

Original Article

Timing of surgery following SARS-CoV-2 infection: an international prospective cohort study

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Summary

Peri-operative SARS-CoV-2 infection increases postoperative mortality. The aim of this study was to determine the optimal duration of planned delay before surgery in patients who have had SARS-CoV-2 infection. This international, multicentre, prospective cohort study included patients undergoing elective or emergency surgery during October 2020. Surgical patients with pre-operative SARS-CoV-2 infection were compared with those without previous SARS-CoV-2 infection. The primary outcome measure was 30-day postoperative mortality. Logistic regression models were used to calculate adjusted 30-day mortality rates stratified by time from diagnosis of SARS-CoV-2 infection to surgery. Among 140,231 patients (116 countries), 3127 patients (2.2%) had a pre-operative SARS-CoV-2 diagnosis. Adjusted 30-day mortality in patients without SARS-CoV-2 infection was 1.5% (95%CI 1.4–1.5). In patients with a pre-operative SARS-CoV-2 diagnosis, mortality was increased in patients having surgery within 0–2 weeks, 3–4 weeks and 5–6 weeks of the diagnosis (odds ratio (95%CI) 4.1 (3.3–4.8), 3.9 (2.6–5.1) and 3.6 (2.0–5.2), respectively). Surgery performed ≥ 7 weeks after SARS-CoV-2 diagnosis was associated with a similar mortality risk to baseline (odds ratio (95%CI) 1.5 (0.9–2.1)). After a ≥ 7 week delay in undertaking surgery following SARS-CoV-2 infection, patients with ongoing symptoms had a higher mortality than patients whose symptoms had resolved or who had been asymptomatic (6.0% (95%CI 3.2–8.7) vs. 2.4% (95%CI 1.4–3.4) vs. 1.3% (95%CI 0.6–2.0), respectively). Where possible, surgery should be delayed for at least 7 weeks following SARS-CoV-2 infection. Patients with ongoing symptoms ≥ 7 weeks from diagnosis may benefit from further delay.

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Introduction

Patients with peri-operative SARS-CoV-2 infection are at increased risk of death and pulmonary complications following surgery [1–3]. As the cumulative number of people who have had SARS-CoV-2 infection rises, it will be increasingly common for patients needing surgery to have previously had SARS-CoV-2 infection. High-income countries that are already implementing vaccination programmes are likely to experience reductions in new

SARS-CoV-2 case infection rates, but these countries already have tens of millions of SARS-CoV-2 infection survivors. Most low- and middle-income countries (LMICs) are likely to have limited access to SARS-CoV-2 vaccines until at least 2023 [4, 5]. Thus, pre-operative SARS-CoV-2 infection will remain a challenge for the foreseeable future.

Pre-pandemic studies suggest delaying surgery in patients who have experienced respiratory infection in the 4 weeks preceding surgery [6–8]. However, there is only