

Anomalous drainage of great cardiac vein in left atrial appendage in a patient of transposition of the great arteries operated by switch operation with Lecompte manoeuvre

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DESCRIPTION

A female child in her early childhood underwent arterial switch operation for dextroposed-transposition of great arteries. She presented with fresh shortness of breath after the operation. Transthoracic echocardiography was done for evaluation of these new symptoms which revealed subaortic membrane causing significant left ventricular outflow tract obstruction (LVOTO) and left ventricular hypertrophy. CT angiography (CTA) was further done for evaluation pulmonary artery and coronaries before surgical LVOTO resection. CTA revealed subaortic membrane (red asterisk—figure 1A) with left ventricular hypertrophy and main pulmonary artery was placed anterior to the ascending aorta (As A) (Lecompte manoeuvre) (figure 1B–D). In addition, coronary venous drainage anomaly was also seen. Anterior interventricular part of great cardiac vein (GCV) (yellow asterisk) was seen draining into left atrial appendage with no tributaries coursing in left atrioventricular groove (figure 1B–D). There was left lateral vein (blue asterisk) coursing in left

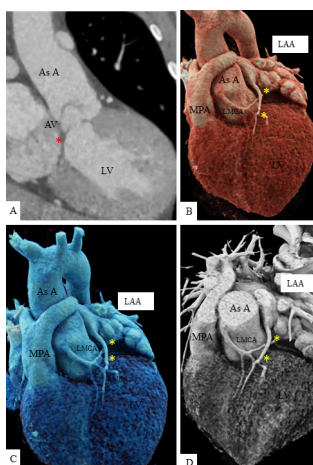


Figure 1 (A) Oblique coronal CT angiography (CTA) maximum intensity projection image shows hypodense thin membrane (red asterisk) below the aortic valve (AV). (B–D) Cinematic volume rendered images show that the main pulmonary artery (MPA) is anterior to ascending aorta (As A) (Lecompte manoeuvre—postarterial switch operation status) and anterior interventricular part of great cardiac vein (yellow asterisk) is draining into the left atrial appendage (LAA).

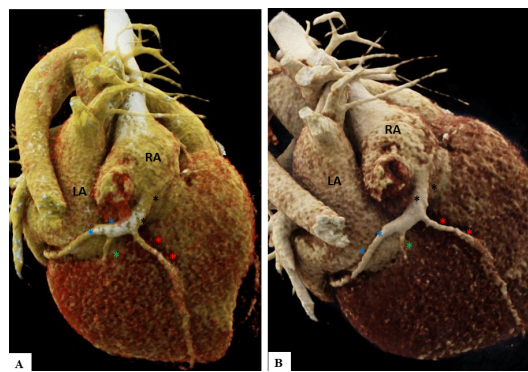


Figure 2 (A, B) Cinematic volume rendered images show left lateral (LA) vein (blue asterisk) coursing in posterior left AV groove and is receiving left posterior ventricular vein (green asterisk) and middle cardiac vein (red asterisk) to form coronary sinus (black asterisk). Coronary sinus is seen draining into right atrium (RA). AV, atrioventricular.

posterior AV groove and is receiving left posterior vein (green asterisk) and middle cardiac vein (red asterisk) to form coronary sinus (black asterisk). Coronary sinus was seen draining into right atrium (figure 2A,B).

GCV is the longest vein in the coronary venous system, which drains in the coronary sinus in most of the individuals. It receives deoxygenated blood from anterior interventricular septum, left ventricular apex, bilateral ventricles (anterior surface) and left atrium before it normally drains into coronary sinus followed by right atrium.¹

Anomalous drainage of the GCV has been described in the literature and occurs into the right atrium or superior vena cava.² But anomalous drainage of GCV into left atrium has been less reported in the literature except for 2–3 case reports to our best knowledge.^{3–5} This anomalous drainage of GCV is important to report to the surgeons or cardiologist before the procedures, which require coronary venous access such as retrograde cardioplegia, radiofrequency ablation of accessory pathways, etc. Further, reporting of this coronary venous anomaly is of utmost importance as in our case, in which the patient is being posted for LVOT resection and may need retrograde cardioplegia during surgery. So, this case report aims to highlight



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the importance of CTA in identifying this rare GCV drainage anomaly and its surgical implication.

Learning points

- ▶ Anomalous drainage of the great cardiac vein is very rare, which can drain into superior vena cava, directly into right atrium and very rarely into left atrium.
- ▶ This anomalous coronary venous drainage is important to report before the procedures, which require coronary venous access.

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Case reports provide a valuable learning resource for the scientific community and can indicate areas of interest for future research. They should not be used in isolation to guide treatment choices or public health policy.

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