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Letter to the Editor

Mortality in patients undergoing surgery with perioperative SARS-CoV-2 infection: an Italian COVID-19 Hub point of view

Dear Editor,

More than half of critically ill patients may die from severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) during the COVID-19 pandemic[1]. A COVIDSurg Collaborative study[2] has shown in an international multicenter study that perioperative SARS-CoV-2 infection is associated with high mortality. Most infections in the study were diagnosed postoperatively (71.5%), and a third of the patients had a preoperative thorax CT with a finding of ground-glass opacity in most cases. The indication of surgery was mainly a benign not postponable disease, and a significantly high number of patients underwent an emergency operation. Therefore, the present study indicated that emergency surgery is generally associated with a higher risk of pulmonary complications compared to elective surgery[3].

Regarding the 30-day mortality, an increased risk was associated with male patients, >70 years old, and significant comorbidities (ASA 3-5). Interestingly, a marked proportion of patients who underwent local and regional anesthesia had a 30.6% and 21.2% mortality rate, respectively. Therefore, SARS-CoV-2 may represent "per se" mortality related factors in almost all surgical candidates, and the threshold for surgery should be higher during COVID-19 pandemic. In some patients with acute benign disease (e.g. acute appendicitis, acute cholecystitis) the surgical team can follow a conservative approach, consequently delaying surgery (e.g. antibiotic treatments, percutaneous drainage)[4]. Considering the data reported, these patients still have a risk of developing SARS-CoV-2 as they cannot avoid hospital admission. Consequently, those results highlight the need during pandemic to continue the surgical programs in a safe way.

A recent survey has highlighted that the main issue during the COVID-19 pandemic is the lack of COVID-19 pathway that have only recently been implemented. Also, the pandemic has challenged some critical areas where the health systems have dealt with a high infection rate, struggled with Intensive Care Unit (ICU) beds, and faced the limitation of resources availability. Therefore, multifactorial factors such as delayed in diagnosis and/or management associated with COVID-19 infection, may explained the high risk of mortality in the surgical of patients[4,5].

According to the current clinical practice all surgical patients should be screened for COVID-19 on admission to hospital. However, even if the result of the test is negative, a minimal risk of infection, related to unintentional exposure, is present unless completely free COVID-19 hospitals[6]. In the group of patients admitted for acute surgical diseases, the length of hospital stay (LOS) is often unpredictable, and it will be interesting to investigate if there was a relation between LOS and risk of infection. Also, a conservative approach may further increase the risk of exposure as shown in a meta-analysis where 15% of the patients treated by antibiotics needed a readmission for a recurrent episode of appendicitis[7]. Paradoxically, the COVIDSurg Collaborative study[2] reported that there was a higher risk of mortality in patients where surgery is almost always mandatory because of life-threatening diseases (perforated viscus, bowel ischemia, trauma, ASA4-5) or risk of cancer progression (elderly patients)[8]. Therefore, the decision should follow the same pathway as before the COVID-19 pandemic and minimize the infective risk with COVID-19 free pathway. This will meet the patients' best interest in that it will preserve opportunity for curative treatment[9].

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One of the major concerns during pandemic was to avoid the cancellation or the delay of surgical procedures. Therefore, several attempts were done to guide the prioritization process and combine the clinical urgency with the risks related to COVID-19[10]. In a predictive model published by the COVIDSurg Collaborative the overall 12-week cancellation rate was 72.3% with most of the cancelled operations being for benign disease (90.2%)[11]. However, the model did not account for the daily infection rate and overall covid-19 mortality that can affect the cancellation rate and a different approach in the procedure management. Also, even in the national context there was a large interregional variability in the infection rate that resulted in a temporary reorganization of the national health system[12].

During the current pandemic, our institution implemented a COVID-19 free pathway and all patients are currently screened with a fast serology test (point of care) in the Emergency Department or a dedicated outpatient clinic before to being transferred to a COVID-19 free ward. In the ward, a negative nasopharyngeal swab test will give the green light to access theatre the following day and proceed to surgery. Also, surgery is prioritized based on national guidelines and only patients needing urgent treatment within 72 hours (Class U) or within 30 days (Class A) will be admitted and treated[4]. Following this clinical pathway since the 1st of March, ten COVID-19 patients had surgery with a mortality rate SARS-CoV-2 related of 10% (a 72 years old male, ASA 4, underwent emergency laparotomy for a perforated viscus). Therefore, we suggest that surgeons should operate safe with appropriate PPE (Personal Protective Equipment) in both emergency and non postponable cancer cases. In conclusion, although several studies highlighted a higher risk of mortality in patients undergoing surgery at this time, we suggest that with the right care pathway, it is safe to progress with curable interventions, trying to avoid or at least to minimize "collateral victims" due to the COVID-19 outbreak[3].

Conflict of Interest

The Authors declare that they have no conflict of interests.

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