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Critical Considerations for Hepatopanceratobilliary Surgeries During COVID-19 Pandemic

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Dear Editor,

Coronavirus Disease 2019 (COVID-19) has emerged as a worldwide pandemic since late December 2019 in Wuhan, China, with severe respiratory symptoms (1, 2). As we are currently in the middle of this pandemic, planning and prioritizing to provide elective surgery services to patients are of great importance. In our opinion, several factors should be considered when performing elective surgical procedures during the epidemic of COVID-19. These factors are also important for hepatopancreatobiliary cancers. Therefore, in addition to the need for updating the surgical recommendations at short intervals based on new data and information, it is necessary to consider the specialist views of other involved disciplines in designing guidelines for the treatment of hepatopancreatobiliary cancers. Several factors have been suggested for decision making about elective surgery, including the risk of mortality due to COVID-19, hospital resources and facilities, the risk of surgery, and the effectiveness of surgical treatment (3, 4).

1) Risk of COVID-19 and risk of complications and mortality during hospitalization

According to the published studies on patients with COVID-19 in China, the mortality rate of patients over the age of 50 has grown significantly with each decade increase in age. Also, the presence of risk factors such as cardiovascular disease, diabetes, chronic respiratory disease, hypertension, and cancer elevates the risk of death by 5 to 10 times. According to the preliminary data from Imam Khomeini Hospital complex, affiliated to Tehran University of Medical Sciences, Tehran, Iran, the COVID-19 mortality rates in the age groups of 50-60, 61-70, and over 71 years were 6.6, 15.3, and 26 times more than in patients under 50 years of age, respectively.

2) Sufficient hospital resources and facilities for surgery and postoperative care

The growing number of patients with COVID-19 admitted to hospitals results in the shortage of adequate staff for performing anesthesia and surgery, as well as ventilators in the ICU after surgery, which could have a direct impact on the decision-making process. If sufficient resources are provided, the range of elective surgeries can be expanded.

3) Risk of complications and mortality of surgical procedures

Several factors contribute to the morbidity and mortality rate of any surgical procedure, as described in previous studies. In addition to the type of procedure, the factors including age, weight, functional status, underlying diseases, medication, and smoking have also been identified as the causes of complications and mortality after surgery. Software tools for calculating surgery risks (https://riskcalculator.facs.org/RiskCalculator/ (5)) can calculate the impact of these risks. Therefore, it is necessary to consider the risk of COVID-19 and its complications for the risk of high-risk surgery.

4) The effectiveness of surgical treatment

Due to the lack of facilities for the care of operated patients, and the risk of developing COVID-19, the selected treatment methods in the current situation must be effective enough. Also, alternative therapies, such as chemotherapy, can be dangerous for patients with suppressed immune systems. Therefore, some clinicians do not recommend systemic therapies that have a therapeutic response of less than 10%. For instance, despite the potentially significant complications after Whipple surgery, this method is recommended for the treatment of resectable periampullary tumors, even under such circumstances.

At present, the priority is given to patients whose chance of successful treatment is greater than 50%. On the other hand, extensive surgery with fewer therapeu-

tic effects, such as for liver metastatic colorectal cancer, which has several negative prognostic factors, is not recommended in the current situation.

Protocol

Regarding the high incidence of COVID-19 in the community and the risk of transmission, elective surgeries should be limited as much as possible. Many surveys have shown a considerable decrease in the number of hepatopancreatobiliary surgeries during the COVID-19 pandemic (6, 7). Therefore, it is vital to propose some non-surgical approaches. Moreover, small particles during anastomosis, surgical incision, and laparoscopy can increase the risk of infection in surgery rooms. Hence, we suggested performing these surgery methods only by experts and considering higher standards of safety protocols against COVID-19 for surgeons, especially for laparoscopy. The smoke of laparoscopy can be a threat to surgeons during the surgery. Therefore, it is important to examine gas leakage before starting laparoscopy, check all devices for leakage before surgery, and consider a suitable size of the surgical incision. However, in the case of elective surgeries, non-surgical methods should be performed if acceptable non-surgical treatments are available. As a result, the laparoscopic methods cannot be considered as the best choice during this pandemic (8, 9).

Another important issue is deciding on chemotherapy. This must be decided according to hospital conditions and the country's status during the pandemic. Therefore, every cancer department must update its schedule with the last data on COVID-19. According to previous studies, an eight-week postponement of neoadjuvant chemotherapy does not affect the mortality and prognosis of some cancers such as colorectal cancer; thus, this method is followed by some cancer centers. However, as the current crisis continues, these patients need treatment and interventions. Hence, we suggest performing surgical treatments on them as the best treatment choice during this pandemic. Additionally, if the incidence of COVID-19 in a region decreases and safe cancer centers are available, we can initiate neoadjuvant chemotherapy after consulting with our multidisciplinary cancer board team and evaluating personal safety and benefit of chemotherapy in a case by case manner (8, 10).

In the cases that all mentioned issues are considered, when the hospital is not fully engaged in COVID-19, and preventive measures are met based on the infectious disease protocols, the chest CT scan of the patient should be performed before surgery. Furthermore, if patients are categorized to be at low to moderate risk in terms of surgery, anesthesia, and cardiac assessment, in our opinion, the following surgeries can be done after multidisciplinary consulting via virtual meetings (11):

1) Colorectal metastatic cancers that have received chemotherapy

2) Limited primary tumors of the liver

3) Large hepatic metastases of neuroendocrine tumors that have progressed despite medical, radioactive, and chemoembolization therapies, or metastases and limited primary and small tumors

4) Periampullary cancers that have received complete treatment of neoadjuvant chemotherapy

5) Adenocarcinoma of the body and tail of the pancreas according to standard guidelines

6) Implementing emergency surgery such as for bile duct injury with sepsis or peritonitis and cholangitis or liver abscess without response to medical treatment and the like with the approval of the surgical team

In all cases of liver surgery, lobectomy resection or less is safe.

Therefore, we recommend avoiding non-elective surgeries during this pandemic. Besides, patients should undergo operation only in emergencies and the above-mentioned conditions. Moreover, it is important to consider the health of the medical staff as the most important priority in all stages of decision-making.

Footnotes

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