Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Risk stratification of individuals undergoing surgery after COVID 19 recovery. Response to *Br J Anaesth* 2022; 128: e37–9

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Keywords: COVID-19; functional capacity; long COVID; preoperative assessment; restrictive lung disease

Editor—We read with interest the correspondence from Silvapulle and colleagues,[1] and we agree with their recommendations for further research into patients who have recovered from COVID-19.

As a centre with one of the few peripheral nerve injury units in the UK, we have seen a number of patients presenting for surgery who have nerve injuries as a result of their intensive care stay from COVID-19 infection. Owing to the lack of guidelines, we insisted that all of these patients be reviewed by an anaesthetist preoperatively, with appropriate investigations to look for evidence of ongoing cardiac, respiratory, or other organ dysfunction that might complicate their perioperative course. In doing so, we followed the recommendations from the British Thoracic Society[2] on respiratory follow-up and emerging evidence of the potential complications from long COVID.[3] We therefore additionally checked ferritin, NT-proBNP level, D-dimer, and troponins, in addition to ensuring recent chest imaging and spirometry.

Out of the 23 patients with a history of COVID-19 who have so far been referred to our peripheral nerve injury unit, 10 have been listed for surgery and were assessed by an anaesthetist. Of these, 90% were intubated and were proned during their stay in the ICU for their initial COVID-19 infection. The average ICU length of stay was 57 days (range, 10–90 days), 66% had a tracheostomy, 55% had a thromboembolic complication, 88% required renal replacement therapy, 11% required extracorporeal membrane oxygenation (ECMO), 44% had cardiac complications, and 22% suffered a significant neurological complication during their ICU course. In contrast, on their preoperative assessment before surgery, only 22% had biochemical evidence of ongoing cardiac issues with increased NT-proBNP or troponin levels. None of these patients had cardiac complications during their initial ICU stay for COVID-19 and so had not had any cardiac follow-up.

Spirometry revealed a restrictive picture in 44%, but only 22% had radiological evidence of significant residual fibrosis on CT chest imaging. The number of patients in our cohort demonstrating a restrictive deficit on spirometry is higher than that quoted in previous studies of respiratory follow-up

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after COVID-19. Torres-Castro and colleagues[4] found 15% of patients had a restrictive deficit, but this included any patient with confirmed infection. Faverio and colleagues[5] found that 20% of patients who were intubated for COVID-19 had a restrictive deficit. Our cohort is currently small and also includes patients who underwent prolonged periods of proning in ICU. Therefore, the higher number with restrictive deficit in our cohort may reflect the severity of their initial lung injury combined with improvements in treatment over the course of the pandemic leading to increased survival in those with severe lung injury. We found that 55% of patients remained significantly short of breath on minimal exertion and had very limited functional capacity, the majority of these having no radiological evidence of ongoing fibrosis. In addition, many were still suffering with fatigue (33%) or hallucinations (22%).

It is therefore apparent to us that the functional capacity of individuals who have been admitted to ICU with COVID-19 is not completely reflected in the biochemical markers or examination findings, which would usually reveal the presence of significant cardiorespiratory disease during preoperative assessment. This may be unique to those patients who underwent tracheal intubation, and there may be some crossover with critical illness neuropathy that deserves due consideration before surgery. We support further investigation into the risk stratification of these individuals who present for surgery and recommend that in the meantime, all patients who have been admitted with significant COVID-19 infection be preassessed in a high-risk anaesthetic clinic.

Declarations of interest

The authors declare no conflicts of interest.

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Appropriate fluid management in emergency abdominal surgery. Comment on *Br J Anaesth* 2021; 127: 521–31

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Keywords: central venous pressure; emergency abdominal surgery; gastrointestinal surgery; goal-directed fluid therapy; intravenous fluids

Editor—Fluid therapy is a cornerstone in perioperative medicine. Despite the extensive research for different fluid infusion protocols in elective major abdominal surgery, emergency abdominal surgery was not adequately explored. In a recent RCT by Aaen and colleagues,[1] goal-directed fluid therapy in emergency laparotomy did not show different patient outcomes compared with a standard-of-care fluid strategy. The study explored an important subject and had the advantage of a randomised controlled multicentre design with long-term follow-up. We commend the authors and have some comments on the design and outcomes of the study.

In the standard-of-care arm, the authors used a fluid strategy that targeted predefined central venous pressure and central venous oxygen saturation values; this strategy seems close to the goal-directed fluid strategy in septic shock, which was introduced by Rivers and colleagues[2] in 2001 and was challenged subsequently by major trials until it was nearly removed from the Surviving Sepsis Campaign guidelines since

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