CJASN®
Clinical Journal of the American Society of Nephrology

October 2022 • Vol. 17 • No 10

Patient Voice

Editorials

Original Articles

Acute Kidney Injury and ICU Nephrology

Chronic Kidney Disease

Feature

On the Cover

What is the diagnosis?

A 41-year-old male with history of HIV/AIDS (CD4 10 cells per cubic millimeter; noted nonadherence to antiretroviral therapy) presented with shortness of breath. He was hypoxic and in circulatory shock on arrival, requiring intubation and vasopressors. AKI was present on arrival (serum creatinine 3.5 mg/dl from 0.8 mg/dl). Blood cultures grew methicillin-sensitive *Staphylococcus aureus*, and kidney function continued to worsen with development of oliguria, requiring KRT *via* nontunneled right internal jugular catheter. Kidney dysfunction persisted, and 8 days later, a tunneled dialysis catheter was placed. During this procedure, a thrombus adherent to the original nontunneled catheter was noted.

Image Description:

Left image: The internal jugular vein (#) appears in cross section within which is a central venous catheter (*) with adherent thrombus (arrow). Right image: Manual compression redemonstrates these findings and makes the carotid artery partially visible.

Teaching Points:

Catheter associated thrombosis (CAT) is a common complication of central venous catheters. The risk factors for CAT include device-related factors (large catheter size to vein diameter ratio, number of lumens and catheter size, catheter material), improper technique (multiple insertion attempts, improper tip position), and patient factors (cancer, age, obesity, and critical illness). A 14 French (4.66-mm catheter; 1 French=0.33 mm) dialysis catheter inserted into a central vein in an immobilized, bacteremic, critically ill patient creates a high-risk situation violating all components of Virchow's triad. Management depends on the size and location of the thrombus. A localized thrombus near the insertion site only, as in our case, generally can be managed with catheter removal without therapeutic anticoagulation. The management of a centrally located CAT requires further evaluation and a multidisciplinary treatment plan including anticoagulation and/or surgical intervention (1,2).

References:

1. Niyyar VD, Chan MR: Interventional nephrology: Catheter dysfunction–prevention and troubleshooting. *Clin J Am Soc Nephrol* 8: 1234–1243, 2013

2. Yang H, Chen F, Jiao H, Luo H, Yu Y, Hong HG, Li Y, Fu P, Cui T: Management of tunneled-cuffed catheter-related right atrial thrombosis in hemodialysis patients. *J Vasc Surg* 68: 1491–1498, 2018

(*Images and text provided by Michael George, Cleveland Clinic Foundation, Department of Kidney Medicine, Cleveland, Ohio; James Lane, Cleveland Clinic Foundation, Critical Care, Respiratory Institute, Cleveland, Ohio; and Tushar Vachharajani, Cleveland Clinic Foundation, Department of Kidney Medicine, Cleveland, Ohio*)