

中文題目：血液透析管路併發上腔靜脈與右心房交界處之心內膜炎

英文題目：Superior vena cava-right atrium junction endocarditis in a patient undergoing maintenance hemodialysis: A case report

作者：蘇意澤，王明誠

服務單位：成功大學醫學院附設醫院內科部

**Introduction:** Right-sided infective endocarditis (IE) is often associated with intravenous drug use, intra-cardiac devices, and central venous catheters. The most commonly involved location is the tricuspid valve. We present a case of IE with atypical involvement at the superior vena cava (SVC)-right atrium (RA) junction in a patient undergoing maintenance hemodialysis.

**Case presentation:** This 33-year-old female has a history of poorly-controlled type 1 diabetes mellitus, old right thigh fracture status post hip screw fixation, and end-stage renal disease undergoing maintenance hemodialysis via tunneled hemodialysis catheter in the right internal jugular vein. She presented with fever, chest tightness, and poor appetite. Physical examination revealed painful erythema around the exit site of the dialysis catheter. Auscultation revealed scattered focal crackles and mid-systolic murmur at the left lower sternal border. Two separate blood cultures soon yielded oxacillin-sensitive *Staphylococcus aureus* (OSSA), *Enterobacter cloacae* complex, and *Klebsiella pneumoniae*. Transthoracic echocardiography revealed a vegetation at the posterior leaflet of the tricuspid valve, while transesophageal echocardiography (TEE) showed another vegetation at the SVC-RA junction (Fig. 1). Diagnosis of IE was thus established (2 major Duke criteria fulfilled). Intravenous antibiotics were administered with immediate removal of dialysis catheter. During hospitalization, the right-sided IE complicated with necrotizing pneumonia involving the right middle lobe and right lower lobe, and multiple septic emboli in bilateral lower lobes (Fig. 2). In addition, the chest computed tomography (CT) showed a tiny abscess in the right hepatic subcapsular region. Abdominal CT showed a lobulated fluid collection (about  $6.0 \times 5.2 \times 2.4$  cm) with peripheral enhancement in the vicinity of right greater trochanter (Fig. 3). Ultrasound-guided drainage revealed pus-like fluid, and further culture yielded the same pathogen, OSSA, as that retrieved from blood culture. The duration of antibiotics therapy was extended to 8 weeks, and the necrotizing pneumonia, subcapsular hepatic abscess, and abscess near the right greater trochanter all resolved gradually.

**Discussion:** SVC-RA junction endocarditis is mostly, though not exclusively, reported in patients with chronic indwelling central venous catheters, especially in patients undergoing hemodialysis. Such association may be due to the catheter tip close to the SCV-RA junction. The ESC guideline suggests TEE may not be required in cases with isolated right-sided native-valve IE with good transthoracic echocardiography (TTE) quality. However, sometimes vegetation at the SVC-RA junction may be difficult to be visualized on TTE.

**Conclusion:** When there's dialysis catheter implanted with tip near the right atrium, SVC-RA junction endocarditis is a rare, but well documented, complication that should be kept in mind, and such complication frequently require TEE for diagnosis

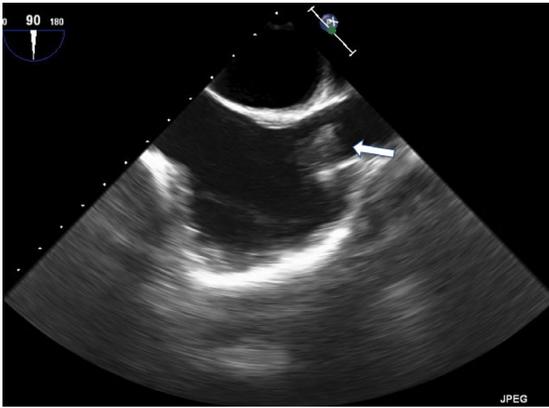


Figure 1. The bicaval view of TEE reveals a  $1.76 \times 1.12$  cm vegetation at the junction of SVC and RA (arrow)

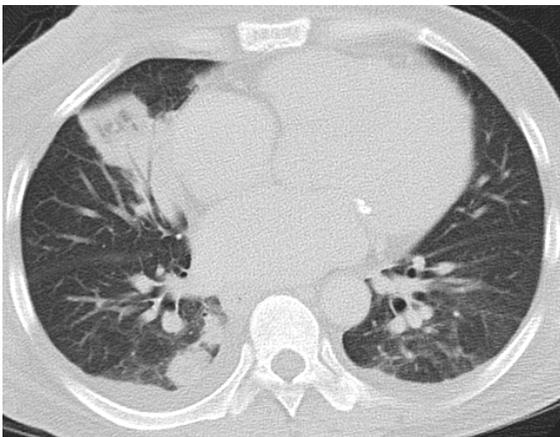


Figure 2. Chest CT reveals necrotizing pneumonia involving right middle lobe and nodular septic emboli in the bilateral lower lobes.

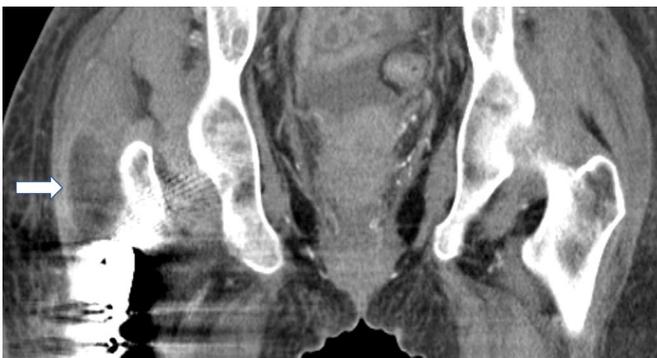


Figure 3. Abdominal CT reveals a lobulated abscess about  $6.0 \times 5.2 \times 2.4$  cm in the vicinity of right greater trochanter (arrow).