Acta Biomed 2020; Vol. 91, N. 3: e2020027 DOI: 10.23750/abm.v91i3.10076

Surgical activity organization during COVID-19 outbreak: a teaching hospital experience

Valentina Bellini[1], *Federico Cozzani*[2], *Paolo Del Rio*[2], *Elena Bignami*[1]

[1] Anesthesiology, Critical Care and Pain Medicine Division, Department of Medicine and Surgery, University of Parma, Parma, Italy; [2] General Surgery Unit, Department of Medicine and Surgery, University of Parma, Parma, Italy

To the Editor,

Italy was one of the first countries to suffer from COVID-19 outbreak (1); in a very short time, our National Health Service was forced to adapt to clinical and organizational needs imposed by the emergency clinical situation.

One of the issues that posed major problems is surgery. As is well known, viral contagiousness is high (2). This posed the question if it was safe to continue with surgical activity within a hospital that deals with COVID-19 patients. Among these, oncological surgery has required a specific reflection (3).

Advantaged by the fact that the outbreak exploded in Parma a few days later than the first Italian outbreak, we promptly decided to immediately establish "COVID-19" and "NON-COVID-19" intrahospital paths. Almost daily, following logistic changes necessary for the expansion of areas dedicated to COVID-19 patients, specific maps were set and sent to all healtcare personnel. For COVID-19 negative patients who needed hospitalization in ICU, a specific area was dedicated within the "NON-COVID-19 ICU", located in a different building than ICUs dedicated to treat COVID-19 patients. Meanwhile, specific beds within the "COVID-19 ICU" were intended for COVID-19 positive surgical patients. A separated emergency operating area for positive or suspected patients was also set.

All healthcare professionals have been informed about management protocols for adult surgical patients. In case of suspected or ascertained case, procedure is carried out in the operating section dedicated to COVID-19 patients, following specific rules in order to minimize contagion between patients and between patients and healthcare professionals. In the other cases, specific preventive measures have been provided to limit the possibility of eventual viral spread anyway and the related PPE are worn, as per WHO recommendations (4).

Depending on surgery procrastinability, procedures were distinguished in elective, urgent and emerging (Fig. 1). In the event of an emergency, there is no time for determining any positivity, using swab or serological analysis, and patients are considered as "positive" and the specific protocol is implemented. For elective surgery, at most 48-72 hours before swab is performed; in case of positivity, surgical procedure is delayed until negative; in case of negativity, the surgical procedure is performed. In case of urgency: if deferrable, it follows the same procedure for elective interventions; if not, postponable follow the emergency procedure path. Following this organization, we have not reported cases of contagion between patients and healthcare professionals.

The choice of surgical technique is also constantly evaluated and analysed. Authors highlighted the risk of virus release during laparoscopy with carbon dioxide and suggested the use of devices to filter released CO2 for aerosolized particles (5). Biologic material is a known component of surgical smoke. The aerodynamic size of COVID-19 has been reported in the range of 0.06 - 0.14 μm (6). Laparoscopic smoke

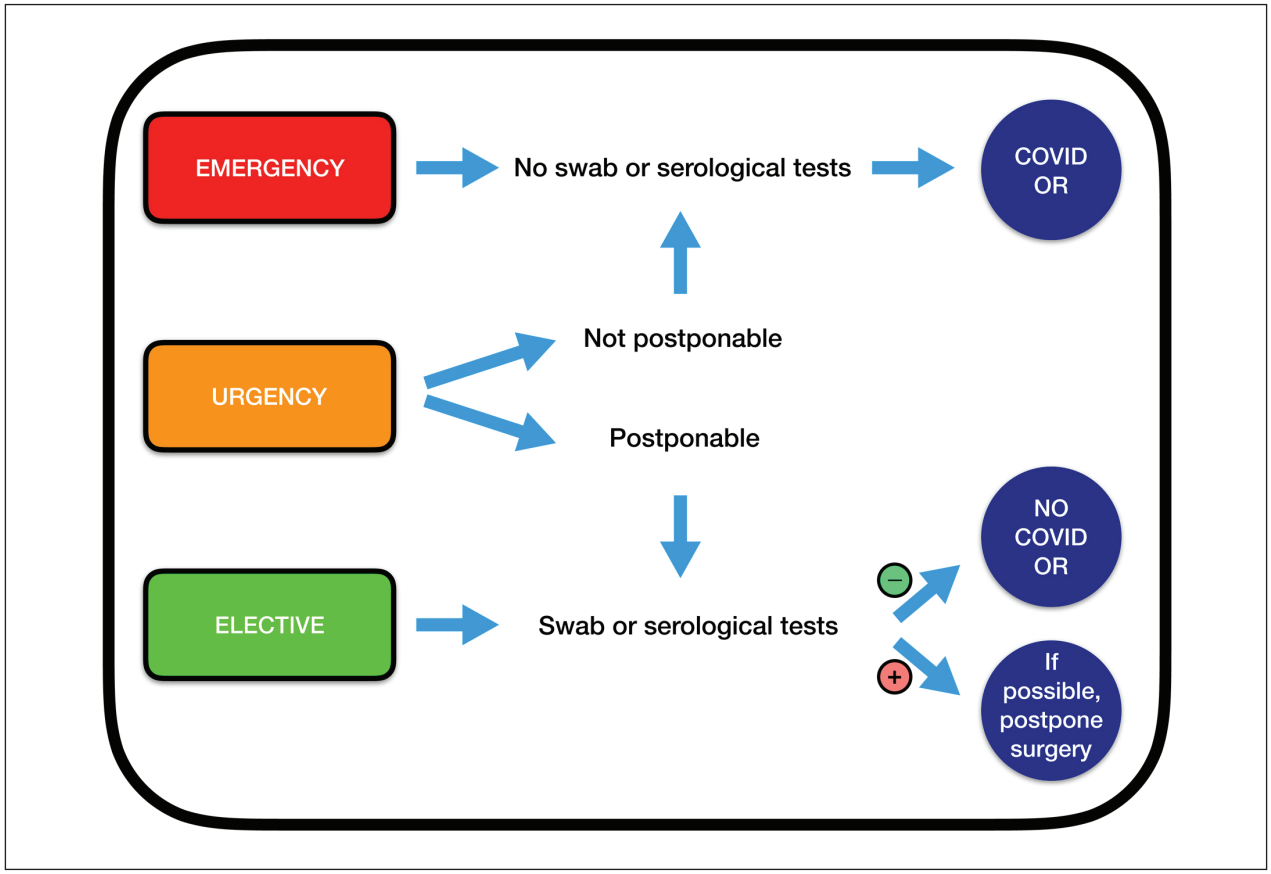

Figure 1. Flow chart of the organization of the surgical activity according to the degree of priority

evacuation systems with appropriate filters may reduce the risk associated with surgical smoke exposure, but the complete elimination of risk is practically unrealistic. In absence of smoke extraction devices, the use of laparoscopy must be carefully evaluated due to the potentially infected aerosols formation. Only in selected cases, in which laparoscopy strongly reduces patient mortality or morbidity risk, laparoscopy remains allowed with the necessary precautions (pneumoperitoneum at the lowest possible pressures, careful trocars extraction, minimum electrocautery use set at minimum power possible) (5).

This organization has involved great efforts both by Health Authorities and by all healthcare operators involved; however, it allow our hospital to be the only one in the area still able to guarantee patients safe access to surgical treatment.

We hope our experience, characterized by the early creation of separate paths, to be a possible example for other structures that are or will be facing such a clinical situation.

Authors' contributions

VB: substantial contribution to conception, drafting the article, final approval of the version to be published, agreement to be accountable for all aspects of the work

FC: substantial contribution to conception, drafting the article, final approval of the version to be published, agreement to be accountable for all aspects of the work

PDR: substantial contribution to conception, revising the articleit critically for important intellectual content, final approval of the version to be published, agreement to be accountable for all aspects of the work

EB: substantial contribution to conception, revising the articleit critically for important intellectual content, final approval of the version to be published, agreement to be accountable for all aspects of the work

Conflict of interest: Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article

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Received: 23 June 2020
Accepted: 23 June 2020
Correspondence:
Elena Bignami
Anesthesiology, Critical Care and Pain Medicine Division, Department of Medicine and Surgery, University of Parma, Viale Gramsci 14 - 43126 Parma, Italy
E-mail: elenagiovanna.bignami@unipr.it