

Inferior vena cava tumour thrombus and renal cell carcinoma

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Renal cell carcinoma can result in venous tumour thrombus, which in rare cases involves the inferior vena cava (IVC). In the absence of metastatic disease, nephrectomy with excision of a tumour thrombus can result in long-term, cancer-free survival.¹ After developing hematuria, a 66-yr-old man (who consented to this report) underwent magnetic resonance imaging (Figure A), which

revealed renal cell carcinoma with an associated IVC tumour thrombus.

While undergoing nephrectomy and tumour thrombectomy through a midline abdominal incision, the liver was mobilized away from the IVC to allow suprahepatic occlusion of the IVC above the thrombus. This allowed *en bloc* removal of the tumour thrombus,

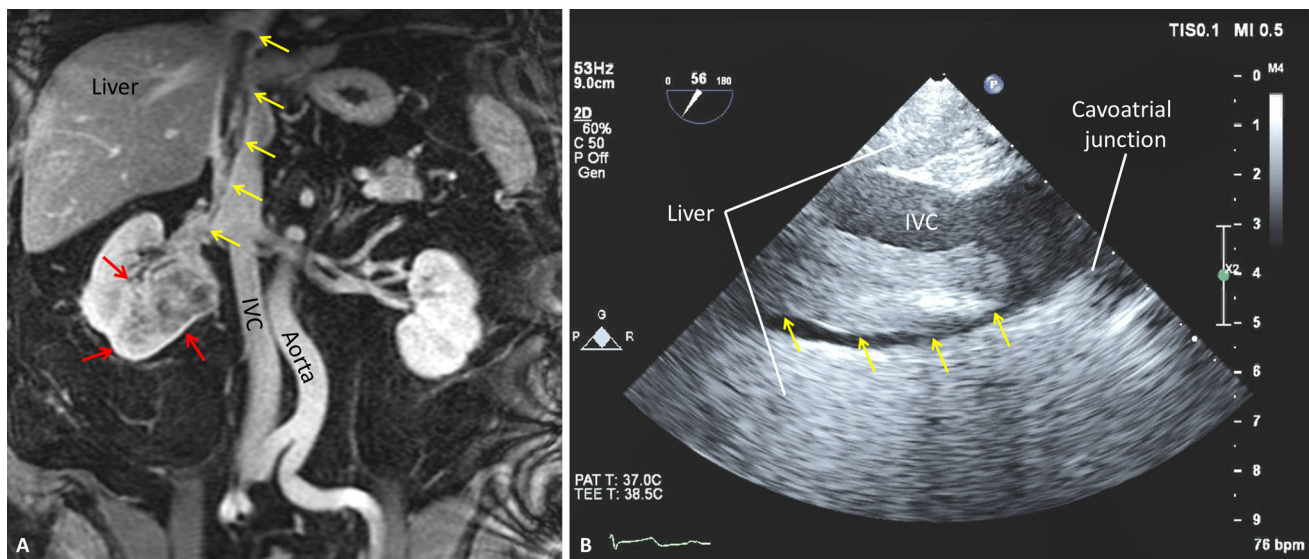


Figure A) Gadolinium-enhanced magnetic resonance imaging shows a heterogeneously enhancing renal cell carcinoma that involves the lower pole of the right kidney (red arrows). There is also an associated tumour thrombus (yellow arrows) that extends via the renal vein into

the suprahepatic inferior vena cava, nearly to the cavoatrial junction. B) Intraoperative transesophageal echocardiography shows the inferior vena cava tumour thrombus (yellow arrows) extending to within 2 cm of the cavoatrial junction

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thereby reducing the risk of intraoperative thrombus embolization.

In such cases, heightened vigilance is required to anticipate the need for fluid resuscitation and vasoactive support to mitigate severe hypotension due to the inevitable bleeding during hepatic dissection and complete caval occlusion. Intraoperative transesophageal echocardiography (Figure B) verified the extent of the tumour thrombus in this case, monitored for tumour thrombus embolization, ensured complete removal of the caval thrombus, and helped manage hemodynamic perturbations intraoperatively. The patient underwent intravenous volume loading and vasoactive support with norepinephrine infusion to avoid hypotension during caval occlusion and cavotomy to remove the tumour thrombus.

With the use of aforementioned liver mobilization to access the suprahepatic IVC, sternotomy and cardiopulmonary bypass typically are not necessary but should be readily available. Successful perioperative outcomes for these challenging cases mandate close communication between the anesthesiologist and surgical

teams, with an in-depth understanding and anticipation of the various stages of this complex operation and the hemodynamic implications.

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Conflicts of interest None declared.

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Reference

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