



Right Atrial Thrombus Associated with Permanent Dialysis Catheter in a Patient with Renal Failure

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Case Study

Hemodialysis-catheters are the most commonly used alternative vascular access device in patients who cannot be dialysed by an arteriovenous fistula formed by the patient's own vessels or are urgently needed for dialysis. Despite advanced catheter designs and anticoagulant regimens, catheter-related thrombotic complications may still occur. The most effective treatment method for the chronic thrombus attached to the catheter in the permanent dialysis catheters extending to the right atrial cavity is the surgical removal of the thrombus catheter.

A 66-year-old patient who had opened an arteriovenous fistula for hemodialysis due to polycystic kidney disease had a permanent dialysis catheter inserted into her right internal jugular vein two months ago due to fistula obstruction. The patient was admitted to the hospital with complaints of chest pain, tachycardia and dyspnea. Transthoracic echocardiography showed a right atrial mass adherent to a permanent dialysis catheter and mild tricuspid valve regurgitation, and these findings were confirmed by transesophageal echocardiography (Figure 1). Thrombolytic therapy was not initiated due to previous history of gastric bleeding. We decided to remove the thrombus catheter by surgery because of the large diameter of the thrombus and the risk of pulmonary embolism. Cardiopulmonary bypass was established after sternotomy by aorta-bicaval cannulation. The superior vena cava and inferior were turned and suspended. Right atriotomy was performed with partial bypass without cross clamp. A right-sided chronic thrombus with 2 cm × 3 cm size was observed in the right atrium (Figure 2). It was determined that the thrombus was moving towards the vena cava superior and adhered to the vena cava wall. The remaining catheter in the right atrium was cut and the thrombus attached to the catheter was surgically removed. In the same session, permanent dialysis catheter was removed and the operation was finished. The patient was uneventful in the postoperative period and the patient was discharged after a temporary dialysis catheter was placed in the femoral region.

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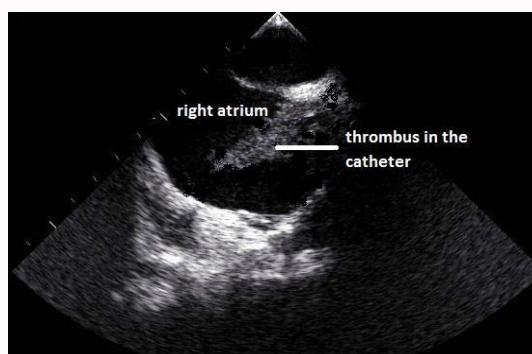


Figure 1: Echocardiography showing a large clot attached to hemodialysis catheter in right atrium.

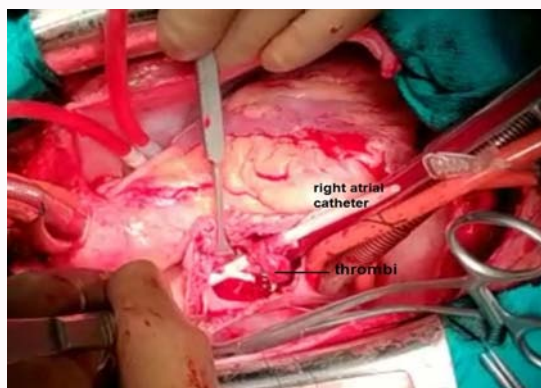


Figure 2: The dialysis catheter with thrombus in the right atrial space.

Medical or surgical treatment is mandatory due to complications that may occur due to RA thrombus. The optimal treatment option for catheter-induced RA thrombus is still controversial. The diameter, localization or tendency of the thrombus changes the treatment options. Surgical options should be preferred in patients with more than 2 cm, free part of thrombus burden or endocarditis risk [4].

In our case, surgical treatment is the best treatment of catheter-associated right atrial thrombus to prevent fatal complications. In order to avoid such clinical conditions, it is more appropriate to place the catheter in the vena cava superiora without inserting the catheter into the right atrium cavity, if catheter placement is mandatory.

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