

Laparoscopic right hepatectomy for hepatocellular carcinoma in cirrhotic patient

Giovanni Battista Levi Sandri^{1,2}, Marco Colasanti¹, Roberto Santoro¹, Giuseppe Maria Ettorre¹

¹Division of General Surgery and Liver Transplantation, S. Camillo Hospital, Rome, Lazio, Italy; ²Department of Surgical Sciences, Advanced Surgical Technology, Sapienza, Italy

Correspondence to: Giovanni Battista Levi Sandri, MD, PhD. Division of General Surgery and Liver Transplantation, S. Camillo Hospital, Circ.ne Gianicolense 87, 00151 Rome, Lazio, Italy. Email: gblevisandri@gmail.com.

Abstract: Hepatocellular carcinoma (HCC) is the sixth most common malignant tumor worldwide and the most common primary liver cancer. Liver resection or liver transplantation is the therapeutic gold standards in patient with HCC related with or without underline liver disease. We present a video case of a 68-year-old woman admitted to our surgical and liver transplantation unit for HCC on liver segment VII. Patient has HCV cirrhosis. Patient underwent to previous right portal vein embolization. Model of end staged liver disease was 7. Body mass index (BMI) was 26.3 and ASA score was 2. Alpha-fetoprotein was 768. According with our multidisciplinary group, we suggest a laparoscopic right hepatectomy for the patient. Operation time was 343 min and blood loss estimation was 200 CC. No transfusion was required. Post-operative course was uneventful, grade 0 of Clavien-Dindo Classification. Patient was discharged in day 7. Pathology report describes a 17 mm × 15 mm HCC grade 4, pT2N0. Laparoscopic liver resection (LLR) for HCC should be performed by dedicated surgical teams in hepatobiliary and laparoscopic surgery. The use of LLR in cirrhotic patients is in many centers proposed as the first-line treatment for HCC or as bridge treatment before liver transplantation.

Keywords: Laparoscopic liver resection (LLR); hepatocellular carcinoma (HCC); cirrhosis; meld

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Introduction

Hepatocellular carcinoma (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 related with or without underline liver disease. HCC grow on a cirrhotic liver in approximately 80% of cases (2). Liver resection in patients with cirrhosis have an increased risk of developing significant postoperative complications including ascites, gastrointestinal bleeding, encephalopathy, portal vein thrombosis and pleural effusion (3,4). Nowadays, laparoscopic liver resection (LLR) is commonly performed worldwide in patients with HCC and underlined liver disease (5). Since 2008, with the first consensus of experts in Louisville and more recently in 2015, with the second

international consensus conference held in Morioka, the recommendations for LLR suggested that the best indications for laparoscopy were solitary lesions less than 5 cm, major LLR is an innovative procedure and should continue to be introduced cautiously (6,7).

Materials and methods

From 2004 to date, over 100 patients underwent a LLR for HCC. All patients were subject to preoperative general evaluation based on patient general condition and tumor biological status during our weekly multidisciplinary team (anesthesiologist, hepatologist, radiologist and surgeon) meeting. Wedge liver resection was preferred when the lesion was superficially located. Instead a segmentectomy



Figure 1 The surgical procedure of laparoscopic right hepatectomy for a hepatocellular carcinoma in patient with liver cirrhosis (10). Available online: <http://www.asvide.com/articles/733>

was performed when the tumor was deeply located. In our practice we performed over 20 left lateral segmentectomy in cirrhotic patients (8). We previously performed laparoscopic right hepatectomy in non-cirrhotic patients (9).

Surgical procedure

Patient was placed supine on the operative table with lower limbs apart, the surgeon between the legs. Access to the abdomen was gained by Verres needle technique pneumoperitoneum was maintained at 12 mmHg. A 10-mm port at the umbilicus housed a 30° video-camera. The other four trocars were positioned along a semicircular line with the concavity facing the right subcostal margin. Diagnostic laparoscopy was first performed and the liver was examined using laparoscopic ultrasonography (US) (Aloka Hitachi Medical Systems Europe Holding AG Zug, Switzerland) to exclude abdominal carcinosis and to confirm the extension of the HCC. Steep reverse Trendelenburg position was maintained. Central venous pressure was <5 mmHg during resection. Hepatic transection was performed with Enseal device (Ethicon Endo-Surgery Inc., Cincinnati, OH), clips, and application of Endo GIA vascular staples (Tyco Healthcare) on the portal pedicles when necessary. After section, specimen was placed in a bag and extracted with Pfannenstiel incision.

Clinical case

We present a video case of a 68-year-old woman admitted to our surgical and liver transplantation unit for HCC on liver segment VII. Patient has HCV cirrhosis. The procedure is

reported on *Figure 1*. Patient underwent to previous right portal vein embolization. Model of end staged liver disease was 7. Body mass index (BMI) was 26.3 and ASA score was 2. Alpha-fetoprotein was 768. No previous abdominal surgery. According with our multidisciplinary group we suggest a laparoscopic right hepatectomy for the patient.

Operation time was 343 min and blood loss estimation was 200 CC. Pringle manoeuvre was not performed. One tubular drain was used. No transfusion was required. Post-operative course was uneventful, grade 0 of Clavien-Dindo Classification. Patient was discharged in day 7. Pathology report describes a 17 mm × 15 mm HCC grade 4, pT2N0.

Discussion

LLR is now worldwide accepted considering the excellent results shown in specialized centers (9). Liver function is considered an important indication for surgery. Most centers reserved surgery for patients with Child-Pugh class A and consider those with Child-Pugh Class B-C for transplantation (9). Nowadays, LLR is commonly performed worldwide in patients with HCC and underlined liver disease (5). The main clinical advantage of LLR is the significantly lower rate of postoperative complication considering that the abdominal wall is preserved, kinetics of the diaphragm are improved (11). The long skin incision in open surgery may induce several disadvantages for patients. Less post-operative ascites has been suggested to be as consequence of a better collateral venous drainage due to less liver mobilization in LLR. Oncological principles have been demonstrated to have no significant difference in recurrence-free or overall survival (12). A recent meta-analysis conclude that LLR for HCC is superior to open approach in terms of its perioperative results and does not compromise the oncological outcomes (13).

Conclusions

LLR for HCC should be performed by dedicated surgical teams in hepatobiliary and laparoscopic surgery. The use of LLR in cirrhotic patients is in many centers proposed as the first-line treatment for HCC or as bridge treatment before liver transplantation.

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None.

Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

Informed Consent: Written informed consent was obtained from the patient for publication of this article and any accompanying images. A copy of the written consent is available for review by the editor-in-chief of this journal.

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