

Abstract

We aimed to determine the impact of pre-operative isolation on postoperative pulmonary complications after elective surgery during the global SARS-CoV-2 pandemic. We performed an international prospective cohort study including patients undergoing elective surgery in October 2020. Isolation was defined as the period before surgery during which patients did not leave their house or receive visitors from outside their household. The primary outcome was postoperative pulmonary complications, adjusted in multivariable models for measured confounders. Pre-defined sub-group analyses were performed for the primary outcome. A total of 96,454 patients from 114 countries were included and overall, 26,948 (27.9%) patients isolated before surgery. Postoperative pulmonary complications were recorded in 1947 (2.0%) patients of which 227 (11.7%) were associated with SARS-CoV-2 infection. Patients who isolated pre-operatively were older, had more respiratory comorbidities and were more commonly from areas of high SARS-CoV-2 incidence and high-income countries. Although the overall rates of postoperative pulmonary complications were similar in those that isolated and those that did not (2.1% vs 2.0%, respectively), isolation was associated with higher rates of postoperative pulmonary complications after adjustment (adjusted OR 1.20, 95%CI 1.05-1.36, $p = 0.005$). Sensitivity analyses revealed no further differences when patients were categorised by: pre-operative testing; use of COVID-19-free pathways; or community SARS-CoV-2 prevalence. The rate of postoperative pulmonary complications increased with periods of isolation longer than 3 days, with an OR (95%CI) at 4-7 days or ≥ 8 days of 1.25 (1.04-1.48), $p = 0.015$ and 1.31 (1.11-1.55), $p = 0.001$, respectively. Isolation before elective surgery might be associated with a small but clinically important increased risk of postoperative pulmonary complications. Longer periods of isolation showed no reduction in the risk of postoperative pulmonary complications. These findings have significant implications for global provision of elective surgical care.