

## The role of cholecystostomy drains in the management of acute cholecystitis during the SARS-CoV-2 pandemic. What can we expect?

### Editor

We read with interest the COVIDSurg Collaborative article, 'Global Guidance for surgical care during the COVID-19 pandemic'<sup>1</sup> and eagerly await the collaboratives initial report. It is clear, the SARS-CoV-2 pandemic has had a significant impact on emergency and elective surgical services. Concerns about surgical outcomes in COVID-19 positive patients and intra-operative transmission to healthcare workers meant that initial guidance from multiple surgical bodies recommended non-operative management options where possible. Specifically, for the management of acute biliary disease, the Intercollegiate General Surgery Guidance on COVID-19<sup>2</sup> recommended either non-surgical management or the utilisation of a cholecystostomy tube. This represents a major deviation from prior best practice where definitive treatment with early laparoscopic cholecystectomy was recommended within one week of index admission<sup>3,4</sup> and the use of cholecystostomy drains reserved only for patients considered too high risk for surgery<sup>5</sup>.

The White Rose Surgical Collaborative (WRSC) (UK) is undertaking a multicentre, retrospective cohort study to examine commonly utilised management strategies for acute cholecystitis in the UK. One of the primary objectives is to examine the use of cholecystostomy drains, their associated management and morbidity. Data collection is ongoing, but interim analysis of results may provide guidance on what we might expect with the increased use of this strategy throughout the pandemic.

To date, 864 patients with a coded diagnosis of acute cholecystitis during the study period were submitted from five hospital trusts in the United

Kingdom. Of these 63 (7.2%) had a cholecystostomy drain placed. This typically represented those with more comorbidities (Charlson comorbidity index median score 2 vs 4 for no drain and drained respectively,  $p < 0.001$ ), and those with a greater inflammatory response at admission (mean admission CRP 87.5 vs 169 mg/L,  $p < 0.01$ ). Of those receiving a cholecystostomy, 22 (35.2%) patients experienced a complication. Of these 3 (4.7%) were immediate (e.g. bleeding) and 19 were late; Complications were reported as wrong site placement in 2 (10.5%) patients, displacement of drain in 12 (63.2%) patients and chronic fistula formation was seen in 1 (5.3%) individual. Other non-specific complications were seen in 4 (21.1%) patients undergoing intervention. Following insertion of a cholecystostomy drain, 21 (41.4%) patients underwent a check tubogram before discharge. Interestingly, 42.9% of those patients post cholecystostomy drain required readmission to hospital, re-presenting acutely for admission mean of 0.55 times (Range 1 to 4 times each). With the anticipated move towards radiological drainage for a wider population group resulting from COVID-19 protocols, the burden of complications and readmissions can be expected to increase<sup>6</sup>.

As the peri-operative risks of Covid-19 become clearer we must remember that whatever strategy we adopt now will have ramifications for patients. Avoiding repeated admissions to hospital through the provision of definitive treatment pathways should be a consideration in planning services. Where laparoscopic surgery in the acute setting can be safely delivered for patients with acute cholecystitis this should be considered given the morbidity associated with non-operative strategies. Avoiding unintended consequences and balancing the associated risks of any proposed strategy remain difficult goals to achieve. We are working to expedite the completion and analysis of the dataset to further contribute to the discussion.

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- 1 COVIDSurg Collaborative. Global Guidance for surgical care during the COVID-19 pandemic. *Br J Surg* 2020; **107**: 1097–1103.
- 2 The Royal College of Surgeons of England. Intercollegiate General Surgery Guidance on COVID-19. <https://www.rcseng.ac.uk/coronavirus/joint-guidance-for-surgeons-v2/>
- 3 National Institute for Health and Care Excellence. Gallstone disease, diagnosis and management. <https://www.nice.org.uk/guidance/cg188>
- 4 Okamoto K, Suzuki K, Takada T, Strasberg SM, Asbun HJ, Endo I *et al.* Tokyo Guidelines 2018: flowchart for the management of acute cholecystitis. *J Hepatobiliary Pancreat Sci* 2018; **25**: 55–72.
- 5 Turiño SY, Shabanzadeh DM, Eichen NM, Jørgensen SL, Sørensen LT, Jørgensen LN. Percutaneous Cholecystostomy Versus Conservative Treatment for Acute Cholecystitis: a Cohort Study. *J Gastrointest Surg* 2018; **23**: 297–303.
- 6 Lu P, Chan CC, Yang NP, Chang NT, Lin KB, Lai KR *et al.* Outcome comparison between percutaneous cholecystostomy and cholecystectomy: a 10-year population based analysis. *BMC Surgery* 2017; **17**: 130.