

Article Information: <http://dx.doi.org/10.21037/ga-20-501>.

Reviewer A

Comment 1: The Authors described a novel technique to perform PJ during PD for soft pancreas with non dilated MPD. The technique is well-described and interesting even if the sample is very small. The results are poorly explained and it is lacking a comparison with a referent group (modified Blumgart without AL).

Reply 1: Thank you for the positive feedback and valuable comments. We agree that comparisons with a control group are needed. Accordingly, we compared data of the AL group with that of a conventional group, where patients underwent the modified Blumgart procedure without AL.

Changes in the text:

[page 3, lines 6–9 (Abstract)]

We compared the data of 16 patients who underwent PD followed by PJ with advance ligation (AL) for soft pancreas with a non-dilated MPD with that of 17 patients who underwent a conventional procedure (conventional group) without AL at a single institution between January 2015 and April 2017.

[page 3, lines 14–15 (Abstract)]

There were significantly fewer complications in the AL group than in the conventional group ($p = 0.005$). There were no cases of pancreatitis or death in either group.

[page 7, lines 2–17 (Results)]

Of the 98 screened patients, 33 (20 men, 13 women) were included in this study. AL during PD was successfully performed in 16 patients, while the conventional procedure was performed in the remaining 17 (Table 1). The two groups showed no differences in patient age, male-to-female ratio, operative indications, MPD diameter on preoperative axial CT, American Society of Anesthesiologists physical status, total operative time, and total intraoperative blood loss. A PJ stent was inserted in 15 (94%) patients in the AL group and 14 (82%) in the conventional group, with no significant difference

between the two groups. The AL group showed a higher rate of Clavien-Dindo grade I–II postoperative complications ($p = 0.037$), but a significantly lower rate of grade III–IV complications ($p = 0.005$; Table 2). Pancreatic fistula was noted in 0% of patients in the AL group and 29% of those in the conventional group ($p = 0.026$). There was no significant between-group difference in the median serum amylase levels on PODs 1 and 3. Intra-abdominal hemorrhage occurred in one patient in the conventional group on POD 2, and it was successfully managed by re-operation. The length of hospital stay and re-admission rate were similar in the two groups. One patient in the AL group was re-admitted to the hospital within 1 month because of delayed gastric emptying. There were no operative mortalities in either group.

Reviewer B

Comment:

Dear Authors,

It was a pleasure to read this concise report on your operating technique. The article is well written, the method and the results are accurately described and the weaknesses of the study are appropriately described in the discussion. Your article presents an interesting approach to this difficult aspect of pancreatic surgery.

Reply: Thank you for the positive feedback and appreciation of our work. We look forward to working with you and the other reviewers to move this manuscript closer to publication in *Gland Surgery*.

Changes in the text: none

Reviewer C

thank you for the opportunity to review this interesting technical manuscript. In this pilot study your team showed that advance ligation of the pancreatic neck may lead to dilatation of the pancreatic duct and suppose that this change may positively affect the reconstruction phase of PD. To my opinion, the paper is worth being published, however some major issues should be considered when revising the manuscript:

Comment 1: the most important limitation of the study is the small number of patients. This prevents conclusions about the safety of the method. Acute obstruction of the pancreatic duct leads to pancreatitis - I believe indeed that your method will not cause severe pancreatitis, however a severe pancreatitis is still possible and the 16 patients may have escaped it by chance.

Reply 1: Thank you for your positive feedback and careful review. We agree that the number of patients is small, which prevents conclusions about the safety of the method. This has been emphasized in the limitations paragraph in the Discussion section [page 9, lines 5–9]. Despite the limitations, however, we believe that our findings provide useful information regarding the utility and feasibility of AL not only during open surgery, but during laparoscopic and robotic procedures as well.

Changes in the text:

[page 9, line 5–6 (Discussions)]

This study has several limitations associated with the single-institution retrospective design and the small sample size, which prevents conclusions regarding the safety of the method.

Comment 2: a further problem is the lack of a control group. These 16 patients are certainly not all patients with soft pancreas and small duct in your total series of PD. In order to make any relevant conclusions about the clinical effectiveness of the method a kind of control group is needed. What about a matched pairs analysis 20:20 with patients of similar pancreatic texture and duct size who were not ligated? I mean Your postoperative results are quite impressive for such a selected group of high-risk patients - It will be informative to see the results in non-ligated cases.

Reply 2: Thank you for these recommendations. We agree that comparisons with a control group are needed. Accordingly, we compared the data of the AL group with that of a conventional group, where patients underwent the modified Blumgart procedure without AL. We included these patients because we performed ligation of the pancreatic neck to avoid exposure of pancreatic juice, regardless of the presence or absence of pancreatic cancer.

Changes in the text:

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Comment 3-1: please provide some more details about the method: what kind of suture did you exactly use to perform ligation?

Reply 3-1: Thank you for your question. We have included more details regarding the suture used in the revised manuscript.

Changes in the text:

[page 5, line 11 (Methods)]

In the AL group, the pancreatic parenchyma above the right edge of the portal vein was gently ligated using a thick thread (1-0 silk) in advance during PD (Figure 1).

Comment 3-2: did you observe any tears in pancreatic tissue caused by ligation?

Reply 3-2: Fortunately, pancreatic tissue tears were not observed in any of the cases included in this study. However, in consideration of the fact that these tears tend to occur during the ligation procedure, we performed the ligation very gently. We have mentioned this in the Methods section in the revised manuscript.

Changes in the text:

[page 5, lines 11-12 (Methods)]

Ligation was carefully performed to avoid tearing of the soft pancreatic tissue.

Comment 3-3: how many PJ were stented - such stenting may influence the POPF rate.

Reply 3-3: Thank you for the pertinent question. We have added the required details in the Results section in the revised manuscript.

Changes in the text:

[page 7, lines 7–8(Results)]

A PJ stent was inserted in 15 (94%) patients in the AL group and 14 (82%) in the conventional group, with no significant difference between the two groups.

Comment 4: I have a certain problem with the idea of the method: enlarging pancreatic duct may contribute to perform sutures for the PJ easier, however soft pancreatic tissue still remains a major problem because the risk of tears in the pancreas. Can you comment if this method makes sense only when combined with the Blumgart method?

Reply 4: Thank you for this pertinent question. Although all patients in this study were treated using the modified Blumgart method, we believe that advance ligation can be used with not only the modified Blumgart method, where ligation is performed across the main pancreatic duct, but also other methods, such as the Kakita method, where the ligation does not cross the main pancreatic duct.