Authors’ reply to letter to the editor by Robert Martindale

To the editorial board of Journal of Trauma,

We acknowledge the criticism raised by this author. The patients included in the current study all underwent open emergency abdominal surgery. Such patients are not treated with a minimal invasive approach, and the abdominal wall is entered through a midline laparotomy. Thus, incision size as a confounding factor is unlikely. Wound issues are reported in Table 2 as surgical site infections. Duration of operation and previous abdominal surgery are reported in Table 1. Regarding the experience of the surgeons who performed the emergency abdominal procedures, we kindly refer to our last response to the letter to the editor by Dr. Gachabayov. Intra-abdominal mesh placement is routinely performed both in emergency and elective procedures at the Bern University Hospital. The implantation of intra-abdominal mesh has not been shown to be associated with specific complications in previous studies published by our department.

The results clearly reveal the potential hazards associated with biologic mesh implantation in the infected abdominal cavity. The letter of Dr. Martindale refers to retrospective studies with known selection biases, whereas our study was a prospective randomized-controlled clinical trial. It is of importance to note that the studied cohort consists of patients with acutely inflamed and infected abdomen, which is not present in elective or emergency hernia repair. The Strattice mesh (Allergan) seems not to fit the needs for such challenging situations. We acknowledge that the current study is indeed limited by its sample size to make conclusions about the primary endpoint. However, continuing such a study would not have been in line with good clinical practice guidelines because of ethical concerns in the light of the observed complications.

In our experience, synthetic mesh implantation in patients undergoing emergency abdominal surgery leads to an important foreign body reaction and scarring about 2 weeks after synthetic mesh implantation. Because of the reported properties of biologic meshes, potentially this reaction seems to be delayed. The situation as observed in the patient in Figure 2 has not been observed upon synthetic mesh placement at our department. The patient in Figure 3 had a nearly complete loss of the mesh, and intestinal contents were visible.

The adhesion formation per se was not the main issue in the situation shown in Figure 4 but rather the mesh infection.

As shown in Table 2 of the article, abdominal wall complications were frequent in both groups and not statistically different (p = 1.000). However, within the group of patients with abdominal wall complications (dennominator), serious complications requiring revisional surgery were significantly more frequent in the mesh group.

In our study, the implantation of expensive biologic Strattice meshes were associated with increased direct costs for the mesh and indirect costs because of complications. Taking into account the significant increase in serious abdominal wall complications already after inclusion of a limited number of patients, it is unlikely that a potential reduction of incisional hernias is of economic relevance.

DISCLOSURE
The authors declare no conflicts of interest. This study received financial support by Strattice, Allergan.

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REFERENCES
1. Jakob MO, Haltmeier T, Candinas D, Beldi G. Biologic mesh implantation is associated with serious abdominal wall complications in patients undergoing emergency abdominal surgery — a randomized-controlled clinical trial [published online July 8, 2020]. J Trauma Acute Care Surg. doi:10.1097/TA.0000000000002877.
2. Jakob MO, Schwarz C, Haltmeier T, Zindel J, Pinwasam T, Candinas D, Starlinger P, Beldi G. Mesh-augmented versus direct abdominal closure in patients undergoing open abdomen treatment. Hernia. 2018;22(5):785–792.
3. Jakob MO, Sari D, Zindel J, Pinwasam T, Candinas D, Beldi G. Prophylactic, synthetic intraperitoneal mesh versus no mesh implantation in patients with fascial dehiscence. J Gastrointest Surg. 2018;22:2158–2166.
4. Kohler A, Lavanchy JL, Lenoir U, Kurrmann A, Candinas D, Beldi G. Effectiveness of prophylactic intraperitoneal mesh implantation for prevention of incisional hernia in patients undergoing open abdominal surgery: a randomized clinical trial. JAMA Surg. 2019;154(2):109–115.
5. Scholtes M, Kurrmann A, Seiler CA, Candinas D, Beldi G. Intraprothetical mesh implantation for fascial dehiscence and open abdomen. World J Surg. 2012;36(7):1557–1561.
6. Kurrmann A, Barnetta C, Candinas D, Beldi G. Implantation of prophylactic nonabsorbable intraperitoneal mesh in patients with peritonitis is safe and feasible. World J Surg. 2013;37(7):1656–1660.

In response to: Military trauma readiness and case volume

To the Editor:

We read with great interest the study by Hall and colleagues entitled “Current Challenges in Military Trauma Readiness: Insufficient Relevant Surgical Case Volumes in Military Treatment Facilities” comparing what the authors described as combat-relevant surgical case volume between several #military treatment facilities (MTFs). In this study the authors found that the five busiest trauma surgeons and two vascular surgeons at the military’s only Level I trauma center (San Antonio Military Medical Center) outperformed their general surgery/vascular surgery counterparts in trauma case volume at four non-trauma-based MTFs. Not surprisingly, when using the metric the authors created, they found that the trauma fellowship trained surgeons did more surgery on traumatically injured patients than the nonfellowship–trained surgeons. Based on these data, the authors concluded that MTFs without a focus on trauma (i.e., Level I trauma centers) cannot provide meaningful readiness for military surgeons. We respectfully disagree with the authors’ methodology and conclusions regarding combat-relevant case volume and complexity.

First, the methodology used sets up a false dilemma: one either performs operative trauma and is ready to care for combat casualties or does not routinely perform operative trauma and is not ready. If this were true, most civilian trauma surgeons would not be considered prepared to provide complex operative trauma care. There is strong literature to support the volume-outcome proposition across multiple surgical specialties but these improved outcomes can only be attributed in part to the surgeon among the contribution provided by a well-practiced and resource system of care. Similarly, a recent meta-analysis concluded a “moderate association” between high-volume trauma centers (>240 cases of Injury Severity Score ≥ 15 per year). However, the details of the analysis make it impossible to ascertain whether this is because of the presence of optimal resources, the benefit of repetition and team resuscitation, a dedicated trauma ICU, or the individual surgeon’s operative expertise. To add to the confusion, many...