



# Ex Situ Liver Resection and Autotransplantation with Retrohepatic Inferior Vena Cava Reconstruction and Atrial Thrombectomy Under Extracorporeal Circulation for Inferior Vena Cava Leiomyosarcoma

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## ABSTRACT

**Background.** Surgery is the only curative treatment for retrohepatic inferior vena cava (r-IVC) leiomyosarcoma.<sup>1</sup> Cavo-hepatic confluence invasion is a poor prognostic situation, requiring extreme liver surgery for selected patients to achieve R<sub>0</sub> margins (a crucial prognostic factor). Ex situ liver resection and autotransplantation (ELRA), developed by Pichlmayr et al., permits to achieve such R<sub>0</sub> margin.<sup>2,3</sup>

**Methods.** An 84-year-old patient in excellent condition (ECOG 0), without relevant past medical history, was referred for abdominal mass, bilateral lower limbs edema, and dyspnea. Workup revealed a large r-IVC leiomyosarcoma invading cavo-hepatic confluence and protruding in right atrium without any metastasis. After multidisciplinary consultation, surgical treatment was retained. Preoperative transoesophageal echocardiography confirmed a 4-cm protruding tumoral thrombus in right atrium without abdominalisation possibility.

**Results.** A sterno-laparotomy was performed, consisting of a right nephrectomy for exposure and en bloc total hepatectomy comprising r-IVC after atriectomy for intracardiac thrombectomy under extracorporeal circulation. Tumorectomy (rIVC + segment I and IX) was performed on back

table followed by a r-IVC reconstruction through a tubulized homologous venous patch. Native IVC was reconstructed as well, permitting a side-to-side cavo-caval anastomosis for liver reimplantation. Postoperative evolution was eventless except for an early bile leak that required surgical exploration. The patient was discharged on postoperative day 32. Pathological examination confirmed r-IVC-leiomyosarcoma T<sub>4</sub>N<sub>0</sub>M<sub>0</sub> R<sub>0</sub>, FNCLCC grade 2. Eight months after surgery, general status was conserved with disappearance of symptoms, and IVC was permeable without leiomyosarcoma recurrence.

**Conclusion.** Ex situ liver resection and autotransplantation with atrial thrombectomy is a surgical possibility for R<sub>0</sub> r-IVC leiomyosarcoma invading cavo-hepatic confluence in selected patients.

**SUPPLEMENTARY INFORMATION** The online version contains supplementary material available at <https://doi.org/10.1245/s10434-024-15622-0>.

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