

# Laparoscopic left liver lobectomy for hepatocellular carcinoma in a cirrhotic patient: a video report

Giovanni Battista Levi Sandri, Giovanni Vennarecci, Roberto Santoro, Pasquale Lepiane, Marco Colasanti, Giuseppe Maria Ettorre

Division of General Surgery and Liver Transplantation, San Camillo Hospital, Rome, Lazio, Italy

Correspondence to: Giuseppe Maria Ettorre, MD. Division of General Surgery and Liver Transplantation, San Camillo Hospital, Circ.ne Gianicolense 87 00151 Rome, Lazio, Italy. Email: gmettorre@scamilloforlanini.rm.it.

**Abstract:** We present a video case of a 51-year-old man admitted to our surgical and liver transplantation unit for hepatocellular cancer (HCC). Patient has a HCV cirrhosis with portal hypertension and esophageal varices F1. Child Pugh score was B7 and model of end staged liver disease (MELD) was 11. Body mass index (BMI) was 26.7 and ASA score was 2. No previous abdominal surgery. According with our multidisciplinary group we suggest a laparoscopic left lobectomy for the patient. Pringle manoeuvre was not performed. Operation time was 193 min and blood loss estimation was 100 cc. No transfusion was required. Post-operative course was uneventful, grade I of Clavien-Dindo Classification. Patient was discharged in day 8. In our experience laparoscopic resection in cirrhotic liver should be performed in selected patients and in an experienced team.

**Keywords:** Laparoscopic liver resection; hepatocellular cancer (HCC); cirrhosis; laparoscopic HCC; liver transplantation

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## Introduction

Hepatocellular cancer (HCC) is the sixth most common malignant tumor worldwide and the most common primary liver cancer (1). Liver resection or liver transplantation is the therapeutic gold standards in patient with HCC. Laparoscopic liver resection is commonly performed worldwide in patients with HCC and underlined liver disease (2). Since 2008, the Louisville consensus of experts suggested that the best indications for laparoscopy were solitary lesions less than 5 cm, located in the anterior segments, at a distance from the line of transection, the hepatic hilum, and the vena cava (3).

## Clinical vignette

We present a video case of a 51-year-old man admitted to our surgical and liver transplantation unit for HCC. Patient has a HCV cirrhosis with portal hypertension and

esophageal varices F1. Child Pugh score was B7 and model of end staged liver disease (MELD) was 11. Body mass index (BMI) was 26.7 and ASA score was 2. No previous abdominal surgery. According with our multidisciplinary group we suggest a laparoscopic left lobectomy for the patient.

## Surgical technique

Patient was placed supine on the operative table with lower limbs apart, the surgeon between the legs. Access to the abdomen was gained by open technique and pneumoperitoneum was maintained at 12 mmHg. A 10-mm port at the umbilicus housed a 30° video-camera. The other three trocars were positioned along a semicircular line with the concavity facing the right subcostal margin. Surgical procedure is displayed on *Figure 1*. Diagnostic laparoscopy was first performed and the liver was examined using laparoscopic ultrasonography (US) to confirm the



**Figure 1** Video showing the surgical procedure of laparoscopic left liver lobectomy for a hepatocellular carcinoma. Macronodular cirrhotic liver appears clearly (4).

Available online: <http://www.asvide.com/articles/392>

extension of the HCC. Steep reverse trendelenburg position was maintained. Hepatic transection was performed with Enseal device (Ethicon Endo-Surgery Inc., Cincinnati, OH, USA), clips, and application of Endo GIA vascular staples (Tyco Healthcare) on the portal pedicles. The procedure was completed following isolation and control of the left hepatic vein. After section, the specimen was placed in a bag and extracted following enlargement of the camera port. Pringle manoeuvre was not performed. Operation time was 193 min and blood loss estimation was 100 cc. No transfusion was required. Post-operative course was uneventful, grade I of Clavien-Dindo Classification. Patient was discharged in day 8.

## Comments

Laparoscopic liver resection in cirrhotic patient for HCC is described in several studies with limited numbers of cases. Laparoscopic approach is associated with less blood

loss, shorter hospital stay and not compromise oncological principles (5). In our experience laparoscopic resection in cirrhotic liver should be performed in selected patients and in an experienced team. Furthermore, laparoscopic liver resection facilitated eventual secondary surgery as liver transplantation (6).

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## References

1. Lai Q, Lerut JP. Hepatocellular cancer: how to expand safely inclusion criteria for liver transplantation. *Curr Opin Organ Transplant* 2014;19:229-34.
2. Ettorre GM, Levi Sandri GB. Laparoscopic approach for hepatocellular carcinoma: where is the limit? *Chin J Cancer Res* 2014;26:222-3.
3. Buell JF, Cherqui D, Geller DA, et al. The international position on laparoscopic liver surgery: The Louisville Statement, 2008. *Ann Surg* 2009;250:825-30.
4. Levi Sandri GB, Vennarecci G, Santoro R, et al. Video showing the surgical procedure of laparoscopic left liver lobectomy for an hepatocellular carcinoma. *Asvide* 2014;1:358. Available online: <http://www.asvide.com/articles/392>
5. Kobayashi T. Long-term Survival Analysis of Pure Laparoscopic Versus Open Hepatectomy for Hepatocellular Carcinoma in Patients With Cirrhosis: A Single-Center Experience. *Ann Surg* 2013. [Epub ahead of print].
6. Laurent A, Tayar C, Andréoletti M, et al. Laparoscopic liver resection facilitates salvage liver transplantation for hepatocellular carcinoma. *J Hepatobiliary Pancreat Surg* 2009;16:310-4.

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