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PREOPERATIVE CONSIDERATIONS IN ORDER TO RESUME ELECTIVE SURGERY DURING COVID-19 PANDEMIC

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Abstract: *The alarming spread of the novel Coronavirus necessitated the cessation of elective therapeutic procedures in most health-care facilities. This strategy has limited the spread of the virus, but with a huge socio-economic impact. For this reason, the resumption of elective surgery in the context of the coronavirus pandemic is a difficult, but necessary process. Addressing this delicate situation requires interdisciplinary collaboration, so as to ensure high quality medical care for all patients, with consideration to protection of the staff involved in the care of the surgical patient.*

INTRODUCTION

At the time of submitting this manuscript, the Strategic Communication Group of the Ministry of Internal Affairs reported 418.645 COVID-19 cases and 10.047 related deaths on Romanian territory, with 12429 cases in Sibiu. In our Hospital there is a huge strain on the Infectious Diseases, Intensive Care and Emergency Departments.

The alarming numbers of new cases in the recent days suggests that the second wave is closer than we think. Considering this fact, we have to assign resources in order to be able to keep providing high quality health-care services and keep the burden on the healthcare system as low as possible, with suffice reserve capacity.

Most of us, intensivists, are also anesthesia providers. And the most important issue to address, is providing high quality healthcare to non-Covid-19 patients, in particular the delivery of anesthesia. We are facing an ethical dilemma, should we treat patients infected with coronavirus in the detriment of the non-Covid patient, or should we treat patients not infected with this novel virus, risking the well-being of the patients and staff.

Patients infected with the novel coronavirus have higher perioperative morbidity and mortality than non-COVID-19 patients.(1-3) They are at increased risk for developing ARDS, heart injury, kidney failure and they have a high death rate.(1-4) Also, surgical procedures in the COVID patient expose the operating room staff to an increased risk of infection, due to exposure to biological products (blood, secretions, aerosols etc.).

Elevated rates of lung complications and increased mortality were reported by a study that included 1128 patients with COVID-19, who underwent a wide range of surgical procedures. Respiratory complications occurred in 51% of patients included in the study, and of these, 38% died in the first 30 days postoperatively.

The total mortality was higher in patients who underwent emergency operations compared to elective ones (26 vs 19%), higher in the male population, older than 70 years and with ASA ≥ 3.(5)

The postoperative pulmonary complications occur in half of patients with perioperative SARS-COV2 infection and are associated with high mortality, patients having postoperative outcomes substantially worse than pre-pandemice rates.(6) Thereby, we as anesthesiologists and intesivists must have a higher threshold regarding the preoperative evaluation of patients, in order in minimize patient and staff risk, but also in terms of resource allocation. In this regard we make the following recommendations about elective surgical procedures:

1. All patients must undergo a hospital screening procedure, in accordance with the local guidelines.
2. All patients who report specific symptoms of COVID-19 must be further evaluated.
3. All patients must be tested for SARS-COV2 at least 72 hours prior to scheduled surgery.
4. Patients in need of emergency surgery must be tested for SARS-CoV2 (preferably a rapid test) and if possible, the surgery should be postponed until the test result is known.
5. All patients awaiting the test results will not be transported to the operating room. In the period of time between the test and the surgery, the patient must not be exposed to COVID-19 patients or with suspects of having COVID-19.
6. In the case of patients requiring surgery for delayed emergencies (e.g. fractures for which special devices are required, special operating conditions that cannot be provided in an emergency etc.) and only comes into contact with the medical staff of the department, the period of 72 hours may be extended, until the necessary surgical conditions are provided. The extension of the validity of the test for SARS-CoV2 is done only with the consent of the anesthesist, who may decide to repeat it, if a high suspicion for infection exists.
7. In addition to routine preoperative investigations, the following tests should be performed on the anesthesiologist's indication as follows:
    a. D-dimers
    b. Fibrin monomers
    c. Fibrinogen
    d. Reactive C Protein

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e. Procalcitonin
f. Chest X-Ray or Thoracic CT-scan,

8. Because there may be false-negative results, all personnel involved in patient care, must wear personal protective equipment in accordance with local regulations.
9. We recommend a 20 minute window between surgical cases for thorough disinfection of the operating room.
10. If a patient undergoing scheduled (non-emergency) surgery is positive for SARS-COV2, surgery should be postponed until the test is negative, if the surgery is not of a vital relevance.
11. If the surgery is an emergency that cannot be postponed, it will take place in a dedicated operating room.
12. A patient is considered infectious until the following criteria are meet:
    - Temperature normalization
    - Improved respiratory symptoms
    - Two negative tests performed at a minimum interval of 24 hours
13. An assessment of human and material resources must be carried out before the start of the operating room schedule. This assessment involves an open discussion between the anesthetist, the surgeon and the staff involved in the care of the patient regarding the feasibility of anesthesia, surgery and postoperative monitoring (e.g. available beds in intensive care or in the postanesthesia care unit, availability of medical supplies needed to perform surgery and human resource availability).
14. We recommend a transparent communication between the patient, the anesthetist and the surgeon, regarding the prioritization of the surgical interventions.

The decision to take a surgical approach or to postpone/cancel a surgical intervention must be carefully weighed. Elective surgical procedures should be postponed in symptomatic patients, in patients with a high suspicion or in patients who may still have the potential to be contagious after undergoing the disease. For patients who have suffered from COVID-19, elective procedures should be delayed until cardio-pulmonary function returns to normal (or to the level of compensation prior to infection) and the patient is no longer contagious.(7)

The time required for symptom resolution and complete recovery after COVID-19 shows marked interpersonal variability. Young patients with mild / moderate forms of the disease can fully recover in a few weeks, while in the elderly with comorbidities or those with severe forms of the disease the recovery can take even more than eight weeks. As with other viral infections, the decision on the optimal operative time for non-medical conditions should be made according to the type and extent of the procedure performed, the patient's comorbidities and residual symptoms, including exercise tolerance relative to the time of infection.(8)

Optimization of patients with COVID-19 (9)

Pre-anesthetic assessment should be based on optimizing the patient's respiratory function.

1. Meticulously evaluate the airway and make a plan to address it.
2. Determine the severity of respiratory impairment - oxygen requirement, imagistic changes (Rx, CT), arterial gas.
3. Identify organ dysfunctions - signs of shock, liver or kidney failure
4. Review potential interactions between antiviral and anesthetic substances.

In conclusion, we recommend a close collaboration among intensive care, anesthesia, surgical and other medical societies, in order to have a better guidance in the perioperative period.

Meanwhile stay united and stay safe!

REFERENCES

1. Aminian A, Safari S, Razeghian-Jahromi A, Ghorbani M, Delaney CP. COVID-19 Outbreak and Surgical Practice: Unexpected Fatality in Perioperative Period. Ann Surg. 2020;272(1):e27-e29.
2. Tuech JJ, Gangloff A, Di Fiore F, et al. Strategy for the practice of digestive and oncological surgery during the Covid-19 epidemic. J Visc Surg. 2020;157(3S1):S7-S12.
3. Liang W, Guan W, Chen R, et al. Cancer patients in SARS-CoV-2 infection: a nationwide analysis in China. Lancet Oncol. 2020;21(3):335-337.
4. Lei S, Jiang F, Su W, et al. Clinical characteristics and outcomes of patients undergoing surgeries during the incubation period of COVID-19 infection [published online ahead of print, 2020 Apr 5]. E Clinical Medicine. 2020;21:100331.
5. Cook TM, El-Boghdadly K, McGuire B, McNarry AF, Patel A, Higgs A. Consensus guidelines for managing the airway in patients with COVID-19: Guidelines from the Difficult Airway Society, the Association of Anaesthetists the Intensive Care Society, the Faculty of Intensive Care Medicine and the Royal College of Anaesthetists. Anaesthesia. 2020 Jun;75(6):785-799. doi: 10.1111/anae.15054. Epub 2020 Apr 1. PMID: 32221970; PMCID: PMC7383579.
6. COVID Surg Collaborative. Mortality and pulmonary complications in patients undergoing surgery with perioperative SARS-CoV-2 infection: an international cohort study [published online ahead of print, 2020 May 29] [published correction appears in Lancet. 2020 Jun 9;].Lancet. 2020;S0140-6736(20)31182-X.
7. Codru RI. 04 September 2020. Accessed 01 November 2020, <https://drrmasterclass.ro/ati/2020/09/04/managementul-perioperator-al-pacientilor-cu-covid/>
8. London MJ, 08 September 2020. Accessed 01 November 2020, <https://www.uptodate.com/contents/coronavirus-disease-2019-covid-19-anesthetic-concerns-including-airway-management-and-infection-control>
9. Tang G, Dr. Kam A, Chan M, 6 April 2020. Accssed 01 November 2020, <www.wfsahq.org/components/com_virtual_library/media/1c4ec5c64b9aaacf7c47f76a61fb6edc-atow-422-01.pdf>