Journal of Clinical Gastroenterology and Hepatology
ISSN: 2575-7733

Open access Short Communication

# How to Achieve Institutional Success in Minimally-Invasive Hepatic Surgery: The Cleveland Clinic Experience

**Alejandro Pita*, Choon H. David Kwon**

*Department of General Surgery, Digestive Disease and Surgery Institute, Cleveland Clinic, USA*

## INTRODUCTION

Despite intense scrutiny in the early years due to safety concerns, the application of minimally invasive techniques to the field of hepatobiliary surgery has gained significant traction in recent decades. Excellent perioperative results in hepatic resections for malignancy without compromise in oncological outcomes have led to increasing worldwide acceptance [1,2]. Similarly, minimally invasive donor hepatectomy for liver transplantation is now routinely performed, although widespread application in centers in North America continues to trail several Eastern countries in where this practice is ubiquitously performed. The implementation of certain structural and technical changes in the institutional practice of liver surgery can be key for the widespread adaptation of minimally invasive techniques, as demonstrated at the Cleveland Clinic, one of the largest tertiary hepatic surgery and liver transplant centers in the United States [3].

## DESCRIPTION

The benefits of minimally invasive approaches in liver surgery are noteworthy, offering shorter hospitalization periods, decreased blood loss, minimalization of procedure related pain, decreased postoperative adhesions, less overall hospital costs, and improved aesthetic outcomes when compared to the open approach [4]. In the case of liver resection in the context of underlying liver disease, such as in primary liver malignancies arising in a background of cirrhosis, the laparoscopic approach also offers a lower incidence of postoperative ascites and liver failure, with no difference in operative time, bile leak, postoperative bleeding, pulmonary complications, deep surgical site infections, oncologic resection margins, recurrence, or overall mortality [5]. For these reasons, centers across the world have attempted to set forth a pathway to increase the utilization of minimally invasive techniques. However, due to a steep learning curve and the importance of having access to available expertise during the incorporation process, many surgeons have encountered significant challenges leading to "stagnation", a period that is usually comprised of persistently high open conversion rates and the inability to significantly increase the number of major hepatectomies performed in a purely minimally invasive fashion.

In the Cleveland Clinic experience, a number of initiatives were implemented in order to overcome these challenges, allowing the stagnation to unfold into an evolution period where the practice purely laparoscopic hepatic resections utterly flourished [3]. Among these, of critical importance did the establishment of a dedicated operating room team comprise surgeons, anesthesiologists, scrub technicians, circulating nurses, and central supply staff, all of which underwent comprehensive education and training in the practice of minimally invasive cases. Other measures instituted included the recruitment of a surgeon with significant expertise in purely laparoscopic hepatic surgery, the standardization of operating room equipment and port placement, the use of a three dimensional flexible laparoscopic camera, the practice of precision dissection of the structures within the liver parenchyma during the hepatic transection, and the selective use of the Pringle maneuver. Lastly, a comprehensive disaster management protocol was developed in case of the occurrence of an emergency or unfavourable result during the transition period [6]. Following the introduction of these measures, the number of major hepatectomies increased by significant margins, and the overall open conversion rate experienced a marked decrease.

## CONCLUSION

While many North American institutions have adopted mini-

| | | | |
|---|---|---|---|
| **Received:** | 01-August-2022 | **Manuscript No:** | IPJCGH-22-14194 |
| **Editor assigned:** | 03-August-2022 | **PreQC No:** | IPJCGH-22-14194(PQ) |
| **Reviewed:** | 17-August-2022 | **QC No:** | IPJCGH-22-14194 |
| **Revised:** | 22-August-2022 | **Manuscript No:** | IPJCGH-22-14194 (R) |
| **Published:** | 29-August-2022 | **DOI:** | 10.36648/2575-7733.6.8.36 |

**Corresponding author** Alejandro Pita, Department of General Surgery, Digestive Disease and Surgery Institute, Cleveland Clinic, USA. Email Id: PITAA@ccf.org

**Citation** Pita A, Kwon CHD (2022) How to Achieve Institutional Success in Minimally-Invasive Hepatic Surgery: The Cleveland Clinic Experience. J Clin Gastroenterol Hepatol. 6:36.

mally invasive techniques in liver surgery, only few centers of excellence have been successful in the routine practice of purely laparoscopic/robotic major hepatectomy. In the Cleveland clinic experience, three major obstacles were identified to be impeding the evolution of these cases: the lack of team training, absence of procedural standardization, and the paucity of expert mentorship. Once these challenges are properly addressed with the implementation of specific measures, the widespread practice of minimally invasive surgery for major hepatic resections and donor hepatectomy can materialize into reality.

## ACKNOWLEGEMENT

None

## CONFLICT OF INTEREST

Authors declare no conflict of interest.

## REFERENCES

1. Shimizu A, Ito M, Lefor AK (2022) Laparoscopic and robot-assisted hepatic surgery: An historical review. J Clin Med. 11(12):3254.
2. Wang ZY, Chen QL, Sun LL, He SP, Luo XF, et al. (2019) Laparoscopic versus open major liver resection for hepatocellular carcinoma: Systematic review and meta-analysis of comparative cohort studies. BMC Cancer. 19(1):1047.
3. Sasaki K, Nair A, Moro A, Augustin T, Quintini C, et al. (2022) A chronological review of 500 minimally invasive liver resections in a North American institution: Overcoming stagnation and toward consolidation. Surg Endosc. 36(8):6144-6152.
4. Cleary SP, Han HS, Yamamoto M, Wakabayashi G, Asbun HJ (2016) The comparative costs of laparoscopic and open liver resection: A report for the 2nd International Consensus Conference on Laparoscopic Liver Resection. Surg Endosc. 30(11):4691-4696.
5. Xiong JJ, Altaf K, Javed MA, Huang W, Mukherjee R, et al. (2012) Meta-analysis of laparoscopic Vs open liver resection for hepatocellular carcinoma. World J Gastroenterol. 18(45):6657-6668.
6. Sasaki K, Aucejo FN, Nair A, Fujiki M, Diago Uso T, et al. (2021) Seamless introduction of a purely laparoscopic full-lobe living donor hepatectomy program in a North American center. Liver Transpl. 27(8):1203-1206.