A Case Report: RA Thrombus in a patient for breast surgery

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Introduction: In oncologic surgery, significant venous system thromboses present potentially catastrophic hemodynamic consequences for otherwise low-risk procedures. Cancer patients are frequently hypercoagulable, receive pro-inflammatory chemotherapy medications, and have indwelling central venous catheters (CVC).

Case Report: 40 year old woman with breast cancer presents with a large right atrial (RA) mass and right chest port-a-cath for right mastectomy with plastic surgery reconstruction and port-a-cath removal. Her past medical history was significant for possible hypercoagulability. Three months later an outside hospital TTE showed a 1 x 2 cm inferior RA mass with otherwise normal cardiac structure and function. The patient was started on low-molecular weight heparin treatment which she continued for one month prior to her elective mastectomy. She was then referred to our institution for perioperative evaluation, including a hematology consult, cardiac MRI, and repeat TTE. Cardiac MRI showed a 1.2 x 2 cm RA mass unattached to the indwelling catheter with features of thrombus and of tumor, as well as a "shaggy" appearance and possible stalk. TTE confirmed the mass size and location but did not exclude catheter involvement.

We proceeded with mastectomy and port-a-cath removal but delayed reconstruction. Enoxaparin was continued until one day prior to surgery. After anesthetic induction, an arterial line was placed, and TEE was performed. A 2x2cm homogeneous mass adherent to the RA wall was visualized, just distal to the eustachian valve and without attachment to the CVC. A normal saline "bubble study" was performed to demonstrate the absence of patent foramen ovale and the free flow of blood between the mass and the catheter in both bicaval and 4-chamber views. The port-a-cath was surgically removed with real time TEE visualization. While the catheter was no longer present, an echogenic mass in the shape and location of the catheter was still visible. This mass was visible in bicaval, 4-chamber, and other nonstandard views superiorly in the SVC. It was also freely moving on M-mode. The removed port-a-cath was accessed and flushed with normal saline under pressure. A 3cm segment of organized thrombus was produced. Since the port-a-cath internal radius was measured as 0.27cm, and the remaining structures radius was 0.24cm, we believe the catheter removal unsheathed an internal thrombus, which remained adherent to the SVC lumen.

Mastectomy was completed, and intraoperative TEE showed no dislodgement of thrombus. The patient emerged from anesthesia, was extubated, and was taken to PACU for standard overnight recovery. Her TEE following 7 months of anticoagulation showed partial interval decrease in mass size, suggesting that it was a thrombus.
Discussion: Preoperative optimization is challenging in cancer patients due to the potentially friable nature of intracardiac masses and the urgent nature of surgical resection, which may not allow for prolonged anticoagulation. Intracatheter thrombi may remain in CVC lumens more often than recognized and may cause clinical consequences. The benefits of tumor resection must be weighed against the risk of embolism or missing the diagnosis of an intracardiac tumor.

References:


