

## Peer Review File

Article information: <http://dx.doi.org/10.21037/ls-20-115>.

### Reviewer A

#### Comments to the authors:

**Comment 1:** The authors highlight in the discussion the importance of changing the incision site. This seems to be a crucial step for achieving such good results. However, there are no data about this issue in the results section. Please split the resections in two groups according to the incision. This with the aim to show the data your discussion is based on.

**Reply 1:** This has been clarified in Results/Line2-6 and Table 2 as following:

Results/Line2-6: The surgical approach was established at the midline (umbilicus or midline scar) or at the right subcostal midclavicular line in 25/0 and 14/11 patients in SPMIN and SPMAJ, respectively ( $p < 0.001$ ). Types of liver resections with respect to the incision site are given in Table 2 (Tab 2). Non-anatomical resections (subsegmentectomies or combined segment resections) were carried out in 20 patients. Numbers of resected segments are depicted in figure 2 (Figure 2).

Table 2:

Table 2: Type of procedure according to the access-site				
	SPMIN (n=25)		SPMAJ (n=25)	
Access site	Midline	Right subcostal	Midline	Right subcostal
Single segmentectomies	14	-	5	3
Left lateral segmentectomies	11	-	-	-
Left medial segmentectomies	-	-	-	-
Right anterior segmentectomies	-	-	1	-
Right posterior segmentectomies	-	-	3	4
Left hepatectomies	-	-	5	-
Right hepatectomies	-	-	-	4

**Comment 2:** Do the authors have an explanation for the 0% bilioma in their patient cohort? Is this also reflected in non included patients performed at their centre?

**Reply 2:** We have added a statement in the Discussion section (Line 47-50):

Occasionally, we have experienced bilioma formation after open or minimally invasive liver resections utilizing the CUSA or inline pre-coagulation. As we additionally use clips on large bile ducts or bipolar coagulation on small branches with both techniques the bilioma rate does not depend on the surgical approach.

**Comment 3:** Could the authors also shortly discuss their experience about learning curve?

**Reply 3:** This is described in the Discussion section (last paragraph):

Expanding the spectrum from SPMIN to SPMAJ requires advanced individual and technical skills. It should be stated that the study design and strict patient selection following the aforementioned exclusion criteria was in part attributed to an intense learning curve and should therefore be regarded as a limiting factor before generalizing these results.

**Comment 4:** Complications should be listed according to a score (e.g. Clavien-Dindo) since complication >2 can be defined as the more serious ones

**Reply 4:** This is given in the Results section (Line 38-40):

The number of patients with postoperative complications was one (4%, Clavien-Dindo 3a) and five (20%, Clavien-Dindo 2 and 3a in one and four patients, respectively) in SPMIN and SPMAJ, respectively (p=0.190).

**Comment 5:** It would be nice to have a separate table with the different oncologic indications.

**Reply 5:** This is given in the Results/Pathology section:

Pathologic assessment yielded specimens without tumor lacerations in all patients with malignancies. The underlying diseases are listed in Table 3 (Tab 3).

Table 3:

Table 3: Underlying malignant diseases		
	SPMIN	SPMAJ
Benign diseases		
Focal nodular hyperplasia	4	-

Giant hemangioma	2	4
Adenoma	2	-
Caroli Syndrome	1	
Abscess formation	1	1
<b>Malignant diseases</b>		
<b>Primary liver tumors</b>		
Hepatocellular carcinoma	3	4
Cholangiocellular carcinoma	2	1
<b>Liver metastases</b>		
Colorectal cancer	6	8
Neuroendocrine tumors	1	3
Pancreatic cancer	-	2
Esophagogastric cancer	2	-
Breast cancer	-	1
Ovarian cancer	-	1
Prostate cancer	1	-

**Comment 6:** Please be sure to have the same acronym during the entire manuscript, e.g. SILMAJ instead of SPMAJ

**Reply 6:** We have corrected two misleading acronyms (Methods/Lines 16 and 42).

**Comment 7:** On page 8 the description of the procedures performed in the two different groups is rather confusing. It might help adding a table.

**Reply 7:** This is given in Table 2 (see Reply 1)

**Reviewer B**

**Comments to the authors:**

**Comment 8:** Please provide any information on vascular inflow control during parenchymal transection. Was it not necessary at all? Did you, for safety reasons, put a tourniquet around the hepatoduodenal ligament?

**Reply 8:** This is given more in detail in the Methods/Procedure section (Line 15-17)

Pringle maneuver was not used routinely although a sling encircling the hepatoduodenal ligament was prepared in SPMAJ (right anterior segmentectomies, right and left hepatectomies).

## **Reviewer C**

### **Comments to the authors:**

**Comment 9:** Usually in the literature the definition of minor and major hepatic resection is defined as 4 or more segments for major resection. The authors have given a different definition.

**Reply 9:** We used the terms minor and major liver resection according to the Consensus Statement Literature reference 5 (Wakabayashi G, Cherqui D, Geller DA, et al.

Recommendations for laparoscopic liver resection: a report from the second international consensus conference held in Morioka. Ann Surg. 2015;261(4):619-29.)

**Comment 10:** For better comparison of the manuscript with another publications I would therefore recommend to change major and minor liver resection to another term that defines the technical challenge of the procedure.

**Reply 10:** To more precisely define the technical challenge of the respective procedures we provided the difficulty score between SPMIN and SPMAJ. (Table 1) and further summarized all procedures in Table 2.

**Comment 11:** Only 80% in major resection and 60% in minor resection were indicated by malignancies. It would be interesting to see the underlying disease for all of the liver resections more detailed.

**Reply 11:** This is given in Table 3

**Additional comment:** Due to a typographical error we had to correct two numbers in the Results section Page 11/Line 3,5, which basically did not change the informative content: During a median oncologic follow-up of 63 and 61 months (SPMIN and SPMAJ) nine (60%) and four (20%) patients suffered from recurrent diseases (apart from the resection plane or metastatic disease), whereas three patients (20%) in SPMIN and two patients (10%) in SPMAJ died during the observation period.