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Response to the Comment on “Robotic Surgery for Rectal Cancer Provides Advantageous Outcomes Over Laparoscopic Approach”

Reply:

We would like to thank our colleagues Zhang et al for their interest in our manuscript on short term outcomes after robotic and laparoscopic rectal cancer surgery.¹

Our study did not consider a potential learning effect due to the inclusion of consecutive, unselected procedures. However, we believe this may not be a pertinent factor for several reasons. First, all participating surgeons at our institution disposed of a longstanding experience in laparoscopic surgery and underwent intensive and structured training before implementing and systematically applying the robotic modality. Second, due to the long institutional tradition of minimally invasive surgery incorporating a dedicated, structured teaching environment, the learning curve may be significantly shorter than the suggested numbers, similar to reports from independent institutions.² Furthermore, results from the ROLARR trial,³ which has been criticized for the large variety of robotic expertise among

participating surgeons, were questioned by an analysis based on the learning effect adjustment,⁴ reviewing the trial results in favor of robotic surgery. We believe that reporting on a real-life situation of a quaternary care center rather than on highly selected patients better reflects challenges and outcomes related to the adoption of robotic technology.

Robotics as cutting-edge technology has seen its introduction after establishing laparoscopic surgery as a standard, and therefore the more recent study period inevitably accounts for the majority of robotic cases. This finding also holds for Enhanced recovery pathway (ERP), which has been introduced after the launch of our minimally invasive program. To minimize the confounding effect of perioperative care, we adjusted our analysis for ERP, which arguably had a beneficial effect on postoperative outcomes in our institution.⁵ Robotic surgery retained significance in both of our multivariate models and hence accounts for an independent beneficial effect on postoperative outcomes beyond the perioperative care protocol.

Data on postoperative anemia were reported along with the postoperative need for transfusion. Because postoperative anemia is an outcome that may or may not be related to preoperative (baseline) values, the need for blood transfusion was also assessed since related to both postoperative value and trend compared to baseline. Both groups differed indeed further regarding several baseline characteristics, namely American Society of anesthesia classification (ASA) score, type of surgery, and tumor stage; however, representing, if any, negative selection bias of the robotic group. Propensity score matching was suggested as a reliable method to account for these differences. Our group preferred multivariate logistic regression retaining all suggested items as confounders because that approach allowed us to assess each variable's independent impact, including the robotic approach. A well-chosen regression model has advantages over matching, which results in smaller sample size and harbors potential pitfalls in the matching process.⁶

Patient stratification for tumor stage was not performed, but given the higher rate of Stage I cancers in the laparoscopic group, we can safely assume that a sub-analysis would only strengthen the study results. It would be fascinating to study an association between robotic surgery and time to adjuvant chemotherapy and even compliance with treatment. However, we consider this a different study focusing on mid- and long-term outcomes.

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Jacopo Crippa, MD

Fabian Grass, MD

David W. Larson, MD, MBA

Division of Colon and Rectal Surgery,
Mayo Clinic

Rochester, MN 55905

✉Larson.David2@mayo.edu

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Comment on “The Effect of Postoperative Complications After Minimally Invasive Esophagectomy on Long-term Survival: An International Multicenter Cohort Study”

To the Editor:

There are emerging data highlighting the impact of anastomotic leakage (AL) on