



Entrapment of central venous catheters (CVC) at the superior vena cava (SVC) cardiopulmonary bypass cannulation site by closing purse-string sutures is a rare complication of cardiac surgery” Desai et al (2015).

Abstract:

**PURPOSE:** Entrapment of central venous catheters (CVC) at the superior vena cava (SVC) cardiopulmonary bypass cannulation site by closing purse-string sutures is a rare complication of cardiac surgery. Historically, resternotomy has been required for suture release. An endovascular catheter release approach was developed.

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**MATERIALS AND METHODS:** Four cases of CVC tethering against the SVC wall and associated resistance to removal, suggestive of entrapment, were encountered. In each case, catheter removal was achieved using a reverse catheter fluoroscopically guided over the suture fixation point between catheter and SVC wall, followed by the placement of a guidewire through the catheter. The guidewire was snared and externalized to create a through-and-through access with the apex of the loop around the suture. A snare placed from the femoral venous access provided concurrent downward traction on the distal CVC during suture release maneuvers.

**RESULTS:** In the initial attempt, gentle traction freed the CVC, which fractured and was removed in two sections. In the subsequent three cases, traction alone did not release the CVC. Therefore, a cutting balloon was introduced over the guidewire and inflated. Gentle back-and-forth motion of the cutting balloon atherotomes successfully incised the suture in all three attempts. No significant postprocedural complications were encountered. During all cases, a cardiovascular surgeon was present in the interventional suite and prepared for emergent resternotomy, if necessary.

**CONCLUSION:** An endovascular algorithm to the “entrapped CVC” is proposed, which likely reduces risks posed by resternotomy to cardiac surgery patients in the post-operative period.

Reference:

Desai, S.S., Konanur, M., Foltz, G., Malaisrie, S.C. and Resnick, S. (2015) An Endovascular Approach to the Entrapped Central Venous Catheter After Cardiac Surgery. Cardiovascular and Interventional Radiology. December 10th .

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