

Multimodality imaging of persistent left superior vena cava and an absent right superior vena cava in a patient with dextrocardia

Sağ süperiyör vena kavanın olmadığı dekstrocardili bir hastada persistan sol süperiyör vena kavanın çoklu görüntüleme ile gösterilmesi

Persistent left superior vena cava (PLSVC) is relatively rare but is one of the most common congenital anomalies of the systemic venous return, occurring in 0.3% to 0.5% in the general population. About 12% of those are accompanied by congenital heart abnormalities including atrial and ventricular septal defect, aortic coarctation, transposition of the great vessels and Tetralogy of Fallot. Although PLSVC is often associated with a normal right side venous drainage, PLSVC with an absent right superior vena cava (RSVC), known as "isolated PLSVC", is an extremely rare condition.

A 24-year-old man was admitted to our outpatient clinic for routine evaluation. Heart sounds were heard on the right. Two-dimensional transthoracic echocardiography revealed dextrocardia and dilated coronary sinus (CS) (Fig. 1A, Video 1A). To clarify this pathology, we performed two and three-dimensional transesophageal echocardiography (2D and 3D TEE), and computed tomography (CT). Four-chamber view of 2D TEE showed a small right atrium due to a different shape of interatrial septum (Fig. 1B, Video 1B). Two-chamber view of 2D TEE demonstrated dilated CS (Fig. 1C, Video 1C). 3D TEE full-volume image after cropping showed PLSVC and dilated CS (Fig. 1D, Video 1D). Colored subvolume (Fig. 2A, B), colored three-dimensional volume rendered (Fig. 2C) and oblique sagittal MPR CT images (Fig. 2D) also revealed PLSVC and dilated CS. Here we report a case of PLSVC with an absent RSVC resulting in a giant CS in a patient with dextrocardia. Multimodality imaging can help in better diagnosing this condition.

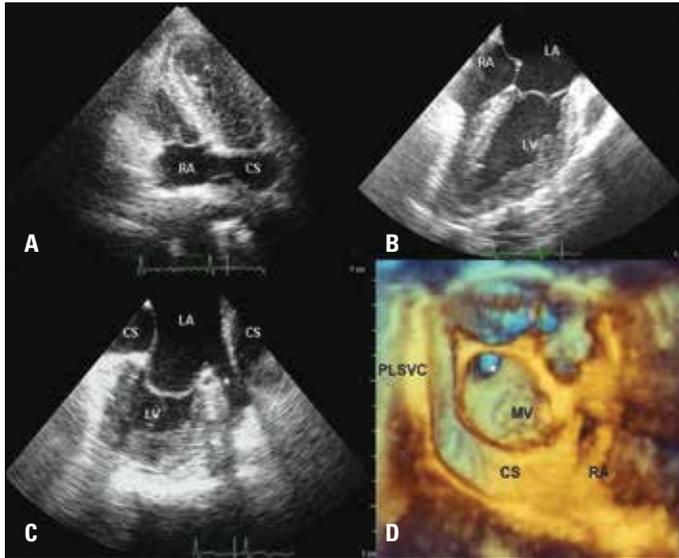


Figure 1. 2D TTE images of dextrocardia and dilated CS (A), 2D TEE four-chamber view of small right atrium (B), two-chamber view of dilated CS (C), 3D TEE full-volume image after cropping showed PLSVC and dilated CS (D)

2D - two dimensional, CS - coronary sinus, LA - left atrium, LV - left ventricle, MV - mitral valve, PLSVC - persistent left superior vena cava, RA - right atrium, TTE - transthoracic echocardiography, TEE - transesophageal echocardiography, *, left atrial appendix

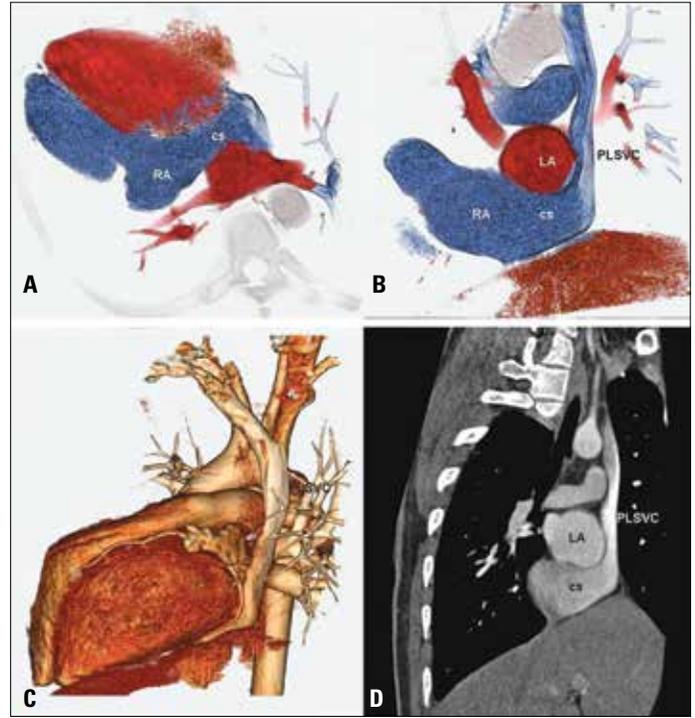


Figure 2. Colored subvolume (A, B), colored three-dimensional volume rendered (C) and oblique sagittal MPR CT images (D) of PLSVC and dilated CS

CS - coronary sinus, CT - computed tomography, LA - left atrium, PLSVC - persistent left superior vena cava, RA - right atrium

ditional volume rendered (Fig. 2C) and oblique sagittal MPR CT images (Fig. 2D) also revealed PLSVC and dilated CS. Here we report a case of PLSVC with an absent RSVC resulting in a giant CS in a patient with dextrocardia. Multimodality imaging can help in better diagnosing this condition.

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Video 1A. Two dimensional transthoracic echocardiography revealed dextrocardia and dilated coronary sinus

Video 1B. Two dimensional transesophageal echocardiography four chamber view showed small right atrium

Video 1C. Two dimensional transesophageal echocardiography two chamber view demonstrated dilated coronary sinus

Video 1D. Three dimensional transesophageal echocardiography full-volume image after cropping showed persistent left superior vena cava and dilated coronary sinus

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