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Case Image

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Residual Leiomyosarcoma in the Inferior Vena Cava after Thrombectomy under Cardiopulmonary Bypass: The Role of Intraoperative Ultrasonography

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Abstract

A 52-year-old woman with chronic low back pain was found to have a leiomyosarcoma causing a tumor thrombus obstructing the IVC, visible on transesophageal echocardiography. After surgery, which included tumor and thrombus removal, a residual thrombus was seen on imaging. Anticoagulation was started postoperatively, and the patient had a successful recovery.

Imaging Studies

A 52-year-old female presented with progressive chronic low back pain of 6 months' duration. Abdominal computed tomography revealed a left ureteral and retroperitoneal mass with a tumor thrombus (TT) extending from the left renal vein to the right atrium. Transesophageal echocardiography showed that blood flow in the inferior vena cava (IVC) appeared to be completely obstructed by a dense mass extending into the right atrium (arrows, **Fig-1A** and **Fig-1B**). The patient underwent ureterectomy, retroperitoneal tumor resection, and thrombectomy under mild hypothermia cardiopulmonary bypass. The tumor thrombus was successfully removed (**Fig-1C**), but transesophageal echocardiography revealed a residual thrombus at the opening of the hepatic vein in the inferior vena cava (arrow, **Fig-1D**). Removal of the residual tumor thrombus at this site was challenging, and no further thrombectomy was performed. As residual tumor thrombus may increase the risk of inferior vena cava thrombosis, anticoagulation with low-molecular-weight heparin was initiated on the first day after surgery. Pathology confirmed that the leiomyosarcoma involved the vena cava, right atrium, and left retroperitoneum. Eleven days after surgery, the patient was discharged uneventfully and placed on oral rivaroxaban for anticoagulation. The patient had a good recovery at the 6-month postoperative follow-up.

For leiomyosarcomas involving the inferior vena cava, hepatic veins, and right atrium, thrombectomy under cardiopulmonary bypass guided by transesophageal echocardiography is the preferred treatment, as extensive involvement of the major vasculature requires multi-organ resection and complex vascular reconstruction. If the residual tumor thrombus cannot be removed, postoperative anticoagulation is also an effective treatment.

Case Image

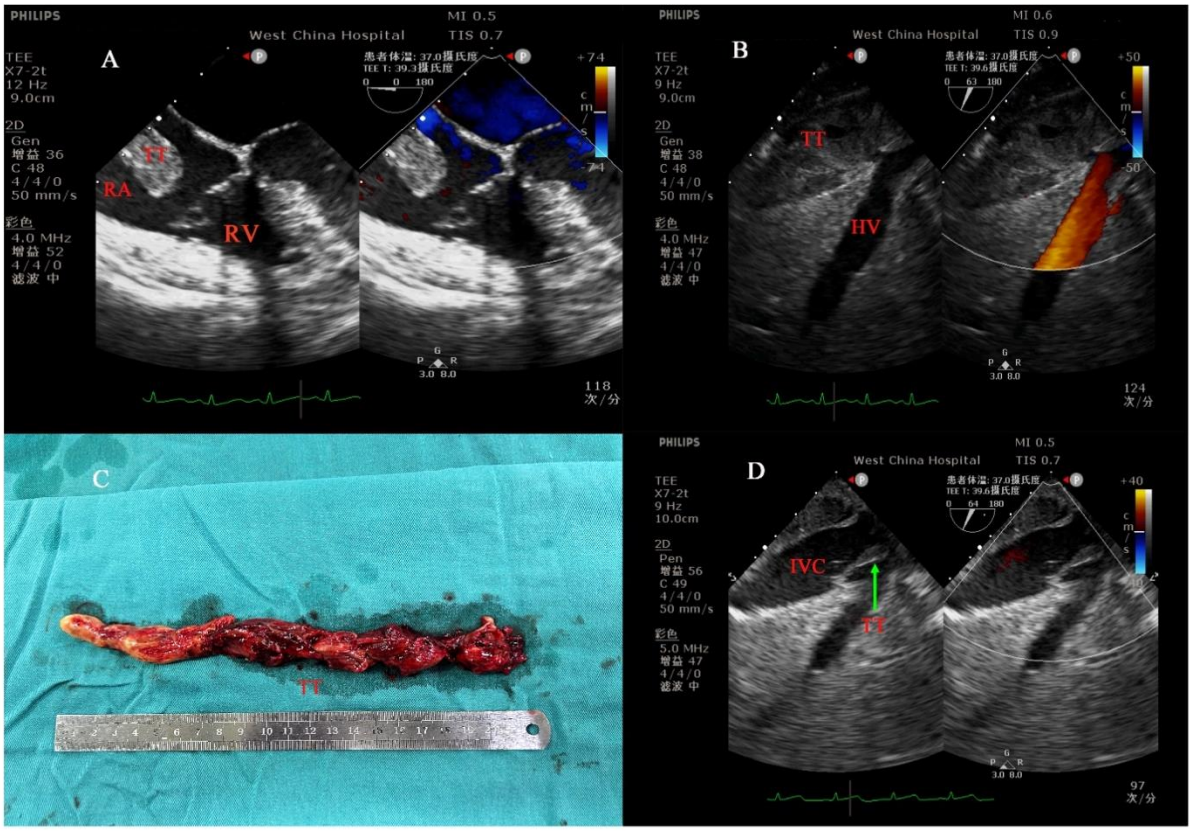

Fig-1:

Transesophageal echocardiography showed that blood flow in the IVC appeared to be completely obstructed by a dense mass extending into the right atrium (A and B). The thrombus was removed and it was 20 cm long (C). The residual thrombus (D).

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Declaration of Conflicting Interests

The author declares that there is no conflict of interest.

Written Informed Consent

Written informed consent was obtained from the patient's legally authorized representative for the publication of anonymized information in this article.

Ethics Approval

Our institution waived the need for ethics approval for the collection, analysis, and publication of anonymized case reports.