An Uncommon Complication of a Common Procedure

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Abstract Constant, safe and reliable endovascular access is necessary for patients' diagnosis and treatment. Endovascular access is possible with a variety of means, including central and peripheral venous catheters. Peripheral catheterization is an extremely common medical procedure and is considered risk-free or associated with minimal complications. Still potentially serious complications can occur. Authors describe a rare case of peripheral catheter migration at left pulmonary artery in an immunosuppressed patient.

Keywords Catheter tip · Migration · Emboli · Peripheral venous

Image

A 61-year-old man became febrile on the 8th postoperative day following renal transplantation from a deceased donor, ($T=37.3^{\circ}\text{C}$). On clinical examination, he presented sensitivity and hardness at a 16 French Gauge peripheral venous catheter (PVC) insertion place in the right cephalic vein. The change was copious due to local inflammation, and catheter was extracted with a fraction of its tip. The tip was not traceable by palpation. The patient remained febrile ($T=37.4^{\circ}\text{C}$) but local hardness and pain subsided. Laboratory tests were unremarkable. Two days later, the patient had a routine chest X-ray after hemodialysis (Fig. 1). X-ray showed a linear radioopaque shadow of the left lung (Fig. 2), consistent with migration of catheter tip upward into a segmental branch of

Fig. 1 Chest X-ray demonstrating peripheral venous catheter at left pulmonary artery

the left pulmonary artery. No further intervention was decided. Fever was attributed to urinary tract infection related to Foley catheter and was treated by antibiotics. At 1-month follow-up visit, the patient remains asymptomatic and normoxic.

A variety of complications including the relatively common phlebitis, infections and extravasation of fluids and uncommon ones like migration are connected to venous

Fig. 2 Magnification demonstrating the precise embolization site

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catheterization [1]. While complications in terms of severity and frequency are vigorously described in central venous catheters [2], data are sparse other peripheral venous catheter. The risk of serious complications in catheter embolism is unknown. High-risk anatomic regions include the intracardiac area, while risk is lower in the vena cava, and the lowest if the embolus is located in the pulmonary artery. Catheter embolism may remain undiagnosed for a prolonged period and can be found incidentally. If conservative management is opted, a sequential radiographic follow-up is essential even in asymptomatic patients to prevent potentially life threatening complications in future from catheter further migration. In case removal is considered necessary based on symptoms or deterioration of blood gases, available methods include snares,

biopsy forceps, baskets, pigtail catheters and surgical intervention [3].

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