Laparoscopic distal pancreatectomy after liver transplantation: A single center experience

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Introduction

There has been significant advances and improvement in orthotopic liver transplantation (OLT) surgical techniques and medications which translated into improved survival and increased number of liver transplantation in the United States.

Along with the increasing life expectancy of those undergoing OLT comes the possibility of unrelated diseases requiring procedures and operations of the hepatobiliary and pancreatic regions.
Therefore pancreatic resections are seen more frequently in OLT patients.

The aim of this study is to report the feasibility and short-term outcomes of laparoscopic distal pancreatectomy (LDP) in patients who have undergone OLT.

Methods

Data was obtained from a prospectively maintained database within the Hepatopancreaticobiliary Surgery Department at a single high-volume center.

All patients undergoing LDP after OLT from January 2011 until September 2022 were retrieved.

Demographics, indications for pancreatic resection and time from liver transplant to LDP were reported.

Data pertaining to 90-day complications including post-operative pancreatic fistula (POPF), and post-pancreatectomy hemorrhage (PPH) were collected and scored according to international consensus guidelines.

Clavien-Dindo scores were assigned to each subject with major complication recorded as grade IIIa or higher

Continuous variables were recorded as mean and range.

Categorical variables were summarized using frequency and percentage.

Results

A total of 6 patients were identified meeting inclusion criteria.

3 patients were females and 3 males with a mean age of 66 years (range 60-78).

Average body mass index (BMI) was 27.

Average length of stay (LOS) in our cohort was 5 days.

No Neoadjuvant therapy (NAT) was given.

Two patients required conversion to open.

Two patients had major complications.

One clinically relevant post-pancreatectomy fistula (POPF) and one post-pancreatectomy hemorrhage (PPH).

Two patients had minor complications; Biochemical leak and C diff colitis

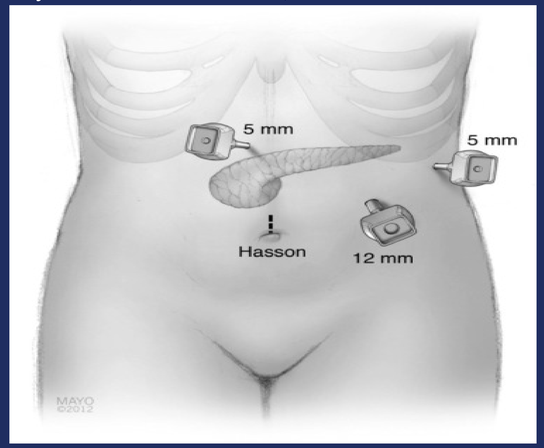
No mortality within 90 days from LDP.

Results

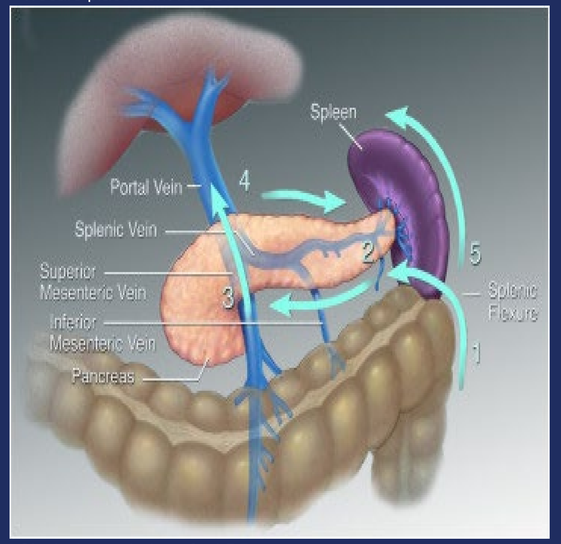
Table: Summary of patient demographic and clinical data for LDP after OLT

Patient	Gender	Age	OLT to LDP (months)	Indication for LDP	90 days mortality	90 days morbidity
1	Male	73	60	RCC met	No	Grade B POPF
2	Male	60	48	PDAC	No	None
3	Female	65	8	IPMN	No	PPH s/p IR embolization
4	Male	78	7	PNET	No	None
5	Female	69	35	PDAC	No	C. diff colitis
6	Female	65	138	PNET	No	Biochemical leak

RCC met – Renal Cell carcinoma metastasis
IPMN - intraductal papillary mucinous neoplasm
OLT - orthotopic liver transplantation
LDP – Laparoscopic distal pancreatectomy
PNET - pancreatic neuroendocrine tumor
PDAC - pancreatic ductal adenocarcinoma
POPF – post pancreatic fistula
PPH – Post pancreatectomy hemorrhage



Trocars placement for LDP



Clockwise technique for LDP

Discussion

Pancreatic resections after OLT is rare and very few reports in the literature describes the outcomes.

The altered anatomy and immunosuppression creates difficulties and challenges intra and postoperatively.

There is reported increased complications following pancreatic resections after OLT.

In this report we focused on LDP after OLT

We had 2 cases that required conversion to open (one due to injury to the hepatic artery and one due to dense adhesions).

In our experience, performing LDP after OLT is quite feasible. In general, the burden of abdominal adhesions is generally quite low likely due to post-OLT immunosuppression.

Conclusions

LDP after OLT carries increased complications risk compared to no OLT patients. However, it is feasible with acceptable outcomes at high volume institutions and if performed by experienced surgeons that are familiar with altered anatomy after OLT.

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