Cholecystectomy following EUS-guided gallbladder drainage in patients with acute cholecystitis at high surgical risk: friend or foe?

We read with great interest the paper by Bang *et al*,[1] reporting their single-centre retrospective experience in 25 patients with acute cholecystitis, who were deemed at increased surgical risk and treated by EUS-guided gallbladder drainage (EUS-GBD) using LAMS. Three patients underwent surgery because of persistent biliary-type symptoms, but the presence of LAMS precluded successful laparoscopic cholecystectomy (LC) and open or subtotal cholecystectomy was required. Diverging from the recent guidelines of the European Society of Gastrointestinal Endoscopy and the American Gastroenterological Association,[2 3] the authors concluded that EUS-GBD should only be considered in patients for whom surgery would never be an option. We thank Bang *et al*, for sharing their experience with these unfortunate surgical outcomes, which encourages further discussion on how to use this technique. However, some of the points raised in their study deserve further considerations.

First, a clear-cut definition on how patients should be defined as high surgical risk versus a 'never surgery' candidates is completely lacking. This is a critical issue that has not been adequately addressed even in the literature and needs further clarification. This semantic difference seems mostly dependent on the different probability to survive up to a reasonable recovery after surgical intervention, implying that all patients can potentially undergo surgery with different preprocedural mortality's risk.[4 5]

Second, in contrast with Bang *et al*,[1] larger series demonstrated no significant difference in conversion rate from laparoscopic to open cholecystectomy following EUS-GBD compared with percutaneous drainage (PT-GBD).[6] Of note, in a comparative multicentre study, surgery following EUS-GBD was associated with a significant decrease in operative time, time to symptom resolution and length of stay compared with PT-GBD.[7] In line with this study, high technical success rates have been reported in a large cohort of patients who underwent EUS-GBD with LAMS and second-stage LC, provided LAMS removal before surgery.[8] These pilot findings suggest that surgery can still be offered safely to patients judged at high surgical risk, who eventually need surgery.

Third, another important point neglected in the study by Bang *et al*[1] is the potential harm associated with PT-GBD, which can be associated with adverse events (AEs) in up to 40% of cases, thus denying patients a safer and more effective approach. Indeed, according to the pivotal randomised trial by Teoh *et al*,[9] the number needed to harm for generating 1-year AEs is close to two when preferring PT-GBD over EUS-GBD.

At last, persistence of biliary type was observed in 47.1% of the survivors. These long-term issues might simply reflect the protocol used in the study, where LAMS was kept in situ indefinitely. Conversely, in a prospective multicentre observational study conducted in Spain where LAMS was left in situ for at least 1 year in 45 patients (55% of the entire cohort), recurrent biliary events were observed in only 6.1% of patients, with no cases of biliary-type pain-related AEs.[10] Biliary events were more frequently associated with pancreaticobiliary malignancies (PBM) and were all successfully treated endoscopically. It would be helpful to know if the association with PBM was also found in the study by Bang *et al*[1] and why no endoscopic salvage was attempted. Nevertheless, we believe that unless patients are too frail to undergo a second procedure, LAMS removal should be preferred.

In conclusion, the study from Bang *et al*[1] underlines that the jury is still out whether surgery is safe and feasible following EUS-GBD. However, we believe that EUS-GBD can substantially improve patient care in selected cases with a standardised yet tailored LAMS management. More high-quality data are eagerly awaited to further guide our strategy, but at this moment, it is too early to abandon EUS-GBD in high surgical patients.

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