

Guidance for safely performing oncologic surgery during the COVID-19 pandemic

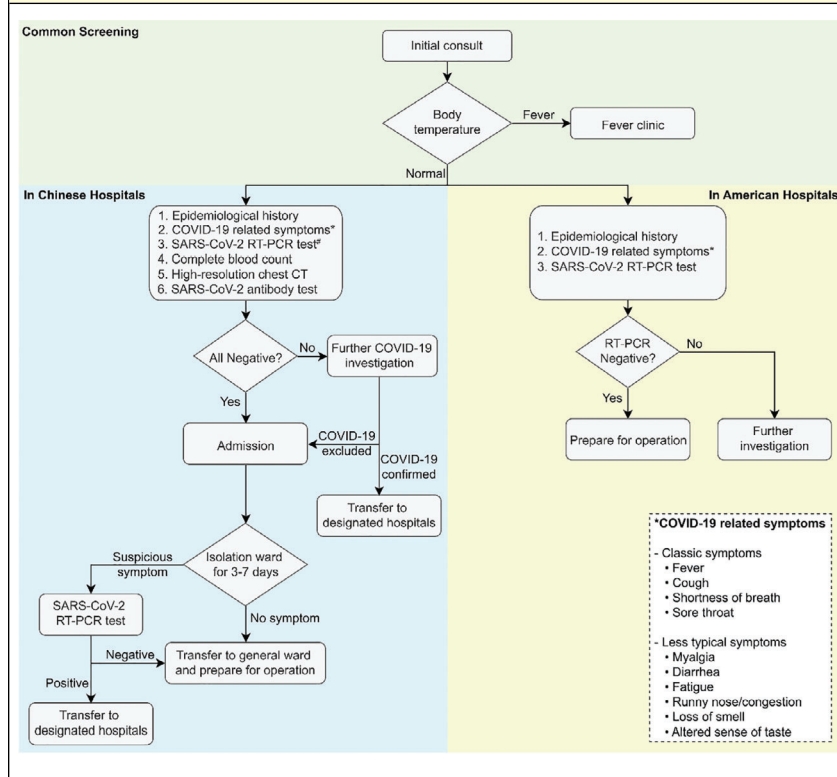
Editor

Cancer patients are a particularly vulnerable population. Recent data suggests that cancer patients have a higher incidence of COVID-19 and experience more severe disease than the general population¹. Given resource constraints and concern for patient safety during the COVID-19 pandemic, some cancer treatments such as surgical procedures are inevitably delayed². For most cancer surgeries, a brief delay may not impact outcomes, but a prolonged delay may adversely impact prognosis³. Safely performing oncological surgery in areas where COVID-19 is prevalent remains challenging due to the lack of guidance.

We instituted a standardized protocol to identify patients with COVID-19 infection through screening, preoperative testing, and inpatient observation in six tertiary care hospitals in China (Fig. 1). We first screen patients with their body temperature, COVID-19 related symptoms and exposure. Patients with negative screening undergo testing with complete blood count (CBC), computed tomography (CT) scan of the chest, and COVID-19 RT-PCR⁴. CT is chosen because recent data demonstrate that it has a high sensitivity for the detection of COVID-19 disease⁵. Patients from regions with a medium to high burden of COVID-19 disease are screened by this standardized protocol. In regions with low infection rate, a simplified protocol which includes the above-mentioned steps without COVID-19 RT-PCR testing is applied. COVID-19 antibody testing is optional. Patients with negative testing results are admitted for observation for three to seven days and proceed to surgery after demonstrating no suspicious clinical manifestations during the observation.

We have performed 4,343 operations following the simplified protocol, and 9,230 following the standardized protocol from January–April 2020. Among all surgical oncology patients, none were diagnosed with COVID-19 in the immediate postoperative period. Of note, we

Fig. 1 Preoperative screening protocol for surgical oncology patients during the COVID-19 pandemic in China and the U.S.



Patients are first screened with body temperature. Patients with fever will be referred to fever clinic for further investigation. Patients without fever will be triaged with COVID-19 related symptoms*, travel history and exposure to others with COVID-19. In the standardized protocol, CBC, CT of the chest and SARS-CoV-2 RT-PCR are universally tested. #SARS-CoV-2 RT-PCR testing is not included in the simplified protocol for regions with a low burden of COVID-19. COVID-19 antibody testing is optional since it is not widely available. Patients with negative results from all evaluations are admitted for observation in the isolation ward for three to seven days prior to their surgery. Only patients with no suspicious clinical manifestations during the observation will proceed to surgery. If a patient develops any symptoms that raise suspicion for COVID-19 infection during observation, further testing and investigation are initiated. Confirmed COVID-19 patients will be transferred to designated hospitals for treatment. (SARS-CoV-2, Severe Acute Respiratory Syndrome Coronavirus 2; RT-PCR, Reverse Transcription Polymerase Chain Reaction).

found that COVID-19 antibody testing is highly specific for excluding COVID-19 disease. Of all the patients ($n = 3652$) who had initial negative antibody testing, none were positive with subsequent COVID-19 RT-PCR testing. Our data demonstrate that oncologic surgery can be performed safely during the COVID-19 pandemic after the implementation of a comprehensive and standardized preoperative screening protocol.

While we recognize that routine preoperative hospitalization may not

be feasible everywhere, we believe the tenets of this protocol provide valuable insight and guidance to safely perform cancer-directed surgery in regions where COVID-19 is prevalent. COVID-19 RT-PCR testing has been recently applied to screen all surgical candidates in some institutions in the U.S. (Fig. 1). Considering the false negative result of the COVID-19 RT-PCR testing, adding antibody testing can significantly minimize the overall false negative rate. Ongoing data collection will allow us

to validate different approaches and optimize protocols.

H. Zhao^{1,*}, S. Yan^{1,*}, F. Zhang^{2,*}, J. D. Wright³, J. Y. Hou³, J. P. Cata⁴, X. Cai⁵, D. Xiu⁶, Y. Mao⁷, B. Zhang⁸, S. Du⁷, M. Li⁶, H. Zhang³ and J. Cai¹

*Contributed equally.

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¹National Cancer Center/National Clinical Research Center for Cancer/Cancer

Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing, China, ²Hubei Cancer Hospital, Wuhan, China, ³Columbia University Irving Medical Center, New York, NY, USA, ⁴The University of Texas MD Anderson Cancer Center, Houston, TX, USA, ⁵Sir Run Run Shaw Hospital, Zhejiang University School of Medicine, Hangzhou, China, ⁶Peking University Third Hospital, Beijing, China, ⁷Peking Union Medical College Hospital, Peking Union Medical College, Beijing, China, and ⁸Tongji Hospital, Tongji Medical College of Huazhong University of Science and Technology, Wuhan, China

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