycle threshold (Ct) value of 21.5. She was later transported to the COVID ward for subsequent treatment. Because of high oxygen demand, she was treated in the intensive care unit without the need of intubation for a week. Urine was negative for bacterial culture. The patient was finally discharged 20 days later. Three ward staff were in close contact with the patient to facilitate CPAP treatment and were thus quarantined for 14 days.

(Case 2) A 66-year-old man presented with acute onset of right upper quadrant abdominal pain associated with fever (39.0°C) in the second week of December 2020. In addition, he suffered shortness of breath and sore throat for 1 day. His medical history was unremarkable except hypertension. He was admitted to the isolation ward of the surgical ward the next day, and was suspected to have acute cholecystitis. DTS taken after admission was positive for SARS-CoV-2 with a Ct value of 25.0. Plain chest X-ray (CXR) taken at the accident and emergency department (AED) was reviewed which unravelled moderate lung infiltrations bilaterally. Ultrasonography showed no feature of acute cholecystitis. The patient was

subsequently transferred to the intensive care unit as he developed cardiogenic shock and adult respiratory distress syndrome on the same day. Despite active treatment against COVID-19 and support care in the intensive care unit, he developed multiorgan failure and died 7 weeks later. One cleaning worker was quarantined for 14 days because of close contact with the patient. Three other nurses and one doctor required 28-day medical surveillance for ordinary contact.

(Case 3) A man, aged 59, with a history of hypertension and supraventricular tachycardia treated by ablation, complained of epigastric pain associated with fever (38.0°C) for 2 days. He had no upper respiratory symptoms and the CXR was clear. He was admitted to the isolation room of the surgical ward on 30 December 2020 for biliary colic. The patient was living with his father who was diagnosed of COVID on the same day. This information was made known after admission. Therefore, despite two negative results for SARS-CoV-2 on nasopharyngeal swabs, a third test of DTS was taken which was positive with a Ct value of 26.5. He was then transferred to the COVID ward for further management and was discharged 2 weeks later. No close or ordinary contact was identified.

(Case 4) This patient, aged 69, had a history of carcinoma of caecum with right hemicolectomy performed in 2015. He attended AED in the first week of January 2021 because of lower abdominal pain, constipation, and vomiting of yellowish fluid for 2 days. Plain abdominal radiography showed slightly dilated small bowel shadows with fluid level. The CXR was clear. One day later (on 2 January 2021), he was admitted to a general cubicle of surgical ward with the diagnosis of intestinal obstruction. DTS was taken following admission and was positive for SARS-CoV-2 with a Ct value of 27.5. He remained stable all along. After observation in the COVID ward for 1 week, he was discharged uneventfully. Four patients within the same cubicle were judged as close contacts and obliged quarantine for 14 days in hospital. All staff wore appropriate PPE and no close contacts were identified.

A literature search on MEDLINE was conducted using the following keywords: "COVID-19" (11 161 articles), "general surgery" (4514 articles), and "acute abdomen" (805 articles). For this search, only full-text articles in English, without time limitation, were retrieved. Combining the keywords "COVID-19" and "general surgery" yielded 34 articles, while "COVID-19" and "acute abdomen" yielded only 2 articles. The abstracts of these articles were studied. Most focused on the modified media of training or performance evaluation for surgical trainees during COVID-19, strategy to clear backlog of postponed elective operations, restructuring of delivery of surgery services, precautions during operation on patients with COVID-19, and consequences of delaying elective

surgery. Only three articles were related our concern: the atypical presentations of COVID-19 or surgical emergency admission during the outbreak.²⁻⁴ The article by Shrestha² is a Guest Editorial commenting on the overall effects of COVID-19 on the delivery of surgery services but it briefly mentioned the risk of contracting the infection in the AED, "Exposure to COVID-19 can occur while reviewing patients in the emergency department, some of whom may have incidental suspicious chest x-ray findings and awaiting COVID-19 swab confirmation, ...". Rausei et al³ reported the dramatic decrease of surgical emergencies during the COVID-19 outbreak in Lombardy, Italy. However, atypical presentation of COVID-19 mimicking acute abdomen was not described. Cabrero-Hernandez et al⁴ reported five paediatric patients with COVID-19 who were admitted via AED for suspected acute abdomen or abdominal sepsis with manifestations of severe abdominal pain, vomiting, diarrhoea, and dehydration. All of them were previously healthy and required critical care unit admission. The authors stressed that this form of manifestation has not been documented in the literature as their respiratory symptoms were obscure.

Most patients with COVID present with respiratory symptoms: cough, throat discomfort, and sputum production. Nonetheless, atypical clinical manifestations do occur. Anosmia is noted to be a key symptom of COVID-19 infection.⁵ Han et al⁶ reported diarrhoea as the pertinent presentation in patients with COVID-19 having mild disease severity. However, there is a dearth of articles discussing patients with COVID-19 manifesting with symptoms resembling acute surgical problems. From our literature review, only one series (Cabrero-Hernandez et al⁴) of paediatric patients was reported on this aspect. There was no reporting of such phenomenon for adults. In our series of adult patients, the pertinent symptoms were acute abdominal pain, vomiting, diarrhoea, or even dysuria, with minimal or no respiratory symptoms, as reported by Cabrero-Hernandez et al.⁴ These indications misled clinicians when making a diagnosis of COVID and thus patients were inadvertently admitted emergently to the acute surgical ward. Consequently, the ward staff or patients were at risk of infection, and therefore, quarantine was imposed on some of them because of close contact and inconsistent use of PPE. To avert such events, measures should be taken to avoid admission of patients with COVID to surgical wards and increase awareness about wearing PPE when dealing with suspicious cases.

If resources and facilities are available, screening at AED is highly recommended before admission. Alternatively, admission to the dedicated COVID surveillance ward is a viable solution. It is also advisable to place newly admitted emergency patients in designated cubicle or isolation room if practically possible within the general surgical ward amid the COVID-19 pandemic. Liberal SARS-CoV-2 testing is also valuable to identify such hidden cases.

Meal gathering of ward staff should be discouraged. Utilisation of recommended PPE with appropriate masks, eye goggles or face shields, and protective garments during high-risk ward procedures [eg, CPAP (case 1)], collection of samples for COVID tests, or feeding patients will be necessary. Without doubt, low threshold of suspicion for patients with symptoms of COVID with a history of close contact with confirmed cases or subtle CXR haziness is of utmost importance to minimise spreading of infection in surgical wards. This is well illustrated by case 3 in which no close or ordinary contact was recognised on tracing.

CONFLICT OF INTEREST

There is no financial support or conflict of interest to be declared.

Tam-Lin Chow¹
Kitty S. C. Fung²
Yiu-Cheung Chan³

¹Department of Surgery, United Christian Hospital,
Kwun Tong, Hong Kong

²Department of Microbiology, United Christian Hospital, Kwun Tong,
Hong Kong

³Accident and Emergency Department, United Christian Hospital, Kwun
Tong, Hong Kong

Correspondence

Tam-Lin Chow, Department of Surgery, United Christian Hospital,
130 Hip Wo Street, Kwun Tong, Hong Kong.
Email: tamline@yahoo.com

REFERENCES

1. Wong DH, Tang EW, Njo A, et al. Risk stratification protocol to reduce consumption of personal protective equipment for emergency surgeries during COVID-19 pandemic. *Hong Kong Med J.* 2020;26:252-254.
2. Shrestha BM. Delivery of surgical services in the Coronavirus disease pandemic era. *JNMA J Nepal Med Assoc.* 2020;58:363-365.
3. Rausei S, Ferrara F, Zurleni T, et al. Dramatic decrease of surgical emergencies during COVID-19 outbreak. *J Trauma Acute Care Surg.* 2020; 89:1085-1091.
4. Cabrero-Hernandez M, Garcia-Salido A, Leoz-Gordillo I, et al. Severe SARS-CoV-2 infection in children with suspected acute abdomen: a case series from a tertiary hospital in Spain. *Pediatr Infect Dis J.* 2020; 39:e195-e198.
5. Lechien JR, Barillari MR, Jouffe L, Saussez S. Anosmia is a key symptom of COVID-19 infection and should be used as a diagnostic tool. *Ear Nose Throat J.* 2020;99:577-578.
6. Han C, Duan C, Zhang S, et al. Digestive symptoms in COVID-19 patients with mild disease severity: clinical presentation, stool viral RNA testing, and outcomes. *Am J Gastroenterol.* 2020;115:916-923.