

Dear editor,

Thank you very much for your decision letter and advice on our manuscript (Manuscript 82246, Observational Study) entitled “Ligamentum teres hepatis as a graft for portal and/or superior mesenteric vein reconstruction: from bench to bedside”. We also thank the reviewers for the constructive comments and suggestions. We have revised the manuscript accordingly, and all amendments are indicated by red font in the revised manuscript. In addition, our point-by-point responses to the comments are listed below this letter.

This revised manuscript has been edited and proofread by Medjaden Inc., a professional manuscript editing company.

We hope that our revised manuscript is now acceptable for publication in your journal and look forward to hearing from you soon.

With best wishes,
Yours sincerely,

Qiangpu Chen

Response to Reviewer 1

Surgeons have gradually pushed the boundaries in surgical resection thanks to the advancements in oncology and critical care. With the advancement of vascular anastomosis techniques in recent years, radical surgery for tumors combined with venous vascular resection and reconstruction has been widely used. For vascular replacement materials that can be used for reconstruction are autologous veins, parietal peritoneum, also falciform ligament, artificial blood vessels and allogeneic blood vessels. Autologous vessels are less used than the Allogeneic grafts who have the advantages of availability, good matching of caliber, and ideal histocompatibility. This study has been performed for evaluating PV/SMV reconstruction using autologous ligamentum teres hepatis graft in pancreaticobiliary malignancy patients. Twenty-six patients have undergone Pancreaticoduodenectomy combined with PV and/or SMV resection and reconstruction using recanalized ligamentum teres hepatis graft and the conclusion drawn is: That ligamentum teres hepatis graft can be used as an autologous graft for PV and/or SMV reconstruction in pancreaticobiliary malignancy patients who require PV and/or SMV resection. The overall morbidity and mortality rates were 38.46% and 7.69%, respectively. There were no graft-related complications. Graft stenosis rates at two weeks, one month, three months and one year were 7.69%, 11.54%, 15.38%, and 19.23%, respectively. Although a good effort by the authors, it is a small series and the conclusion drawn is well known. There seems to be no unique message. The Indications, technique and the outcome has been well studied. I suggest the authors to carry on the study and come out with a power statement.

Response: Thank you for your suggestion. We acknowledge that this study is limited by its retrospective nature and the small number of patients who underwent the pancreaticoduodenectomy (PD) procedure combined with vascular reconstruction using the recanalized LTH graft. However,

this study does have the largest sample size that exclusively focuses on PD patients with venous reconstruction using a recanalized LTH graft.

Although intra-abdominal usage of polytetrafluoroethylene for PV/SMV reconstruction has been described in PD procedures, concerns surrounding the need for long-term anticoagulation therapy as well as graft infection and anastomosis disruption following pancreatic leaks restricts the usage of prosthetic grafts in PD [1,2]. The acquisition of autologous venous substitutes will increase collateral damage. Moreover, in remote areas and impoverished communities, it is difficult for surgeons to obtain artificial vessels and allogeneic grafts. Therefore, it is necessary to explore novel grafts from a wide range of sources with low cost, good histocompatibility, and without additional damage.

References

1. Chu CK, Farnell MB, Nguyen JH, et al. Prosthetic graft reconstruction after portal vein resection in pancreaticoduodenectomy: a multicenter analysis. *J Am Coll Surg* 2010; 211(3):316-24.
2. Stauffer JA, Dougherty MK, Kim GP, et al. Interposition graft with polytetrafluoroethylene for mesenteric and portal vein reconstruction after pancreaticoduodenectomy. *Br J Surg* 2009; 96(3):247-52].

Response to Reviewer 2

1. In the manuscript, many continuous variables are reported as means with standard deviation. I suggest as this is a small study to report medians and interquartile ranges.

Response: Thank you for your kind suggestion. We have revised the manuscript and reported the continuous variables as medians with interquartile ranges.

2. In the mortality section, two cases are reported. I consider that the exact causes should be addressed for each patient.

Response: In the two patients who died within 30 days post-surgery, one died of gastrointestinal hemorrhage caused by bleeding from the pancreatoenteric anastomosis, and the other died of pancreatic fistula-associated severe abdominal bleeding caused by gastroduodenal artery stump bleeding. This information has been added to the “Methods – Clinical Study: Subjects” section of the revised manuscript.

3. How many pancreaticoduodenectomies are performed in your center, and what is the rate of vascular resections? Of them, how many patients represent your cohort?

Response: Two hundred and sixty-four patients underwent a pancreaticoduodenectomy (PD) at our center from September 2003 to July 2019. Thirty-nine of the 264 patients underwent PD combined with portal vein and/or superior mesenteric vein resection. The vascular resection rate was 14.77%. Among the 39 patients, 26 patients underwent PD combined with portal vein and/or superior mesenteric vein resection and reconstruction using the ligamentum teres hepatis. This information has been added to the “Results – Clinical Data: Postoperative outcomes” section of the revised manuscript.

4. What criteria did you use to state a moderate stenosis?

Response: As was previously described by reference 17 in the manuscript, the classification of reconstructed vein stenosis was based on the classification method suggested by Kleive *et al.* The degree of SMV/PV diameter change was classified as grade A (0-49% reduction in diameter), grade B (50-69% reduction), and grade C ($\geq 70\%$ lumen reduction) change. Grades A, B and C were considered to be mild, moderate and severe stenosis, respectively.

5. What does "t" represent in table 2?

Response: The "t" in Table 2 had no practical significance. A negative value of "t" indicated that the mean of the previous sample was lower than the mean of the subsequent sample. We have removed the "t" for clarity. Thank you for your kind reminder.

6. How do you decide if a patient requires pv/smv resection?

Response: All patients were evaluated preoperatively by contrast-enhanced computed tomography, and some of them by endoscopic ultrasonography for preliminary assessment of tumor morphology, vascular involvement, and native anatomy. When it was found that the tumor could not be separated from the PV/SMV during the operation, the tumor was resected in combination with the PV/SMV.