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Commentary Regarding "Outcomes of Immediate Multistaged Abdominal Wall Reconstruction of Infected Mesh: Predictors of Surgical Site Complications and Hernia Recurrence"

To the Editor:

We read with great interest the recently published article entitled "Outcomes of Immediate Multistaged Abdominal Wall Reconstruction of Infected Mesh: Predictors of Surgical Site Complications and Hernia Recurrence" by Alimi et al.[1] As the field of hernia repair and abdominal wall reconstruction continues to expand in scope and variety of techniques, we find that research devoted to decision making and outcomes in patients with complex abdominal wall histories is certainly needed.

Notably, we have recently published on a similar topic in our paper "'Delayed-Immediate' Hernia Repairs in Infected Wounds: Clinical and Economic Outcomes."[2] Furthermore, the concept of using purposefully staged hernia repair to reduce infection-related complications was presented by our authors at the 2021 Abdominal Wall Reconstruction Conference.[3] As such, we were interested to see that this topic is gaining ground in the literature and is of interest to others as a valid technique.

Discussion of complex abdominal wall patients hinges on how best to treat those with known risk factors for recurrence with the goal of reducing exorbitantly high complication rates associated with infected fields. There is a wealth of literature on risk factors for hernia recurrence, including elements of patient comorbidities and history of prior and/or active infection.[4–6] Furthermore, a recent meta-analysis reported 63 individual predictors of hernia recurrence stratified into preoperative predictors (patient and hernia subcategories), intraoperative predictors, and postoperative predictors.[7] These risk factors mirror those reported by Alimi et al[1] who demonstrate higher hernia recurrence in their multistaged cohort associated with increased body mass index, bridged-style repair, and presence of postoperative surgical site infection.

Not all infected surgical fields have the same etiology, and there are important distinctions to be made in this population when assessing the best way to treat each patient. Our pilot data suggest that a "delayed-immediate" technique can offer greater control of the abdominal environment through deescalation of Centers for Disease Control wound classification by the time of definitive abdominal wall repair while preserving reconstructive options and mitigating historically high complication rates.[2]

Multistaged repairs require a high level of critical thinking. To intentionally return to surgery, the benefits must overwhelmingly outweigh the risks, and surgeons must be willing to deviate from their plan and consider the overall impact on the abdominal wall. For example, if a staged repair will still ultimately require the use of bridging and/or biologic mesh, the 7-fold risk of hernia recurrence and 6-fold risk of complications require consideration.[8] Exercising caution to protect future definitive closure techniques is paramount. We advocate for delayed-immediate repairs where primary fascial closure is expected at the time of planned reoperation and preserving certain techniques, such as component separation and increased tissue dissection, in cases when a future operation is more likely to achieve definitive closure.

By anticipating which patients are at increased risk for complications as a result of their abdominal pathology, chronology, and comorbidities, a staged approach is able to serve a niche role in those for whom an unplanned return to the operating room and/or development of serious complications is more likely. Nevertheless, intentional delay of closure for nontrauma patients remains controversial and has historically been discouraged in settings where musculofascial closure can be safely completed in one stage.[9] As such, we are pleased that Alimi et al[1] have added to the literature with their data and larger cohort to further allow for longitudinal assessment of indications for staged hernia repairs.

Furthermore, all major surgical decisions must include consideration of the economic impact. Benefits to patients must be expected to offset the real financial costs associated with prolonged admissions, multiple surgeries, and temporizing measures. Although Alimi et al[1] did not perform an economic analysis in their article, we feel that this is a necessary part of the discussion. Based on cost data from our institution and the literature, the index surgery and associated hospitalization of the delayed-immediate approach were nearly twice as expensive compared with control patients.[2] This is attributed to multiple trips to the operating room and a prolonged length of stay. Although the savings seen in recurrence and surgical site occurrence prevention does not yet prove more cost-effective given the greater up-front expense of the index repair in the delayed-immediate group, separating these repair stages also provides an additional opportunity to surveil the abdomen, which can prevent catastrophic complications and improve patient quality of life long-term. This may eventually lead to reduced long-term costs for patients who suffer from infrequent, but grave, adverse events related to their surgery.

Surgical technique requires constant evolution to problem solve for increasingly complex patients. To amass the cohort needed to assess long-term effectiveness and refine indications for staged ventral hernia repairs, collaboration between institutions to standardize protocols and measure outcomes will be necessary to promote high-quality evidence that can guide future decision making. We look forward to comparing techniques and working alongside others who have found this worthy of investigation.

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