

Reviewer 1

1. The typo "inferior vein" is determined, correction to "vena cava inferior" is necessary.

Answer: we have corrected the mistake.

2. Figures with images of scans of instrumental diagnostics need to be improved, because the clarity decreases with magnification.

Answer: we have changed the images and added some lettering.

3. I also recommend adding data from the following source to the introduction and conclusion section (Kovalenko YA, Zharikov YO, Konchina NA, Gurmikov BN, Marinova LA, Zhao AV. Perihilar cholangiocarcinoma: A different concept for radical resection. *Surg Oncol.* 2020 Jun;33:270-275. doi: 10.1016/j.suronc.2020.02.013. PMID: 32561092), which will strengthen the reviewed manuscript.

Answer: we have read the article in detail and data to the introduction.

Reviewer 2

1. What part of the liver (segments, hemiliver, extended resection etc.) was removed by ex-situ resection? This is not mentioned throughout the manuscript.

Answer: left hemiliver was resected in vivo, and the caudate lobe was removed by ex-situ resection.

2. The authors claim resection and reconstruction of the hepatic vein and V. cava. However, perihilar cholangiocarcinoma usually invades the portal vein and sometimes the hepatic artery due to the anatomic localization at the hilum. Was there a resection and reconstruction of either portal vein or hepatic artery performed?

Answer: left portal vein as well as left hepatic vein were completely resected, and partial right portal vein were resected. The anastomotic reconstruction of the middle hepatic vein, the right hepatic vein, the root of portal vein, vena cava inferior, and right hepatic artery were performed.

3. In the "Case presentation section" resection and reconstruction of the hepatic vein is described. Which hepatic veins was reconstructed? The middle hepatic veins? What about the left and right hepatic veins?

Answer: the middle hepatic vein and the right hepatic vein were reconstructed.

4. Was there any involvement of the left or right hepatic vein (LHV, RHV)? This is

not defined in the manuscript nor can be seen on the CT and MRI images (Fig. 1). If there was no involvement of either veins, a mesohepatectomy including segments I, IV, V and VIII or a central resection of Seg. IVb and V + I including the bile ducts (also called “Taj Mahal” resection) might be considered instead of a more complex ex-situ procedure and auto-transplantation. Similar, even if the V. cava is involved, replacement is usually possible without an ex-situ procedure when the insertions of the hepatic veins into the V. cava can be preserved and clamping below the hepatic veins is possible.

Answer: the tumor invaded left and right portal vein, as well as middle and right hepatic vein (figure 1), which ELRA was the best choice for the patient.

5. Was there any bypass used during the anhepatic phase? Any cooling or perfusion of the liver ex situ?

Answer: allogeneic iliac vein was used as the bypass between portal vein and vena cava inferior during the anhepatic phase. When the right lobe including the tumor was resected, the right lobe was placed in an ice basin immediately and perfused with 4°C HTK solution.

6. The authors state that the patients received tacrolimus in the postoperative course. What is the reason for that? Usually, no immunosuppression is needed after autotransplantation. Why should there be a rejection? Is there any data why this was administered?

Answer: because we used allogeneic iliac vein to lengthen the middle and right hepatic vein respectively.

7. Figure 3 (pictures from intraoperative situs) needs some lettering to define the relevant structures. Even for a surgeon who is familiar with these extended procedures, it's hardly impossible to define the structures on a plain picture.

Answer: we have added some lettering to the pictures.

Minor points 1. To demonstrate the postoperative state, I recommend including a or a few pictures from CT or MRI scans from the follow-up.

Answer: we have added some information of postoperative state.