Ann Surg Oncol (2024) 31:5431–5432
https://doi.org/10.1245/s10434-024-15254-4

Annals of
SURGICAL ONCOLOGY
OFFICIAL JOURNAL OF THE SOCIETY OF SURGICAL ONCOLOGY

ORIGINAL ARTICLE – SARCOMA

En Bloc Inferior Vena Cava (IVC) Resection Without Reconstruction With Right Hepatectomy and Right Nephrectomy for a Large IVC Leiomyosarcoma

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ABSTRACT

Background. Radical resection remains the only potential cure in the management of inferior vena cava (IVC) leiomyosarcomas with multivisceral resections often needed (Borghi et al. in J Cardiovasc Surg (Torino) 63:649–663, 2022). This video describes the technical nuances of surgical resection of a large retrohepatic IVC leiomyosarcoma.

Patient and Methods. Computed tomography of a 60-year-old woman revealed a 12 × 12 × 9.5 cm mass in the right suprarenal region infiltrating the IVC with intraluminal extension up to the hepatic venous confluence. The mass involved the right hepatic vein with infiltration of segment 7 of the liver and splaying of the right portal vein. Robust lumbar venous drainage from the infratumoral IVC was seen. En bloc IVC resection without reconstruction along with a right hepatectomy and right nephrectomy was performed via a right thoracoabdominal approach.

Results. After a Catell–Braasch maneuver, the surgery can be broadly divided into four major steps: (1) Right retroperitoneal mobilization of the tumor and right kidney with infratumoral IVC control, (2) mobilization of the right liver with suprahepatic IVC control, (3) division of the right portal structures with right hepatectomy, and (4) en bloc resection of the IVC tumor. Reconstruction of the IVC was not performed owing to the presence of venous collaterals (Langenbecks et al. in Arch Surg 407:1209–1216, 2022). Final histopathology showed a high-grade leiomyosarcoma with histologic organ invasion in the liver and right kidney with resected margins free of the tumor (R0).

Conclusions. Meticulous preoperative planning and expertise in liver resection and retroperitoneal surgeries facilitates such radical yet safe multivisceral resection for a large retrohepatic IVC leiomyosarcoma without the need for a cardiopulmonary bypass.

Gurudutt P. Varty and Shraddha Patkar have contributed equally to this work.

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First Received: 4 December 2023
Accepted: 22 March 2024
Published online: 18 April 2024

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SUPPLEMENTARY INFORMATION The online version contains supplementary material available at https://doi.org/10.1245/s10434-024-15254-4.

ACKNOWLEDGEMENTS We acknowledge Mr. Nilesh Ganthade, Department of Medical Graphics, Tata Memorial Hospital, Mumbai for his assistance with the video recording and editing of the video.

FUNDING No commercial interest nor financial or material support to report.

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