

10 October 2022

Editor in Chief

World Journal of Clinical Cases

Dear Sir,

We are pleased to have been given the chance to revise our manuscript No. 79408, entitled “Anatomical basis for pancreas transplantation via isolated splenic artery perfusion: a literature review” for publication in World Journal of Clinical Cases.

We also appreciate the constructive comments from the reviewers.

We addressed the reviewer’ comments and revised the manuscript, accordingly, based on the recommendations and suggestions.

A response to the reviewer’ comments is provided below.

We hope that the revised version will meet the requirements for publication.

Sincerely yours,

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Reviewer #1:

Scientific Quality: Grade D (Fair)

Language Quality: Grade B (Minor language polishing)

Conclusion: Rejection

Specific Comments to Authors: Anatomical assessment of intra-pancreatic blood flow has been fully studied. Pancreas transplantation with isolated splenic artery blood supply has already been reported by the same group of Pancreas transplantation Dpt. in Moscow in six patients (Alexey V. Pinchuk and Ilya Dymiriev et al. *Asian Journal of Surgery*, 2020). The possibility to perform a pancreas transplantation from an anatomical point of view via a unique blood supply is out of question. However, the risk/benefit ratio for such a procedure is unbalanced due to the challenging nature of the surgical procedure used, which depends on a variety of variables where anatomy is only one variable. During pancreas transplantation, hemodynamic conditions can vary significantly, resulting in a high risk of choosing a single blood supply due to anatomical variability and hemodynamic variability. The lack of adequate autonomic response in diabetic patients to hypovolemia can result in unexpected functional dysregulation of the opening of intrapancreatic vascular anastomoses. In prolonged hypotension, intrapancreatic anastomoses for maximal vascularization of the duodenum can be impaired. For these considerations, the most reliable blood supply for a pancreas transplantation is considered the dual supply via the SMA and SA arteries. It would be unwise to propose one blood supply via the SA for pancreas transplantations, which have the highest complication rate. The isolated splenic artery blood supply can be proposed as a rescue procedure in very rare conditions where the mesenteric artery stump or the inferior pancreatico-duodenal artery have been allocated to the liver or intestine or damaged during abdominal multi-organ procurement (multiorgan procurement of liver, pancreas and intestine). The paper seems an anatomical review of several papers from different anatomical studies and it does not seem to have a real clear clinical relevance for readers of the *World Journal of Gastroenterology*; therefore, it would be better suited for an anatomical journal.

Answer.

Dear reviewer! Thank you for your thorough review. We agree that if it is possible to perform a pancreas transplant with a preliminary standard arterial reconstruction using a Y-shaped prosthesis, then this should be done, no arguments here, and we added this statement to our paper. There are cases, for example, in the presence of the right branch of the own-hepatic artery, extending from the trunk of the superior mesenteric artery, when

surgeons of the organ donation team take it as part of a liver transplant along with the trunk of the superior mesenteric artery (it is a higher priority, since liver transplantation is a life-saving operation, and pancreas transplantation - improving the quality of life). Very often they cut off the SMA at the level of the origin of the inferior pancreaticoduodenal artery. In this case, the surgeon essentially has 2 options: refuse to perform the operation or perform appropriate tests to confirm the developed collateral blood flow inside the pancreas and perform transplantation with isolated blood supply through the splenic artery system. In essence, this expands the eligibility criteria for donor organs, allowing the use of organs potentially suitable for transplantation, which contributes to reducing the critical shortage of donor organs. In general, the article is devoted to the anatomical justification of the operation according to the new technique, taking into account the peculiarities of the blood supply to the organ, cases of adequate blood supply to the organ in case of occlusive thrombosis of one of the branches or both branches in clinical pancreas transplantation and our experience in performing the operation according to this method (today it is 9 cases out of 83, this is almost 11%). We do not suggest tying off the trunk of the superior mesenteric artery if it is sufficient for arterial reconstruction.

Reviewer #2:

Scientific Quality: Grade B (Very good)

Language Quality: Grade B (Minor language polishing)

Conclusion: Minor revision

Specific Comments to Authors:

1.The authors described the variation of arterial vessels for pancreas transplantation. The splenic artery has a high percentage of consistency, which is important and useful for the pancreatic transplantation, enhancing the operation success rate.

2.However, in the figure legends, you should present more details, so that the clinicians can clearly identify the possible variation of the arteries supplying to different parts of the pancreas.

Answer.

Thank the reviewer for this important comment.

Regarding your suggestion, more extended information is given in the text of the manuscript and adding it to the captions to the diagrams will lead to duplication of data.