

Peer Review File

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Reviewer A

The authors performed a literature search to assess long-term results of robotic pancreatic surgery. The search revealed 18 studies which were included in qualitative analysis. Several operative procedures including pancreatoduodenectomy, distal pancreatectomy, middle pancreatectomy and more are addressed. Robotic pancreatic surgery is becoming more and more popular and it is innovative, thus, the topic of this study is interesting and clinically relevant. However, the manuscript lacks a superordinate structure, the results are not clearly arranged, and no quality assessment of the included studies has been performed.

Comments:

The title of the manuscript is misleading as it mainly reports short-term results (perioperative morbidity, resection margins...) rather than long-term results (overall/disease-free survival, adherence to adjuvant chemotherapy...). Thus, the title should be changed. Please clarify, what is exactly meant by “long-term morbidity”, as it is essential to clarify the research question addressed by a systematic review. In the introduction, the objective/hypothesis of the systematic review should be clearly stated. The search strategy appears to be very narrow, so it is questionable whether all relevant literature was found. Using medical subject headings (MeSH) improves the quality of the literature search. Include all free text synonyms of a term, e.g. “Whipple”, “pancreaticoduodenectomy” and “pancreatic head surgery”. Please consider to also search web of science.

Please clarify whether a standardized extraction form has been used for data extraction and whether data extraction has been performed by one or more authors.

To evaluate the methodological quality of the included studies I recommend to critical appraise the studies with a validated tool. This is an important step of the review to make results interpretable.

I would suggest to perform an English language editing to improve readability and understanding of the manuscript. Is there an intentional distinction between “pancreaticoduodenectomy” and “pancreatoduodenectomy”? Please use either British or American English (e.g. “tumour” vs. “tumor”). When an abbreviation is introduced it should be used throughout the text (POPF).

Introduction, line 35: Are you sure that POPF rates were higher after RPD than after RDP? That sounds surprising.

Introduction, line 5-7 and discussion line 36-38 is almost the same sentence, please delete this part in the discussion section. Overall, the discussion contains many aspects that have been mentioned before.

The authors conclude that the robotic approach has several advantages and a multidisciplinary team and high-volume centers are critical for good postoperative results. However, this conclusion cannot be based on the presented results. The conclusion could contain suggestions for further research in the field.

Comment 1: The title of the manuscript is misleading as it mainly reports short-term results (perioperative morbidity, resection margins...) rather than long-term results (overall/disease-free survival, adherence to adjuvant chemotherapy...). Thus, the title should be changed

Reply 1: The author agreed with the reviewer

Changes in the text: The title is modified (see title)

Comment 2: Please clarify, what is exactly meant by “long-term morbidity”, as it is essential to clarify the research question addressed by a systematic review. In the introduction, the objective/hypothesis of the systematic review should be clearly stated.

Reply 2: The authors consider as long-term morbidity the disease free survival and overall survival

Changes in the text: In the introduction section, line 18, we have added a clearer aim of this review.

Comment 3: The search strategy appears to be very narrow, so it is questionable whether all relevant literature was found. Using medical subject headings (MeSH) improves the quality of the literature search. Include all free text synonyms of a term, e.g. “Whipple”, “pancreaticoduodenectomy” and “pancreatic head surgery”. Please consider to also search web of science.

Reply 3: On pubmed the authors conducted a MeSH search with the following terms: Whipple and pancreaticoduodenectomy and pancreatic head surgery. No results we found. In WOS the same research was conducted: 47 results was found. All papers were been evaluated during the review of the literature. 1 paper (the 48th) was published after the edit of this paper.

Changes in the text: none

Comment 4: Please clarify whether a standardized extraction form has been used for data extraction and whether data extraction has been performed by one or more authors. To evaluate the methodological quality of the included studies I recommend to critical appraise the studies with a validated tool. This is an important step of the review to

make results interpretable.

Reply 4: The extraction of data has been performed by 2 authors, F.S. and B.I.

Changes in the text: none

Comment 5: I would suggest to perform an English language editing to improve readability and understanding of the manuscript. Is there an intentional distinction between “pancreaticoduodenectomy” and “pancreatoduodenectomy”? Please use either British or American English (e.g. “tumour” vs. “tumor”). When an abbreviation is introduced it should be used throughout the text (POPF).

Reply 5: No intentional distinction there is in using pancreaticoduodenectomy and pancreatoduodenectomy. The authors usually use the british form, but gladly will use either.

Changes in the text: POPF is used throughout in the text; exactly POPF compare seven times in the text.

Comment 6: Introduction, line 35: Are you sure that POPF rates were higher after RPD than after RDP? That sounds surprising.

Reply 6: This result is confirmed by the article cited in the paper.

Changes in the text: none

Comment 7: Introduction, line 5-7 and discussion line 36-38 is almost the same sentence, please delete this part in the discussion section. Overall, the discussion contains many aspects that have been mentioned before.

Reply 7: The authors agreed.

Changes in the text: The sentence is now deleted in discussion section.

Comment 8: The authors conclude that the robotic approach has several advantages and a multidisciplinary team and high-volume centers are critical for good postoperative results. However, this conclusion cannot be based on the presented results. The conclusion could contain suggestions for further research in the field.

Reply 8: The authors added more information about this point that effectively was less discussed.

Changes in the text: In the discussion are now added a paragraph that underline the role of multidisciplinary approach in high volume center, from line 43 to line

At the end of the paper is added that more studies are necessary to confirm this data.

Reviewer B

This is an attempt at a systematic review of robotic pancreatic resections, but the authors are a bit too ambitious and the results they describe are confusing. The main

error is trying to review outcomes of both right-sided (duodenopancreatectomy) and left-sided pancreatectomies (distal pancreatectomy) to both open and laparoscopic outcomes in a single manuscript.

1. The outcomes and issues regarding duodenopancreatectomy and distal pancreatectomy are too diverse. I recommend concentrating on 1 procedure at a time. I would consider dividing these 2 procedures into 2 separate manuscripts.

2. The authors often compare these 2 procedures to ones done via either open or laparoscopic approaches. For the reader to get any benefit, I believe several Tables comparing Robotic to Open outcomes and/or Laparoscopic outcomes would be helpful to understand the extensive data in the published literature.

3. In fact, some could argue that laparoscopic and robotic are both minimally invasive approaches and could be compared as a combined group to open outcomes.

See this article, for example:

Gumbs AA, Chouillard E, Abu Hilal M, Croner R, Gayet B, Gagner M. The experience of the minimally invasive (MI) fellowship-trained (FT) hepatic-pancreatic and biliary (HPB) surgeon: could the outcome of MI pancreatoduodenectomy for peri-ampullary tumors be better than open? *Surg Endosc.* 2020 Nov 4. doi: 10.1007/s00464-020-08118-x. Epub ahead of print. PMID: 33146810.

Furthermore, please describe what defines robotic surgery and what describes robotic-assisted surgery. Is there a difference?

4. Alternatively, if the authors would prefer to compare robotic to laparoscopic outcomes after pancreatic resection, they should clearly state this in the title and then focus on that topic.

5. The authors also attempt to compare costs between the different techniques, but again because of the jumbled nature of this review article, any comments on cost are difficult to interpret for the reader. If cost is to be the focus of the manuscript, then I suggest that the authors focus on that issue alone.

6. In fact, the topic could even be more refined to discuss outcomes after either benign or malignant disease. For years, laparoscopic pancreatic resections for malignant disease were considered contraindications for many centers. This issue needs to be described better in any review on robotic pancreatic resections.

7. In short, comparing robotic duodenopancreatectomy and robotic distal pancreatectomy for both benign and malignant disease at times to patients who underwent open approaches and then to laparoscopic approaches without any Tables or organization is too confusing to be meaningful to the reader.

Comment 1: The outcomes and issues regarding duodenopancreatectomy and distal pancreatectomy are too diverse. I recommend concentrating on 1 procedure at a time. I would consider dividing these 2 procedures into 2 separate manuscripts.

Reply 1: This is a pivotal point and major criticism of our paper; our idea, probably too ambitious, is to write a paper that summarize what has been written about robotic pancreatic surgery to underline the outcomes. In a second step the authors would like to write a more specific paper. The aim is to allow the reader to get a general idea about robotic pancreatic surgery.

Changes in the text: none

Comment 2: The authors often compare these 2 procedures to ones done via either open or laparoscopic approaches. For the reader to get any benefit, I believe several Tables comparing Robotic to Open outcomes and/or Laparoscopic outcomes would be helpful to understand the extensive data in the published literature

Reply 2: The authors agreed with reviewer

Changes in the text: The table 2 and 3 are modified.

Comment 3: In fact, some could argue that laparoscopic and robotic are both minimally invasive approaches and could be compared as a combined group to open outcomes.

See this article, for example:

Gumbs AA, Chouillard E, Abu Hilal M, Croner R, Gayet B, Gagner M. The experience of the minimally invasive (MI) fellowship-trained (FT) hepatic-pancreatic and biliary (HPB) surgeon: could the outcome of MI pancreatoduodenectomy for peri-ampullary tumors be better than open? *Surg Endosc.* 2020 Nov 4. doi: 10.1007/s00464-020-08118-x. Epub ahead of print. PMID: 33146810.

Furthermore, please describe what defines robotic surgery and what describes robotic-assisted surgery. Is there a difference?

Reply 3: There are no difference between robotic surgery and robotic-assisted surgery.

Changes in the text: In the table now the three groups are compared.

Comment 4: Alternatively, if the authors would prefer to compare robotic to

laparoscopic outcomes after pancreatic resection, they should clearly state this in the title and then focus on that topic.

Reply 4: The authors underline the role of robotic pancreatic surgery; anyway the comparison between robotic and laparoscopic or open surgery is necessary to value the advantages of robotic approach and this is develop in the text, also with the new tables. Changes in the text: See the tables 2 and 3.

Comment 5: The authors also attempt to compare costs between the different techniques, but again because of the jumbled nature of this review article, any comments on cost are difficult to interpret for the reader. If cost is to be the focus of the manuscript, then I suggest that the authors focus on that issue alone.

Reply 5: The authors agreed. This topic is deleted from the paper.

Changes in the text: Delete the text from line 50 to line 56

Comment 6: In fact, the topic could even be more refined to discuss outcomes after either benign or malignant disease. For years, laparoscopic pancreatic resections for malignant disease were considered contraindications for many centers. This issue needs to be described better in any review on robotic pancreatic resections.

Reply 6: The authors agreed with reviewer; so they added a section in the text witch explain this point and reported the NCCN guidelines (2020) that confirmed the use of laparoscopy as possible approach for pancreatic cancer.

Changes in the text: From line 41 to line the new section added.

Comment 7: In short, comparing robotic duodenopancreatectomy and robotic distal pancreatectomy for both benign and malignant disease at times to patients who underwent open approaches and then to laparoscopic approaches without any Tables or organization is too confusing to be meaningful to the reader.

Reply 7: The authors agreed and the new tables report this comparison (robotic duodenopancreatectomy and robotic distal pancreatectomy). Also the comparison is now only for malignant disease.

Changes in the text: see tables 3