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Important role of acute care surgery during pandemic time

Yang M *et al.* Acute care surgery in pandemic time

Abstract

Pandemic impacts acute care surgery for diseases, such as gallbladder disease and acute appendicitis. At the early stage of coronavirus disease 2019 (COVID-19) pandemic, the case number of patients needing surgery decreased in hospitals from different countries. This decline was associated with the stay-home order and fear of getting COVID-19 infection. However, recent reports show that the case number for acute surgery returns to the normal level, which is comparable to that before the beginning of the pandemic. In addition, a variety of diseases show more severe than the cases before the pandemic, which might be caused by factors such as lack of regular follow-up and screening diagnosis and infection of viruses.

Key Words: Pandemic impact; Acute care surgery; Outcome; Disease pattern and severity

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Core Tip: The coronavirus disease 2019 (COVID-19) pandemic impacts the number of cases and disease patterns that required acute care surgery. At the early stage of pandemic COVID-19, the case number of patients for surgery care decreased in hospitals from different countries. The decline was associated with the stay-home order and fear of COVID-19 infection. However, recent reports show that the case number for acute surgery returns to the normal level, which is comparable to that before the beginning of the pandemic. COVID-19 pandemic increases the severity of diseases, such as gallbladder disease and acute appendicitis. This change may be caused by factors including lack of regular follow-up and screening diagnosis and infection of viruses.

TO THE EDITOR

We read with great interest an observational study recently published by Farber *et al*^[1], which investigated ² the impact of the coronavirus disease 2019 (COVID-19) pandemic on acute care surgery for gallbladder disease and acute appendicitis. This study showed that comparing clinical cases in COVID-19 pandemic time from March to June in 2020 with that in the same period in 2019 at a single tertiary academic medical center in Northern California, more patients with gallbladder disease showed acute and severe cholecystitis, and patients with appendicitis showed more severe situation with a perforated appendix^[1].

¹ The COVID-19 pandemic is caused by the infection of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)^[2], which poses a big challenge to all healthcare systems. During the early COVID-19 pandemic outbreak, the number of cases in patients who needed surgical care is significantly decreased in many hospitals. For example, the total surgical activity performed at Innsbruck Medical University Hospital in Austria was dramatically decreased, including elective, acute, and oncological surgeries^[3]. Another study also showed during March 29 to April 25 in 2020, the number of emergency department (ED) visits in the Northeast part of the United States was lower compared to that in 2019^[4]. However, a study located in the northern part of Kentucky showed that the number of trauma incidences was comparable, whereas the pattern of trauma to the ED changed, with more cases such as burns and fewer cases of falls^[5]. Furthermore, the pandemic also decreased the academic training research activities in Nigeria^[6]. The decline of cases is associated with the stay-at-home policy, social distance requirement, and the fear of getting SARS-CoV-2 infection. However, the reduced number caused by the early lockdown turns back to a normal level at the third lockdown time in 2021 at some institutions^[7].

Farber *et al*^[1] also found that the 30-d re-presentation rate in patients with appendicitis was dramatically increased in 2020 than before^[1]. Another study showed that the length of hospital stay increased for trauma patients with COVID-19 infection^[8]. In addition, the case pattern and severity of cases are changed during pandemic time. Ajayi *et al*^[9] showed that during the second wave of COVID-19 infection, three times

more patients with trauma that was caused mainly by fall and traffic accidents were diagnosed with COVID-19 infection, and two times more patients who required surgical operation, but the mortality was decreased compared to the first wave of the pandemic^[9]. In contrast, a study in Brazil showed that elective neurosurgical surgery decreased more than emergency surgery, but the mortality rate was increased even though the overall hospitalization was decreased^[10].

Although the overall case number for acute care surgery may not be significantly impacted during the pandemic, the severity and pattern of diseases required emergency care may change. Lack of earlier diagnosis and screening for disease and routine follow-up may be the major reason that causes the severity of disease during the pandemic period^[11]. Moreover, one study reported that an acute care surgery division is able to manage the intensive care for COVID-19 patients independent of surgical procedures^[12].

In conclusion, infection of COVID-19 for patients with trauma or other surgical procedure can increase the risk of morbidity and mortality. A good management procedure and pre-operative COVID-19 testing for patients waiting for surgery care could provide favorable outcomes. With their expertise and experience, surgeons can aid the hospital to provide proper procedures to prevent the potential co-infection of COVID-19 for patients with non-surgical and surgical treatments.

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