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IMAGES

Left-sided superior vena cava

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A 61-yr-old woman with known Turner syndrome (XO syndrome) and obesity, who was not previously diagnosed with cardiac disease except for an asymptomatic right bundle branch block, was postoperatively admitted to the intensive care unit after a planned hemicolectomy for ascending colon carcinoma. She subsequently developed septic shock with acute renal failure and was indicated for renal replacement therapy. The authorized legal representative gave written consent for publication of the images.

A central venous catheter was placed uneventfully via the right-sided internal jugular vein under ultrasound guidance. The correct position was confirmed with endovascular electrocardiography. Then, a 12F, 25-cm double-lumen Shaldon dialysis catheter (Arrow, Teleflex Medical GmbH, Fellbach, Germany) was inserted via the left-sided internal jugular vein without any problems and advanced maximally and fixated. Both lumens could be easily aspirated. The position of the Shaldon catheter was then checked by chest *x-ray*, which projected left to the cardiac contour. The catheter was initially suspected to be malpositioned but turned out to be situated in a vascular variant. Subsequent computed tomography and echocardiography confirmed that the right-sided superior vena cava emptied into the right atrium, whereas the left-sided superior vena cava showed typical drainage into the markedly dilated coronary sinus. This dilation was responsible for the left-sided widening of the cardiac contour (Figure). Both vessels were completely separate. Although an accessory left-sided superior vena cava is the most common malformation of the venous system, it occurs only rarely with an incidence of 0.3–0.5% in otherwise cardiac-healthy individuals.[1,2]

Because of the difficult vascular status in the patient, we decided to leave the Shaldon catheter *in situ* and used it subsequently for continuous renal replacement therapy (CRRT) without any catheter-related complications. Twenty one days after starting CRRT, the patient developed a new septic episode. Unfortunately, she died with multiorgan failure despite maximal therapeutic efforts. The postmortem examination confirmed that

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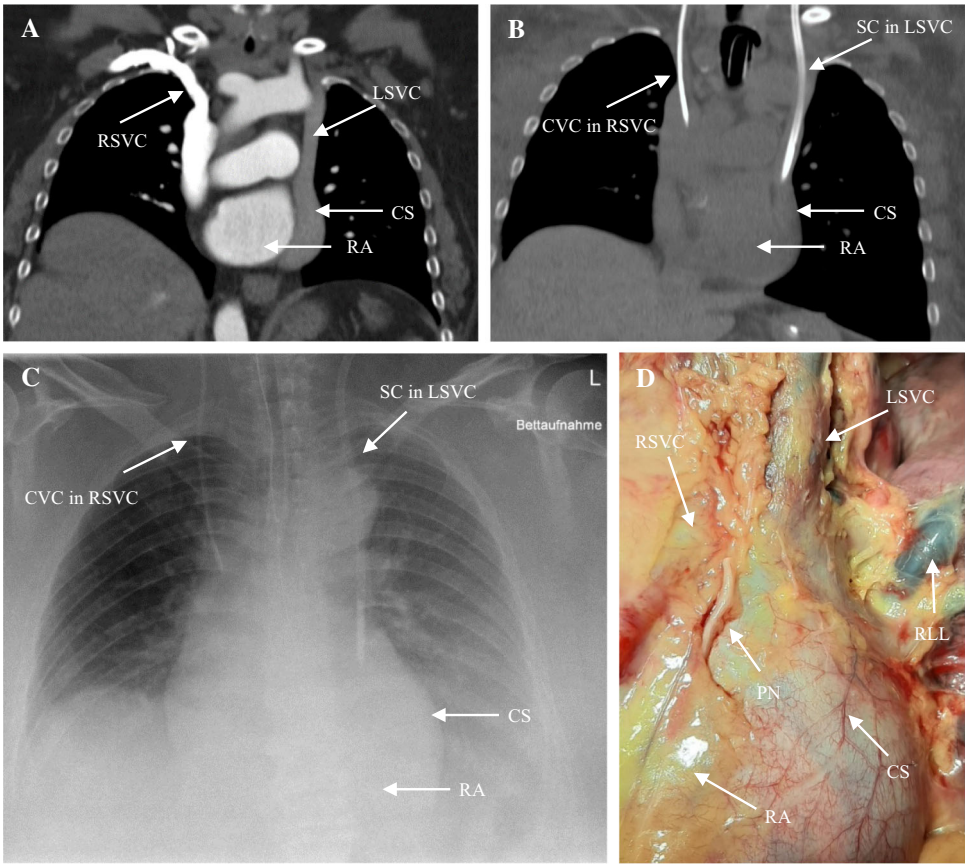

Figure Panel A: Computed tomography reconstruction with contrast medium. Panel B: Computed tomography reconstruction without contrast medium. Panel C: Chest *x-ray* with inserted central line in the right-sided superior vena cava and Shaldon catheter in the left-sided superior vena cava. Endotracheal tube in place. Minor pleural effusion on the left side. Panel D: Pathologic macroscopic findings.
CVC = central venous catheter; CS = coronary sinus; LSVC = left-sided superior vena cava; PN = phrenic nerve; RA = right atrium; RLL = root of left lung; RSVC = right-sided superior vena cava; Sc = Shaldon catheter

cause of death was global heart failure due to acute bilateral pulmonary artery embolism.

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