Letter to the Editor

Pancreatic morbidity following laparoscopic radical gastrectomy

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Response to: Akateh C, Cloyd JM. Minimally invasive gastrectomy and the risk of pancreas-related morbidity. Laparosc Surg 2018;2:25; Wong J. Pancreas-related complications following gastrectomy. Laparosc Surg 2018;2:28.

Received: 01 August 2018; Accepted: 13 August 2018; Published: 14 August 2018.
doi: 10.21037/ls.2018.08.04
View this article at: http://dx.doi.org/10.21037/ls.2018.08.04

We read with great interest the editorials written by Akateh *et al.*, and by Dr. Wong on our piece (1). We thank the authors for their comments and you for the opportunity to share some further considerations on this argument.

Although pancreatic complications, such as postoperative pancreatic fistula (POPF) and acute pancreatitis (AP) are considered as rare occurrences in the postoperative course of radical gastrectomy, the attention toward such events has increased significantly along the recent years (2-4). Actually, the incidence of such complications is quite low in most recent studies concerning radical gastrectomy via conventional or minimally invasive surgery, without statistically significant difference between the two methods (1,5-7). However, major randomized evidences on this topic mostly aggregate the data of patients with initial gastric cancer undergoing distal gastrectomy (1). On the contrary, in the case of advanced malignancy and when all types of gastrectomies are taken into account the burden of pancreatic complications may be greater.

As already mentioned by Dr. Wong, one of the most substantive and recent evidences upon the matter comes from the data published by Hiki *et al.* (8). In this study the authors reported on the data gathered prospectively from the Japanese Clinical Database. Over a 1-year time frame, the clinical data of 5,288 patients who received laparoscopic distal gastrectomy were registered prospectively. By applying the propensity score matching method, the authors were able to ultimately compare 1,067 of these patients to a homogeneous group of 1,067 patients who received surgery via conventional celiotomy. Overall, no differences were noticed between the two groups on mortality and general morbidity, with the exception of the incidence of wound dehiscence and infection, which was significantly higher following conventional surgery. The authors concluded confirming the safety and the well-known advantages of minimally invasive distal gastrectomy, while raised some concerns with regard to pancreatic morbidity. Indeed, in particular, the rate of clinically relevant POPF was significantly higher following laparoscopic surgery (2.2% *vs.* 1%, P=0.04). Interestingly, if one notes the relative incidence of postoperative complications following laparoscopic distal gastrectomy, the incidence of clinically relevant POPF (grade B of C fistulas) is as high as 2.2%, third in terms of frequency after anastomotic leakage (3.2%) and abdominal abscess (3.1%).

At this regard, our group recently reported on a systematic appraisal of the available inherent literature on minimally invasive radical gastrectomy, including both distal and total gastrectomy (9). We meta-analyzed the data of more than 2,000 patients from eight studies to investigate possible difference between conventional laparoscopic and robotic gastrectomy on pancreas-related postoperative morbidity. Globally, there was not statistical difference between the two techniques on overall pancreatic morbidity, POPF and postoperative pancreatitis. Interestingly, the overall rate of POPF was 3.5%, with significantly higher incidences (up to greater than 20%) when systematically investigated during the postoperative course. It is evident the propensity toward higher rates of pancreas-related morbidity in each focused evaluation of such events following surgery. This seems to be true for both open and minimally invasive gastrectomy, though it probably

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indicates variability of diagnostic accuracy, rather than of patient characteristics or surgical treatments (9).

Nevertheless, it is clear that the incidence of pancreatic morbidity following radical gastrectomy-and particularly that of POPF, has gained attention during the recent years also due to the substantive diffusion of minimally invasive surgery and its application for advanced disease. This is supported by the fact that POPF has been investigated as a primary endpoint (like anastomotic failure) in a recent phase II randomized trial evaluating laparoscopic distal gastrectomy for malignancy (3,4,10).

As a matter of fact, POPF is currently regarded as a major event during the postoperative course of radical gastrectomy as it not only results in increased postoperative hospitalization, but may also lead to the need for reoperation and even add to the general mortality (1,8,10). The actual frequency of POPF is difficult to quantify, as it is not routinely investigated in most studies. Nevertheless, to date the rate of its incidence following laparoscopic gastrectomy is similar of that of anastomotic leakage, which is generally lower than 2% in major contemporary case series involving both minimally invasive and conventional open radical gastrectomies (6,7).

To conclude, there is an increasing evidence raising concerns about the risk of postoperative morbidity related to the pancreas for patient receiving minimally invasive gastrectomy (3,4,8). This is probably in connection with the diffusion in clinical practice of minimally invasive surgery and the fact that the indication of minimally invasive gastrectomy is being extended to patients with advanced gastric cancer. Accordingly, we agree with Akateh *et al.*, and Dr. Wong about the need of further, specifically focused investigations on the actual role of pancreatic morbidity-and POPF in particular-in affecting the clinical outcomes of minimally invasive radical gastrectomy.

Acknowledgments

Funding: None.

Footnote

Provenance and Peer Review: This article was commissioned by the editorial office, *Laparoscopic Surgery*. The article did not undergo external peer review.

Conflicts of Interest: Both authors have completed the ICMJE uniform disclosure form (available at http://dx.doi.org/10.21037/ ls.2018.08.04). The authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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doi: 10.21037/ls.2018.08.04
Cite this article as: Guerra F, Giuliani G. Pancreatic morbidity following laparoscopic radical gastrectomy. Laparosc Surg 2018;2:36.

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