Live Recommendation on Surgical Patient Safety in Relation to COVID-19 Infection and Vaccination

Version	Effective Date
1	APR 2022

Document No.	HKCA – P18 – v1
Prepared by	College Guidelines Committee
Endorsed by	HKCA council
Next Review Date	Oct 2022

Table of Contents

1. Purpose

1.1 To provide frequently updated recommendation on safety concerns for surgery in patients with current or previous COVID-19 infection, or who have recently received or soon plan to receive a COVID-19 vaccination.

1.2 Interpretation of the recommendation is subjected to clinicians, taking into considerations of individual patients' condition and discussion among operating team members. Expert opinion from other specialties maybe required.

2. Scope

2.1 This document is intended to apply to fellows and trainees involved in perioperative care of surgical patients.

3. Background

3.1 The Hong Kong College of Anaesthesiologists (HKCA) has produced this *Living recommendation* to provide current advice to our fellows and trainees on managing surgical patient in the rapidly changing environment of the COVID-19 pandemic.

3.2 As living recommendation, the document will be reviewed and updated frequently. Before making use of this document, please ensure you are accessing the latest version, which is available from the college website (www.hkca.edu.hk).

4. Recommendations on surgical patients and COVID-19 infection

4.1 Timing of surgery after a confirmed COVID-19 infection

4.1.1 Principles

Decisions regarding surgical timing will require careful consideration of possible sequelae of COVID-19 infection, the urgency of the required surgery and the expected physiological effects of surgery and anaesthesia on the patient. After 7 weeks, the perioperative risk is thought to return to baseline in those who had asymptomatic COVID-19 infection and/or those whose symptoms have resolved.

Long COVID, cardiorespiratory and/or immunological sequelae post COVID-19 infection should be considered and optimized, especially in the presence of persisting symptoms including fatigue.

It is of the utmost importance to ensure that patients whose surgery is delayed due to COVID-19 infection are not lost to follow-up, and unnecessary

prolonged delays to diagnostic procedures or surgery are avoided, to prevent poorer short and long term outcomes.

4.1.2 Elective surgery

For unvaccinated patients, it is recommended that post PCR or RAT confirmation of COVID-19 infection, non-urgent elective surgery should be delayed for a minimum of 7 weeks, provided that the patient has returned to baseline function and is symptom free. Those with ongoing symptoms may benefit from further delay if circumstances allow.

For vaccinated patients with a break-through COVID-19 infection, the decision, in the absence of current specific evidence, varies according to the severity of the break-through infection. Patients with a fully resolved mild or asymptomatic infection may be treated like patients requiring deferral after acute respiratory illness. Patients with a more significant break-through infection should be treated the same as the unvaccinated patients post COVID-19 infection.

4.1.3 Time-sensitive surgery

For time-sensitive surgery (e.g. cancer surgery), the individual risk versus benefit of proceeding and delaying needs to be carefully assessed. Ideally a plan is formulated based on shared decision making between all involved in the patient's care, to ensure optimal timing. From the available evidence, perioperative outcomes start to improve after two weeks predominantly in the asymptomatic group of patients, though the best outcomes are found more than 49-day post PCR/RAT confirmation of COVID-19 infection for both asymptomatic and symptomatic patients with resolved symptoms. Patients with persistent symptoms at seven weeks have worse outcomes.

4.1.4 Acute or time-critical surgery

For acute or time-critical surgery, it should be proceeded as required with multidisciplinary support from the infectious diseases, intensive care, cardiology, respiratory and renal units as appropriate. It is essential that acute or time-critical surgery is not delayed waiting for test results in a patient suspected of having COVID-19, and an assumption should be made that they are COVID-positive with appropriate precautions in place. RAT can aid prompt risk assessment and avoid unnecessary use of staff and PPE resources.

4.2 PCR re-testing after a COVID-19 infection, prior to elective surgery

4.2.1 It is recommended not to re-test for patients recovered from COVID-19 within

90 days of symptom onset or a positive PCR or RAT, since persistent or recurrent positive PCR or RAT tests are common after recovery. This is presumably due to shedding of viral fragments.

4.2.2 If a patient has recurrence of symptoms within 90 days of diagnosis, re-testing in consultation with an infectious disease expert should be considered. Once the 90-day recovery period has ended, it is reasonable for the patient to undergo a preoperative PCR test ideally within 72 hours prior to their procedure.

4.3 Determining when patients are no longer infectious

4.3.1 In the absence of re-testing, a time-and symptom-based strategy is needed to determine when patients with COVID-19 are no longer infectious.

4.3.2 Patients with mild/asymptomatic COVID-19 infection and fully vaccinated patients with a break-through infection are no longer considered infectious at least 10 days from onset of symptoms and/or first PCR positive test and at least 24 hours since resolution of fever without the use of antipyretic medications and improvement in respiratory symptoms.

4.3.3 For severely ill hospitalized patients, especially if immunocompromised, one can assume that they are no longer infectious after 20 days from onset of symptoms and/or first PCR positive test and at least 24 hours since resolution of fever without the use of antipyretic medications and improvement in respiratory symptoms.

4.4 Assessment and optimization after COVID-19 infection, prior to elective surgery

4.4.1 Patients should have a formal clinical review prior to surgery, especially if they have not returned to their pre-COVID baseline function. This must address the state of the cardiorespiratory system, as well as other potentially affected systems, e.g. renal, hepatic, haematological, immunological, musculoskeletal, neurological (memory, sleep) and psychological (fatigue, post-traumatic stress disorder). This is especially important in those who have any persisting symptoms (including fatigue or dyspnoea) and those who were hospitalized for COVID-19 care. Where available, the perioperative care team is ideally placed to coordinate the assessment and optimization of these patients.

4.4.2 There is likely no value in repeating chest x-ray (CXR) or computed tomography (CT) of the chest unless more than 3 months has passed after the

initial infection, and there is suspicion of Long COVID and/or there are abnormal signs on clinical examination.

4.4.3 There is an increased risk of DVT/PE after COVID-19 infection. It is encouraged to ensure the implementation of the most appropriate pharmacological perioperative thromboprophylaxis plan balancing bleeding and thrombosis risk. In addition to pharmacological thromboprophylaxis, it is important to consider perioperative mechanical preventative measures such as calf compressors and stockings.

5. Recommendations on surgical patients and COVID-19 vaccines

5.1 Timing of elective surgery in relation to COVID-19 vaccination

5.1.1 Full vaccination prior to surgery should be encouraged if time permits. Partial vaccination may still be of benefit if time is constrained. Recommendations on the timing for COVID-19 vaccination **before** surgery are variable due to the unknown vaccine immunogenicity and are further dependent on what the goal is.

5.1.2 If the goal is to avoid confusion between symptoms of vaccine-related side effects and symptoms of surgical complications, general advice is to have a minimum of 1 week between vaccination and surgery.

5.1.3 If the goal is to ensure optimal immunological response and better (at least likely adequate) protection from COVID-19 infection, a minimum of 2 weeks is recommended. Optimal immunological response prior to surgery is especially important before transplant surgery, where the decision should be in consultation with a specialist immunologist and the transplant team as the timing may need to be significantly longer (up to 4-6 weeks before surgery).

5.1.4 It is recommended to wait **two weeks following major surgery** for COVID-19 vaccination, since post vaccination symptoms may confuse the clinical picture in the immediate postoperative period. However, following minor or intermediate surgery, it is reasonable to consider earlier vaccination for post-operative surgical patients (even in-hospital) who have not been COVID-19 vaccinated to make the most of that opportunity, especially if patients are at risk of being lost to follow up for vaccination later on.

5.2 Myocarditis and/or pericarditis post-mRNA COVID-19 vaccination.

5.2.1 Myocarditis and pericarditis are rare adverse events post COVID-19 messenger ribonucleic acid (mRNA) vaccination (Pfizer-BioNTech/Comirnaty)

with an onset usually within 7 days of vaccination. It is more common after the second dose and especially in males, with the highest incidence among adolescents, young adults and infants. Symptoms of post mRNA COVID-19 vaccine myocarditis or pericarditis include chest pain, dyspnoea or palpitations. There may be an elevated troponin level and/or abnormal findings on electrocardiogram (ECG), echocardiography or cardiac magnetic resonance imaging (MRI). The most accurate diagnosis is via pathology and/or MRI criteria. Not every patient with a raised troponin post COVID-19 mRNA vaccination has myocarditis, as troponin may be released just from other causes such as intense exercise. In patients with a history of vaccine associated myocarditis/pericarditis, it is important to ascertain whether there are any long-term sequelae. It is advised to manage these patients perioperatively in close collaboration with a specialist cardiologist. They may require additional preoperative investigations such as transthoracic echocardiogram (TTE) or cardiopulmonary exercise testing (CPET), and a higher level of monitoring perioperatively.

6. References

- COVIDSurg Collaborative. Timing of surgery following SARS-CoV-2 infection: an international prospective cohort study. Anaesth 2021; 76: 748-58.
- Australian and New Zealand College of Anaesthetists (ANZCA). Living guidance: Surgical patient safety in relation to COVID-19 infection and vaccination. ANZCA PG68(A). 7 Feb 2022.
- El-Boghdadly K, et al. Timing of elective surgery and risk assessment after SARS-CoV-2 infection: an update. Anaesth 2022, doi: 10.1111/anae.15699.
- American Society of Anesthesiologists and Anesthesia Patient Safety Foundation joint statement on elective surgery/procedures and anesthesia for patients after COVID-19 infection. 22 Feb 2022.