

## Peer Review File

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### Reviewer A

Ong et al. has made a comprehensive review regarding Surgical Considerations for the “Perfect” Colorectal Anastomosis. The manuscript is well-written and every consideration of anastomotic leakage after colorectal surgery has been addressed and I have no major criticisms. However, I would like to suggest the citation of the many related articles from the Asian fellow researchers:

1. Asian Journal of Surgery. Volume 45, Issue 11, November 2022, Pages 2197-2202
2. Asian Journal of Surgery. Definition and grading of anastomotic stricture/stenosis following low anastomosis after total mesorectal excision: A single-center study. Available online 24 March 2023
3. Asian Journal of Surgery. Volume 46, Issue 1, January 2023, Pages 111-119
4. Asian Journal of Surgery. Volume 45, Issue 1, January 2022, Pages 39-50
5. Asian Journal of Surgery. Volume 45, Issue 10, October 2022, Pages 1832-1842
6. Asian Journal of Surgery. The effect of staple height and rectal wall thickness on anastomotic leak development after laparoscopic low anterior resection. Available online 8 October 2022
7. Asian Journal of Surgery. Volume 45, Issue 6, June 2022, Pages 1246-1252

Reply: We thank the reviewer for his/her kind comments. We have added the relevant papers in our references list

Change in text: Reference number: 2, 19 and 20

### Reviewer B

Dr. Ong et al, have authored a review on the "perfect" anastomosis. The topic is of great interest and there is lack of similar articles in the literature. The authors should address the following issues:

-Introduction: The authors make several statements without providing appropriate references. Please add references of studies supporting the facts presented/

-Discussion: before addressing the LCA vs IMA issue the authors should present some background on high vessel ligation and why it is important for oncology and the viability of the anastomosis. then proceed with the controversial issue IMA +/- LCA

- 4th paragraph provides the authors experience but does not address the actual issue of IMA +/- LCA. Splenic flexure mobilization and ICG are maneuvers to decrease tension and identify perfusion, but do not address the issue presented by the authors (IMA alone or distal to LCA?). the authors should make statement on their standard approach.

- the authors propose routine SFM for all cases. they should present opposing data from Level I evidence: BMC Surg . 2022 May 10;22(1):164. doi: 10.1186/s12893-022-01614-y.

- authors propose ICG use for reducing anastomotic leaks. there are at least 2 randomized trials showing benefit in reducing anastomotic leaks. the opposing data should be presented. Furthermore, the authors should reinforce clinical examination of the the two sides of the

anastomosis for pulsatile visible or palpable blood flow.

- Authors state: " Where necessary, the staple line can be reinforced for better apposition of tissue and added tensile strength. ". there is minimal data to support use of these techniques and some of them have been proven inferior in randomized trial that had to stop (Fibrin glue).
- would add a paragraph on the role of the microbiome and the use of a preoperative preparation (mechanical and antibiotic prep) to reduce anastomotic issues.

Comment 1: Introduction: The authors make several statements without providing appropriate references. Please add references of studies supporting the facts presented

Reply 1: I have added appropriate references for the introduction.

Changes in the text: added reference number 1-6

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Comment 2: Discussion: before addressing the LCA vs IMA issue the authors should present some background on high vessel ligation and why it is important for oncology and the viability of the anastomosis. then proceed with the controversial issue IMA +/- LCA

Reply 2: We did present background on high vessel ligation prior to discussing on the controversial issues. This is presented in paragraph 2 discussion. We made this clearer by shifting the introduction to the start of the paragraph.

Changes in text: Edited line 133-137

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Comment 3: 4th paragraph provides the authors experience but does not address the actual issue of IMA +/- LCA. Splenic flexure mobilization and ICG are maneuvers to decrease tension and identify perfusion, but do not address the issue presented by the authors (IMA alone or distal to LCA?). the authors should make statement on their standard approach.

Reply 3: We have discussed high tie IMA ligation vs low tie IMA ligation without IMA lymphadenopathy vs low tie IMA ligation with IMA lymphadenopathy in Discussion from Para 1-3. Our standard approach is high tie IMA ligation (mentioned in Line 177-178). We also routinely practice splenic flexure mobilization and ICG. (Mentioned in Line 192-194)

Changes in text: Line 176 described our standard approach.

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Comment 4: The authors propose routine SFM for all cases. they should present opposing data from Level I evidence: BMC Surg . 2022 May 10;22(1):164. doi: 10.1186/s12893-022-01614-y.

Reply 4: The quoted article is a retrospective cohort study comparing preservation versus non preservation of left colic artery which show no difference in terms of 3 years disease free survival and overall survival but with lower anastomotic leak rate in the LCA preservation group. The authors mentioned they practice SFM if the colon is not free.

Change in text: We added the quoted paper into our reference number 20.

Comment 5: authors propose ICG use for reducing anastomotic leaks. there are at least 2

randomized trials showing benefit in reducing anastomotic leaks. the opposing data should be presented. Furthermore, the authors should reinforce clinical examination of the the two sides of the anastomosis for pulsatile visible or palpable blood flow.

Reply 5: I have added in opposing data for ICG.

Change in text: Added line 200-216

Comment 6: Authors state: " Where necessary, the staple line can be reinforced for better apposition of tissue and added tensile strength. ". there is minimal data to support use of these techniques and some of them have been proven inferior in randomized trial that had to stop (Fibrin glue).

Reply 6: We do not routinely practice this as mentioned in Line 238. What we meant was that the literature does propose stapler line reinforcement with various techniques and adjuncts. Most of the literatures that proposed such techniques as quoted in our paper are on animals or models rather than human studies. These techniques and adjuncts will need more validation before we can comment on its efficacy. We have edited this line to make it clearer.

Change in text: Added line 285-286

Comment 7: would add a paragraph on the role of the microbiome and the use of a preoperative preparation (mechanical and antibiotic prep) to reduce anastomotic issues.

Reply 7: Added the role of microbiome into the discussion.

Change in text: Added line 123-131

### **Reviewer C**

I read it with great interest and believe that substantial changes or additions should be made before it is accepted for publication. Specifically, I have the following comments:

1. The title „Surgical Considerations for the “Perfect” Colorectal Anastomosis” appears appropriate. However, it is rather a narrative than a literature review, even if literature is cited.
2. The abstract is much too general. The background for the review should be briefly and concisely stated, as well as the methods that led to the recommendations. The recommendations themselves should be listed in detail in order to then deduce the conclusions.
3. In the introduction, the authors jump in with the gun by describing the risk factors for anastomotic insufficiency without first stating that insufficiency is the anastomotic problem at all. The final question to be formulated should be derived in a goal-oriented way.

4. Surprisingly, the main part of the manuscript starts with a discussion before any results are mentioned at all. The results are inserted into the discussion, which is very unusual. In my opinion, the main part should be better structured to then come to a conclusion.

5. Last but not least, strengths and weaknesses of the work should be clearly identified.

Comment 1: The title „Surgical Considerations for the “Perfect” Colorectal Anastomosis” appears appropriate. However, it is rather a narrative than a literature review, even if literature is cited.

Reply 1: We aim to provide an overview on the current literature on various aspect on creating the “perfect anastomosis” and at the same time provide our authors’ experience and routine practice.

Change in text: None

Comment 2: The abstract is much too general. The background for the review should be briefly and concisely stated, as well as the methods that led to the recommendations. The recommendations themselves should be listed in detail in order to then deduce the conclusions.

Reply 2: This is a literature review on various debatable techniques that we question: which is the best? The authors did a background search on each technique and summarizes what the literature has shown. There’s no specific method that we have adopted to reach the recommendations. We discussed on each topic individually in our discussion in the following sequence:

- 1) High vs low IMA ligation
- 2) Splenic flexure mobilization
- 3) The use of ICG
- 4) Configuration of the anastomosis
- 5) Detailed steps on how we perform our side to end anastomosis
- 6) Choice of circular stapler
- 7) Anastomosis evaluation
- 8) Adjuncts to reinforce the anastomosis

Change in text: None

Comment 3: In the introduction, the authors jump in with the gun by describing the risk factors for anastomotic insufficiency without first stating that insufficiency is the anastomotic problem at all. The final question to be formulated should be derived in a goal-oriented way.

Reply 3: Edited the introduction.

Change in text: Added line 99-102

Comment 4: Surprisingly, the main part of the manuscript starts with a discussion before any results are mentioned at all. The results are inserted into the discussion, which is very unusual. In my opinion, the main part should be better structured to then come to a conclusion.

Reply 4: This is meant to be a review article on the techniques and construct of colorectal anastomosis.

Change in text: None

6. Comment 5: Last but not least, strengths and weaknesses of the work should be clearly identified.

Reply 5: Added in.

Change in text: Added line 295-297.

#### **Reviewer D**

It is an interesting paper that focuses on describing, by literature review, important characteristics of a "perfect" colorectal anastomosis, mainly left-sided procedures.

Overall, the paper shed light on very important issues regarding the good practice of colorectal anastomosis, however, there is a predominant personal description of surgical practice instead of focusing on evidence-based in high-quality papers.

I would recommend decreasing the frequency of personal suggestions or recommendations based on personal experience. In general, review articles are not appropriate to reach conclusions, but to make an overview of what is recommended in the literature.

I also recommend avoiding the recommendation of a specific brand of stapler devices, unless it already has a good recommendation based on previous studies.

Comment 1: Overall, the paper shed light on very important issues regarding the good practice of colorectal anastomosis, however, there is a predominant personal description of surgical practice instead of focusing on evidence-based in high-quality papers.

I would recommend decreasing the frequency of personal suggestions or recommendations based on personal experience. In general, review articles are not appropriate to reach conclusions, but to make an overview of what is recommended in the literature.

I also recommend avoiding the recommendation of a specific brand of stapler devices, unless it already has a good recommendation based on previous studies.

Reply 1: Our aim is to present the current literature evidence and describe our personal institution practice. I have added in another paragraph in our discussion to clarify our aim,

strength and weaknesses of the paper. We have removed the specific brand of stapler devices.

Change in text: Added line 295-297. Deleted brand of the stapler device.