

Repeated Neurological Complications during Dialysis – A Case for Echo?

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A 65-year-old woman presented with acute or chronic renal failure and signs of right heart failure. After hemofiltration over a temporary high-flow catheter, a single lumen central venous dialysis catheter had been placed surgically via the left jugular vein. However, renal replacement therapy was repeatedly complicated by altered flows of the dialysis unit, impaired consciousness, new onset of seizures, and left-sided hemiparesis.

An echogenic artifact appeared on transesophageal echocardiography (Vivid 7, GE Medical Systems, Milwaukee, WI, USA) in proximity to

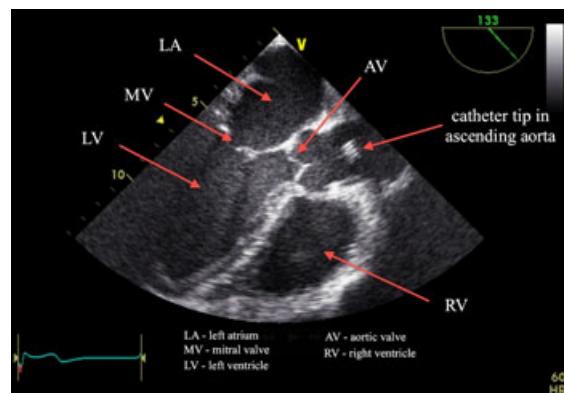


Figure 1. Transesophageal echocardiography, mid-esophageal long-axis view demonstrating catheter tip in ascending aorta about 2.3 cm distal to the aortic valve.

The authors declare that they sought and received written permission from the patients relative to report the case.

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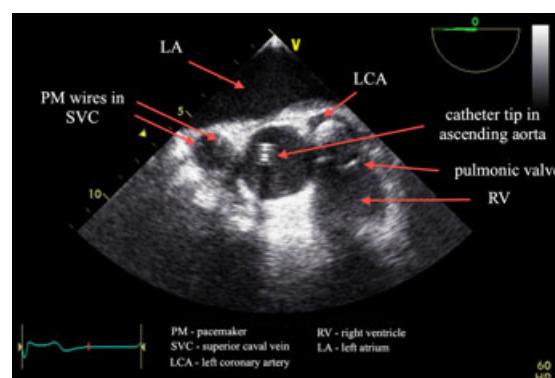


Figure 2. Transesophageal echocardiography, mid-esophageal ascending aortic short-axis view demonstrating catheter tip in ascending aorta about 2.3 cm distal to the aortic valve.



Figure 3. Supine chest radiograph demonstrating intra-aortic position of hemodialysis catheter (arrow); pacemaker (device and wires), endotracheal tube, chest tubes in situ.

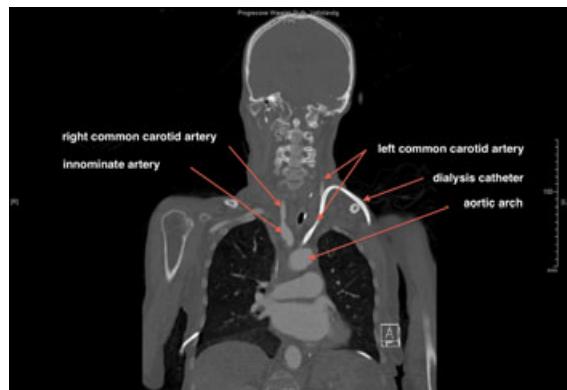


Figure 4. Coronal computed tomography (CT) image demonstrating hemodialysis catheter in left common carotid artery (arrow).

the aortic valve within the lumen of the ascending aorta, which appeared to be the tip of the dialysis catheter (Figs. 1–3). Evaluation of the neck vessels by ultrasound (Vivid 7) and computer tomography (Philips Healthcare, Best, The Netherlands) (Fig. 4) demonstrated a primary placement of the catheter in the left common carotid artery. The intra-aortic position of the catheter explained the altered flow pattern of the dialysis unit with very low-outflow (5 mmHg) and high-inflow pressures (230 mmHg) as well as the altered mental status and neurologic changes during and after renal replacement therapy. The catheter was surgically removed and the patient recovered without neurologic sequelae. This incident underscores the value of ultrasound guidance for placement of intravascular catheters.