



Laparoscopic R1 Vascular Hepatectomy for Hepatocellular Carcinoma (with Video)

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BACKGROUND

Surgical resection is considered the standard of treatment for hepatocellular carcinoma (HCC), when realized with negative margins (R0)¹. Not infrequently, R0 resection is unachievable, thus the concept of R1 vascular hepatectomy has been introduced and has been defined as exposure of the tumor on the specimen surface due to its detachment from vascular structures^{2–4}.

METHODS

We present two cases of R1 vascular hepatectomy for HCC. The first patient was a 50-year-old male with a diagnosis of HCC in a chronic hepatitis C setting. The preoperative computed tomography scan showed a 30 mm HCC in segment 4a, with a close relationship to the left hepatic vein, median hepatic vein, and vena cava. We

decided to perform an R1 vascular hepatectomy as a bridge to liver transplant. Surgery was performed using a cavitron ultrasonic surgical aspirator (CUSA), Aquamantys system, and Thunderbeat system, with an extracorporeal intermittent Pringle maneuver. The second patient was a 73-year-old male with a history of hepatitis C virus (HCV)-related liver disease. A 15 mm HCC was identified close to the right hepatic vein. A non-surgical approach with transarterial chemoembolization (TACE) was not possible due to stenosis of the celiac trunk, and the patient therefore underwent laparoscopic wedge resection of S7 (R1 vascular hepatectomy) using a CUSA and the Thunderbeat system, without the Pringle maneuver.

RESULTS

Operative time was 190 and 140 min for the first and second hepatectomies, respectively. No blood transfusion was necessary, and postoperative morbidity was nil. Both patients were discharged on postoperative day 3.

CONCLUSIONS

Laparoscopic liver resection is now increasingly performed for HCC. R1 vascular hepatectomy for HCC is technically demanding but feasible and safe using the minimally invasive technique.

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