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Research Article

Programmatic Surgical Care in Cured Covid-19 Patients: Prospective Study with Review of the Literature

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Abstract

Objective: Given a possible persistent multi-systemic symptomatology during coronavirus disease 2019. It is important to consider the impact of a previous SARS-CoV-2 infection on the increase in postoperative morbidity and mortality, to that a postponement of the surgery proves to be necessary but this must always be counterbalanced by a potential deleterious effect of the delay of the intervention.

The objective of our study is to assess the impact of a SARS-CoV-2 infection on the postoperative evolution in a patient cured of COVID-19 and to discuss the modalities and optimal delays of a planned surgery based on a review of the international literature.

Material and Methods: This is a descriptive prospective study of a series of 66 patients with a history of recent confirmed SARS-CoV-2 infection and having had a scheduled surgery within 4 to 8 weeks. after the acute phase, in the operating theater of the Mohamed V military training hospital in Rabat, over a period of 9 months between September 2020 and May 2021.

Results: We noted that only 6.06% of patients had a postoperative complication including: 3.03% infection of the surgical site, 1.51% sepsis on a urinary tract infection and 1.51% postoperative bleeding and no death has not been recorded.

While in the literature a postponement of scheduled surgery for 7 weeks after SARS-CoV-2 infection is the delay associated with a lower risk of postoperative morbidity and mortality, these delays are really of little contribution in our study.

Keywords: Surgery; Post COVID-19; Delay; Complications

Introduction

In December 2019, following the emergence of a number of cases of pneumonia of unknown origin in Hubei province in China, severe acute respiratory syndrome coronavirus type 2 (SARS-CoV-2) was identified. As the RNA virus responsible for "coronavirus disease 2019" (COVID-19). This virus quickly spread around the world, on March 11, 2020 the World Health Organization officially declared a global pandemic [1]. Knowledge about COVID-19 has increased particularly in the acute phase of infection, where the clinical presentation of SARSCoV-2 infection can vary from asymptomatic, mild or even Acute Respiratory Distress Syndrome (ARDS) or multiple organ failure. However, a recent study conducted in the United States revealed that 35% of patients have persistent symptoms following an infection with SARS-CoV-2 and these 14 to 21 days after a positive screening test. This rate was 26% in young subjects with no significant pathological history [2]. This clinical entity grouping together all the persistent symptoms is known as "post-COVID syndrome", "long COVID-19" or "chronic COVID-19" whose etiopathogenesis and clinical-biological characteristics remain poorly understood [3]. Although the pandemic continues to continue and with the resumption of planned surgery activity and the easing of restrictive measures as well as the reintegration of thousands of patients who have had a SARS-CoV-2 infection in the community and who are going to present for scheduled surgery; Intensive care anesthesiologists as well as surgeons find themselves faced with the need to establish well-defined standards and guidelines for the practice of surgery. It is therefore appropriate to consider the longer-term effects of COVID on the surgical risk on the one hand and on the other hand on the increase in postoperative morbidity and mortality in the face of a previous infection with SARS-CoV-2. There are few data regarding the impact of antecedents of COVID-19 on postoperative course; a large prospective residential cohort study ional, multicenter made around 140,231 patients currently represents the only study reporting robust data concerning the optimal timing of surgery following a SARS-CoV-2 infection. This study suggests that a postponement of surgery for 7 weeks or more after COVID-19 is the delay associated with less postoperative morbidity and mortality, but this must always be discussed and weighed against the possible risks of this postponement. For this, several anesthesia and surgery societies have tried to offer general recommendations regarding planned surgery activity in patients cured of COVID-19. But none of them have come up with well-detailed guidelines for preoperative assessment and surgical risk stratification of subjects presenting for elective surgery after SARS-CoV infection. -2. It should be noted that there is currently only one article based on the experience of a center in Oregon in the United States which proposes a protocol for the preoperative evaluation of patients who have previously tested

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positive for COVID and who are scheduled for surgery [4]. A need for standardization of recommendations is always essential. In this context, we carried out a prospective cohort study at the level of the Anesthesia, Resuscitation and Surgery Poles of the Mohammed V Military Instruction Hospital including patients with a previous SARS-CoV-2 infection who were admitted for planned surgery during which we tried to assess postoperative complications and review recent literature on the series and recommendations proposed by learned societies.

Objective

-Evaluate the rate of specific postoperative complications for patients with a previous SARS-CoV-2 infection who were admitted for surgery in the operating theater department of the Mohamed V Military Hospital in Rabat.

-To review the risks and pathophysiology of postoperative complications following a SARS-CoV2 infection.

-Complete a review of the literature on recommendations on safe timeframes for performing surgery in patients with a history of SARS-CoV-2 infection.

Materials and Methods

This is a prospective and descriptive study of a series of patients with a recent history of documented SARS-CoV-2 infection and planned for scheduled surgery in the operating room of the Military Hospital of Instruction. Mohamed V "HMIMV" of Rabat over a period of 09 months between September 2020 and May 2021.

This study was carried out in two departments: the anesthesiology department and that of the operating theaters of the Mohamed V Military Hospital of Rabat.

We conducted a prospective study over a period of 09 months from September 2020 to May 2021 listing all patients admitted to the operating room of the Mohammed V Military Hospital for scheduled surgery. All patients previously infected with SARS-CoV-2 were included in this study. An analysis was carried out for the demographic characteristics of these patients, the data of the preoperative examination, the nature of the scheduled surgery, the history of SARS-CoV-2 infection, its severity, the notion of stay in intensive care, the time interval between surgery and early postoperative complications.

Inclusion criteria

-Patients over the age of 18.

-Scheduled surgery.

- ATCD of COVID-19 confirmed.

Exclusion criteria

-Patients under the age of 18.

- Urgent surgery.

- Absence of biological confirmation by RT-PCR of the COVID-19 attack.

-A perioperative SARS-CoV-2 infection.

-Patients operated under local anesthesia.

Protocol adopted by the anesthesiology department of the HMIMV: In our study, a history and a complete clinical examination must be done during the pre-anaesthetic consultation for all patients who have a history of SARS-CoV-2 infection and who are scheduled for surgery under general anesthesia. Minimum requirements before proceeding with surgery include complete resolution of symptoms associated with SARS-CoV-2 infection and adequate clinical recovery time: We have chosen a minimum recovery time of 4 weeks for patients who have had an infection asymptomatic to SARS-CoV-2 and 6-8 weeks for symptomatic patients, given that there is currently little data on recovery time. The history and clinical examination emphasize the evolution of COVID-19 presented by each patient, the symptoms may be related to occult complications of COVID-19. In addition to e these basic requirements, objective additional examinations are requested depending on the severity of the symptomatology presented during SARS-CoV-2 infection, the complexity of the surgical procedure and the need for general anesthesia (Table 1). These examinations are used to assess the patient's cardiopulmonary function, hemostasis assessment and biological markers of inflammation. Any abnormal value may indicate incomplete resolution of the disease, which may increase the risk of per or postoperative complications.

The following data were collected for each patient: age, gender, physical status, ASA, existence of pulmonary comorbidities, indication for surgery; the grade of the surgery (major/minor).

-Age was classified according to 3 brackets.

-Sex.

- Data from the preoperative clinical examination: The physical status of the American Society of Anesthesiologists was classified as grade 1 to 2 or 3 to 5.

-The nature of the scheduled surgery.

-The history of a SARS-CoV-2 infection, its severity with the notion of stay in intensive care, the interval between surgery and early postoperative complications.

-The indications for surgery were classified as follows: benign or neoplastic pathology.

Definitions [5]:

-Prior SARS-CoV-2 infection: was defined as a diagnosis of COVID-19 made using RT-PCR on a nasopharyngeal swab 7 days or more before the surgery date.

-Perioperative SARS-CoV-2 infection: was defined as a diagnosis of COVID-19 made within 7 days before surgery until the 30th day after surgery. The day of the operation being considered as day 0.

Patients with SARS-CoV-2 infection may present with clinical manifestations, ranging from the absence of symptoms to a severe clinical picture.

In general, patients with COVID-19 can be grouped into categories according to the severity of the clinical picture. However, the criteria for each category may overlap or vary from one clinical guideline, one clinical trial to another, and a patient's clinical condition may change over time:

-Asymptomatic or pre-symptomatic infection: Patients who test

positive for SARS-CoV-2 infection using a virological test (a nucleic acid amplification test or an antigen test) , but who show no signs of SARS-CoV-2 infection.

- Mild infection: Patients who exhibit any of the various clinical signs associated with SARS-CoV-2 infection (including fever, cough, odynophagia, malaise, headache, myalgia, nausea, vomiting, diarrhea, loss of taste and/or smell), but who do not have dyspnea or abnormal chest imaging.

- Moderate form: Patients who present with signs of lower respiratory tract infection during clinical evaluation or imaging and who present with SpO2 oxygen saturation ≥94% on ambient air.

-Severe form: People with SpO2 < 94% on ambient air, a ratio between arterial oxygen pressure and the fraction of inspired oxygen PaO2/FiO2 < 300, a respiratory rate > 30 cycles/min or infiltrates pulmonary > 50%. Patients who have presented with respiratory failure, septic shock and/or multiple organ failure.

Results

A. Number of Patients

During the study period, 6431 patients were scheduled for surgical procedures performed in the operating theaters of the Mohammed V Military Hospital in Rabat. 66 patients had a history of SARS-CoV-2 infection revealed during the questioning of the pre-anaesthetic evaluation, i.e. a prevalence of 1.02%. We are not aware of any patients whose surgery has been delayed or canceled due to discrepancies discovered during their assessments. On the other hand, the operation was delayed due to time constraints only for 2 patients (Table 2).

B. Age and Sex of Patients

The average age of our patients is 58.5, of which 34.8% are over 65 with a male predominance and a sex/ratio of 2 (twice as many men as women) (Table 3).

C. Comorbidities and ASA Status

Hypertension is the most found comorbidity in our patients with a rate of 37.8%, comes after diabetes and neoplastic pathology (Table 4).

Of all the patients in our series, 75% have an ASA I or II status, and ¼ were classified as ASA III to IV (Table 5).

Table 1: Protocol for the preoperative objective assessment of patients with SARS-CoV-2 infection, stratified according to the degree of severity of COVID-19 and the grade of surgery.

Grade of surgery	Minor surgery and/or general anesthesia	Major surgery
Examination	Asymptomatic	Symptomatic
Radio of the lungs	Yes	Yes
Ecg	Yes	Yes
Echo cardiography	No, if the cardiac examination, and vital parameters are normal	Consider according to the severity of the disease.
D-Dimers	No	Yes
Fibrinogen	No	Yes
LDH, Ferritinemia, Albumin	No	Consider according to the severity of the disease

Table 2: Patients with a history of SARS-CoV-2 infection operated on during the 9 months.

Patients operated on during the study period	6431
Patients with COVID-19 history operated on	66

Table 3: Mean age and gender of patients with a history of SARS-CoV-2 infection who underwent surgery.

	Total (N = 66)	%
Average age	58.5	30 - 75
30 -54 years	20/66	30,3
55-64 years	23/66	34,8
≥ 65 years	23/66	34,8
Female	22/66	33,3
Male	44/66	66,6

Table 4: Comorbidities of patients with a history of COVID-19 operated on during the 9 months.

Asthma-BPCO	4/66	6.06%
Diabetes	11/66	16.60%
High blood pressure	25/66	37.80%
Other heart disease	4/66	6.06%
Neoplasia	9/66	13.60%

Table 5: Distribution of patients with history of COVID-19 according to ASA classification.

ASA	Number	%
I -II	50/66	75,7
III-IV	16/66	24,2

Table 6: Distribution of patients by type of surgery and pathology.

Type of surgery	Number	%
Benign	27/66	40
Tumor	39/66	60
Pathology	Number	%
ENT	6	9
Gynaecological	5	7,5
Digestive and hepatobiliary	25	37,8
Thoracic	2	3
Uroprostatic	9	13,6
Traumatology and orthopaedics	10	15,1
Neurosurgery	3	4,5
Other	6	9

D. Surgical type and pathology: (Table 6).

E. Characteristics of Sars-cov-2 Infection

48 patients had a non-severe form, i.e. 72.7%, while 18 patients, i.e. 27.3%, reported severe symptomatic forms requiring hospitalization (Table 7).

Of the 66 pa Ten of our series 18 presented severe forms, i.e. 27.3% of our group, the majority of whom presented respiratory symptoms. For the 48 patients who presented non-severe forms, 15/48 or 31.2% were asymptomatic: patients who were diagnosed either as a contact

Table 7: Distribution of patients with a history of SARS-CoV-2 infection according to severity of COVID-19 involvement.

Severity	Number	%
Non-severe forms	48/66	72,7
Severe forms	18/66	27,3

Table 8: Distribution of patients with history of COVID-19 by symptomatology.

	Total patients 66	Non-severe forms 48	Severe forms 18
Asymptomatic	15/66	15 /48	-
Respiratory signs	30/66	12/48	18/18
Dyspnea	30 /66	16/48	14/18
Dry cough	35/66	24/48	11/18
Fever	49/66	33/48	16/18
Digestive signs	11/66	6/48	5/18
Fatigue	49 /66	34/48	15/18
Palpitation	9/66	6/48	3/18
Dizziness	7/66	2/48	5/18
Headache	13/66	6/48	7/18
Admission to hospital	42/66	24/48	18/18
Stay in intensive care	7/66	-	7/18

Table 9: Preoperative work-up according to severity of SARS-CoV-2 infection.

	Total patients	Non-severe forms 48	Severe forms
	66		18
Lung X-ray	51/66	33/48	18
ECG	46/66	28/48	18
Echocardiography	12/66	2/48	10/18
Chest CT	6/66	-	6/18
D-Dimer	3/66	-	3/18

case or systematically. Fever was reported by 49 patients and digestive signs only in 11 patients. Finally, 42/66 patients were hospitalized, i.e. 63.6%, and 7 of them were hospitalized in intensive care (Table 8).

F. Preoperative Assessment

The chest X-ray was systematically requested in 51 patients while the chest CT was only requested in 6 patients with severe forms. Finally, D-Dimers were performed in 3 patients with a notion of stay in intensive care (Table 9).

G. Post-Operative Follow-up

We noted that only 4/66 patients presented a postoperative complication, i.e. 6.06% of which:

- 2/66 (3.03%) had a surgical site infection.

- 1/66 (1.51%) sepsis on a urinary tract infection.

- 1/66 (1.51%) postoperative bleeding.

- No deaths were recorded.

- No thromboembolic complications were recorded.

- No pulmonary complications were recorded.

Discussion

After the pandemic linked to SARS-CoV-2, the resumption of planned surgery activity was associated with several challenges explained by a complexification of the organizational measures which are essential and a dynamic adaptation of different management strategies. . Knowledge about COVID-19 has focused mainly on the acute phase of the disease, but with the increase in the number of survivors of COVID-19, it is important to consider the effects incurred post infection. Standardization of strategies and precautions in the context of surgical care in a cured COVID-19 patient is essential in the face of the clinical particularities that may be presented by these patients. For this, several anesthesia and surgery societies have tried to suggest general recommendations for the resumption of planned surgery activity following the relaxation of the restrictions that have been taken in the face of this pandemic [6]. But none of them has managed to offer well-detailed guidelines regarding the preoperative evaluation as well as the risk stratification of subjects who present for elective surgery after a SARS-CoV infection. -2. It should be noted that there is currently only one article based on the experience of a hospital center in Oregon in the United States describing a protocol for the preoperative evaluation of patients who previously tested positive for COVID and who are scheduled for surgery [4]. In this protocol proposed by Bui et Al, a total resolution of clinical signs related to COVID-19 with a recovery time of 4 weeks for those who had presented an asymptomatic form of SARSCoV-2 infection and 6 to 8 weeks for patients who had presented a symptomatic form are thus imposed before surgery. In addition, an interrogation with a complete clinical examination and a measurement of spo2 are systematically carried out during the pre-anaesthetic consultation for all patients proposed for scheduled surgery. Aiming to specify in particular: the evolution of the SARS-CoV-2 infection, the presence of persistent symptoms after clinical recovery, the existence of signs that may be related to possible complications as well as an assessment functional capacity. For subjects over the age of 65 and/or who have been hospitalized for COVID-19, an assessment of frailty through the Edmouton frailty scale is performed preoperatively. Additional examinations were also requested depending on the severity of the SARS-CoV-2 infection, the grade of the surgery and the fact of performing surgery under general anesthesia. These examinations aim to evaluate in particular the cardiac and pulmonary function, the nutritional state of the patient, the haemostasis assessment as well as the biological markers of inflammation, where a pathological value is in favor of an increased risk of occurrence. postoperative complications. Arterial blood gas was not requested, since a complete metabolic work-up with measurement of oxygen saturation can provide similar data. However, additional exploration by respiratory functional exploration was not requested in this protocol. At the end of this evaluation protocol, any anomaly found requires further examination and/or specialized explorations with a multidisciplinary discussion. The patient must thus be informed and made aware of the importance of additional exploration to be carried out before scheduled surgery.

The high-society health authority (HAS) has proposed a particular clinical and paraclinical evaluation of Patients cured of a Sars-Cov-2 Infection [7]. This preoperative evaluation includes a history and a complete clinical examination with, above all, a cardio-

pulmonary, musculoskeletal, neurological and hepatic and renal function assessment.

The French society of anesthesia and resuscitation (SFAR) has also developed a preoperative evaluation protocol [8], it is a face-to-face consultation with consideration of standard precautions. In developed countries, teleconsultation is increasingly recommended to limit the risk of transmission. This is a delocalized consultation particularly indicated for minor surgeries and in patients with an ASA score between 2 and 3. It is advisable to systematically carry out screening during the pre-anaesthetic consultation, regardless of face-to-face or teleconsultation. , This through a standardized questionnaire looking for the presence of major symptoms including fever, dyspnea, anosmia, ageusia or minor including headaches, diarrhea, vomiting, myalgia and asthenia, Search for notion of contact with a case suspected or confirmed, history of SARS-CoV-2 infection documented or not, asymptomatic or symptomatic with the date of onset and disappearance of symptoms, the existence of persistent symptoms. However, a systematic taking of the temperature is always required.

With regard to postoperative morbidity and mortality in cured covid 19 patients, a prospective multicenter "COVID-Surg-Cancer" cohort study [9] comparing, post-scheduled surgery for neoplasia, a total of 122 patients cured of a SARS-CoV-2 infection with a matched group made up of 448 patients who did not have this infection: For patients with a history of COVID-19, 22% were operated on within 2 weeks of diagnosis, 49% between the 2nd and 4th week and 28% after 4 weeks of diagnosis. The results showed that those who were already infected are more likely to develop a postoperative pulmonary complication (11%) compared to those who had not had COVID-19 (4%) with an estimated adjusted odds ratio at 3.84. However, these complications were more frequent in patients who underwent major surgery than those with minor surgery, but the difference remained statistically insignificant. For patients who were operated within 4 weeks from the onset of the infection to the operation, no postoperative complications were reported and no deaths were recorded.

For this, the Royal Australasian College of Surgeons (RACS) indicates that scheduled surgery in a patient with neoplasia must be postponed for at least 4 weeks after a SARSCoV-2 infection.

Another multicenter international prospective cohort study, including patients having undergone all types of surgeries classified as follows: oncological surgery, benign disease, trauma or obstetrics. It was either scheduled or urgent surgery of minor or major grade [10]. Including ARDS, pneumonia or postoperative patient placement on unscheduled ventilation. A total of 140,231 patients, in 1674 hospitals in 116 countries were studied. 3127 patients or 2.2% were diagnosed preoperatively and it is noted that most patients were asymptomatic at the time of surgery. Of which 36% of cases were operated within 0 to 2 weeks after diagnosis of SARS-CoV-2 infection, 14.7% of cases within 3 to 4 weeks, 10.4% in a period of 5 to 6 weeks and 38.4% of cases within a period greater than or equal to 7 weeks. Patients with postoperative COVID-19 have more of an ASA physical status between 3 and 5 (32% of cases) compared to those who have not had COVID-19 (24.9%) with more major surgery (64% against 59.6) on the other hand, the age group greater than or equal to 70 years was lower for patients who had had a SARS-CoV-2 infection (16.1% against 19.2%). The overall death rate at 30 postoperative days was estimated at 1.5%. According to the time between surgery and diagnosis of SARS-CoV-2 infection, this mortality rate at 30 postoperative days was estimated as follows: 9.1%: between 0 and 2 weeks, 6.9%: between 3 and 4 weeks, 5.5%: between 5 and 6 weeks, 2%: for the period of 7 weeks or more. This against a rate of 1.4% for patients who did not present a SARS-CoV-2 infection preoperatively, which is in favor of an increased risk of mortality at 30 postoperative days in patients infected preoperatively. hear. This risk in patients who did not have a SARS-CoV-2 infection was almost similar to that in patients with a delay between surgery and infection greater than or equal to 7 weeks. The same findings were deduced for the sensitivity analysis grouping together only the patients who underwent elective surgery.

Patients with persistent symptoms have a higher 30-day mortality rate compared to those who were asymptomatic from onset or who had few symptoms. In addition, 2.8% of the total number of patients studied presented a postoperative pulmonary complication within 30 days following the intervention, distributed as follows: 1.7% in the form of pneumonia, 0.8% in the form of ARDS and 0.8% unexpected mechanical ventilation. Similarly sensitivity analysis for elective surgery showed the same findings, patients who underwent elective surgery within the time intervals 0-2 weeks, 3-4 weeks and 5-6 weeks after infection have a higher rate of postoperative complications compared to those who did not have COVID-19. Patients who underwent surgery within 7 weeks or more have a rate of postoperative complications at 30 days similar to those who had not had COVID-19. The authors also noted that among patients whose delay was greater than or equal to 7 weeks, those with ongoing symptoms had a higher 30-day mortality rate. To date there are limited data that address delays to surgery in patients recovering from COVID. At the end of this study, which is still the 1st and only study that provides solid results concerning the optimal time for elective surgery in patients with cured COVID-19: Subjects who were operated on within the following 6 weeks of a SARS-CoV-2 infection are more likely to present postoperative complications at 30 days or even mortality at 30 days postoperatively. In patients who have undergone surgery at 7 weeks or more of a SARS-CoV-2 infection, the risk drops to baseline. These results were also correlated with: - A low risk defined by: an age below 70 years, an ASA physical status between 1 and 2 in addition to minor surgery. A high risk defined in turn by: an age greater than or equal to 70 years, an ASA physical status between 3 and 5 and a context of major surgery.

The authors of the study reported above therefore indicated postponing scheduled surgery for a period of at least 7 weeks following an infection with SARS-CoV-2 in order to reduce the risk of mortality and postoperative complications. In addition, for patients with persistent symptoms related to "a LONG COVID", it is indicated to further postpone the surgical procedure until the symptoms disappear. However, it should be noted that this study did not distinguish patients who were asymptomatic for surgery delays of less than 7 weeks in relation to infection. The precise timing of surgery after a SARS-CoV-2 infection remains a decision between anesthesiologists and surgeons taken on a case-by-case basis, taking into account the possible risks of infection on the postoperative

consequences and balancing the benefits/risks.

The American Society of Anesthesiologists (ASA) and the Anesthesia Patient Safety Foundation (APSF) [11] recommend a 4-week delay for patients who have had asymptomatic SARS-CoV-2 infection or who presented in the acute phase mild non-respiratory symptoms and a 6-week delay for patients who had symptomatic COVID-19 but did not require hospitalization. A delay of 8 to 10 weeks for patients who have had symptomatic COVID-19 requiring hospitalization or special conditions diabetic or immunocompromised patients, given that diabetic subjects are more at risk of developing a severe picture of COVID-19 and therefore greater risk of being hospitalized. A 12-week delay is also recommended for patients who were hospitalized in an intensive care unit.

The ASA and the APSF further state that these recommendations must be adapted for each patient according to [11] The terrain and the underlying comorbidities, the type of major or minor surgery and the possible postoperative complications, The assessment of the preoperative risk , The benefit/risk ratio of a possible postponement of the surgical act.

The authors report that a delay in elective surgery in a patient with neoplasia is likely to generate a negative impact on morbidity and mortality and postoperative results for this the time to surgery following a SARS-Co infection. V-2 should be specified with caution [12].

Conclusion

With the cautious resumption of planned surgical activity, it is important that potential chronic health issues presented by recovered COVID-19 patients should be considered when considering surgery. Currently, there is no standardized protocol to provide a clear framework to follow for this population of patients whose incidence is increasing every day. Specifying how to assess patients with a history of COVID-19 scheduled for surgery currently remains one of the major challenges that has arisen in the face of great clinical uncertainty and the impact of previous SARS-CoV-2 infection on postoperative morbidity and mortality. In this respect, the only major international study has been able to conclude the optimal times for surgery following COVID-19. Surgery within 6 weeks of diagnosis of COVID-19 is associated with an increased risk of pulmonary complications and 30-day postoperative mortality. To reduce this risk, a delay in surgery beyond 7 weeks has been recommended but this should always be discussed.

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