

A Case of Isolated Unroofed Coronary Sinus with Right Heart Failure in an Adult

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Unroofed coronary sinus (UCS) is a rare cardiac anomaly in which an abnormal communication occurs between the coronary sinus (CS) and the left atrium (LA). This entity is usually associated with a persistent left superior vena cava (PLSVC) and presents with defects in the wall between LA and CS. In some cases, UCS may cause brain abscess or cerebral emboli that may result from a right to left shunt. However, the diagnosis of that is often difficult because of non-specific clinical manifestations, especially in isolated case. We report a case of isolated UCS accompanied with clinical signs of right side heart failure. A 67-year-old male was admitted for recently developed dyspnea. Physical examination revealed neck vein engorgement. Plain chest radiograph showed cardiomegaly and an increased pulmonary blood flow pattern. Right axis deviation and right bundle branch block was found on ECG. Transthoracic echocardiography showed right atrial and ventricular enlargement, increased blood flow from CS ostium into right atrium (RA). However, there was no evidence of an atrial septal defect (ASD) or an abnormal pulmonary venous drainage. On transesophageal echocardiography, a totally unroofing CS with direct communication to the LA and significant left to right shunt flow were demonstrated. The atrial septum was intact. Cardiac computed tomography showed that unroofed part of CS distal portion and CS opening in RA were 2.6 cm and 2.2 cm in dimension, respectively. In addition, there was no further pathology of the heart structures and the great vessels. Shunt study with isotope revealed left to right shunt and the measured Qp/Qs ratio was 1.9:1. In summary, our patient presented with clinical features of right heart failure. Enlargement of right heart structures and a totally unroofed CS were shown on echocardiography. Through this defect, prominent left to right shunt was seen even in the absence of a true ASD. As the patient refused a surgical correction at that time, he was put on the medical treatment including diuretics to relieve the symptoms.

Which Echocardiographic Method is Best to Quantitate the Epicardial Adipose Tissue?

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Background : According to several studies, epicardial adipose tissue(EAT) can be associated with metabolic syndrome and coronary atherosclerosis. But there was no standard method for measuring EAT up to date. One study revealed good correlation between thickness of EAT of RV free wall by single plane of echo and that measured by corresponding cut of MRI. This method, however, did not reflect the whole amount of epicardial adipose tissue. The current study was designed to identify the best echocardiographic methods reflecting total amount of EAT.

Methods : Sixty subjects(32 women; mean 58±12 yr-old) who underwent 64-slice multidetector computed tomography(MDCT) were consecutively enrolled. All CT scanning was performed one Brilliance CT-64-channel configuration canner(Philips, Cleveland, USA) and axially contiguous 10-mm-thickness sections were obtained from aortic valve to diaphragm level. EAT area was manually traced where CT attenuation score was -50 to -250 in each slice and summed up. In echocardiography, we considered anterior echo-lucent space between linear echo-dense parietal pericardium and epicardium as EAT. EAT thickness was measured at parasternal long-axis, low-parasternal and apical 4-chamber view.

Results : The Table 1 showed the correlation between various thickness of EAT in multiple echo views and the sum of EAT area in multiple planes of MDCT. Among the echo parameters, EAT thickness measured by parasternal long-axis view during diastole correlated best with total EAT areas on MDCT.(r= 0.397, p= 0.002) **Conclusion :** The echocardiographic measurement of thickness of EAT in parasternal long-axis view during diastole was simple, reliable, easily accessible and less harmful method representing amount of EAT in whole heart.

Table 1. Correlation of 2D-echo & MDCT

2D-echo		MDCT	
		r	p
EAT (epicardial adipose tissue)	Parasternal long axis	.397**	.002
	Modified 4-chamber	.348**	.006
	Apical 4-chamber	-.013	.919
	Sum of EAT	.342**	.008