

Finding The Way Around Your Heart: A Case Report of Anomalous Left Coronary Artery With An Inter-Arterial Course

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Background:

- Coronary artery variants are a rare congenital disorder affecting at least 1% of the population.²
- The incidence of abnormal aortic origin of one or more coronary arteries to be approximately 0.64%.³
- Most cases reported are with asymptomatic patients with an incidental finding on CTA or autopsy for sudden cardiac death.
- Coronary artery variant is the second most common cause of sudden cardiac death in young competitive athletes.¹

Case History:

- A 55-year-old African American woman with no known history of ASCAD, MI or CHF presented with chest pain syndrome to the emergency department (ED). She was awoken by an intense, sharp chest pain, 9/10, denied radiation, and pleuritic. She was also short of breath a diaphoresis.
- Chest pain was relieved by sublingual nitroglycerin tablet given upon arrival.
- Family history positive for heart disease, hypertension, congestive heart failure, stroke, MI, sudden cardiac death.
- 20 PPD smoking history, quit smoking in 2012, denied alcohol or illicit drug use.
- Cardiac workup was prompted due to her risk factors of hypertension, hyperlipidemia, diabetes mellitus, obesity and family history.

Examination:

- Afebrile, hypertensive 181/115, tachycardia 101, hemodynamically stable.
- Alert and oriented, lungs clear bilaterally, regular rhythm.
- An EKG revealed sinus tachycardia, with a normal axis, normal conduction, normal ST segment, normal T waves.
- Chest X-Ray single view found no active disease processes with clear lungs and within normal limits.
- CT shown in Figure 3.

Imaging:

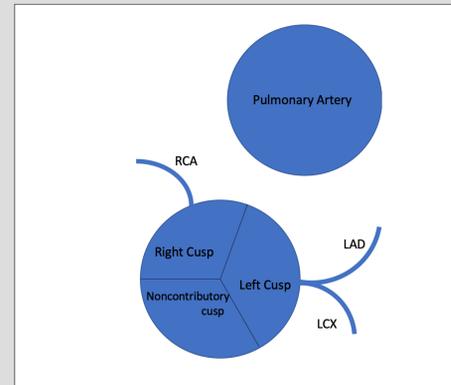


Figure 1: Normal coronary artery with coronary arteries. RCA, right coronary artery, LAD, left anterior descending, LCX, left circumferential.

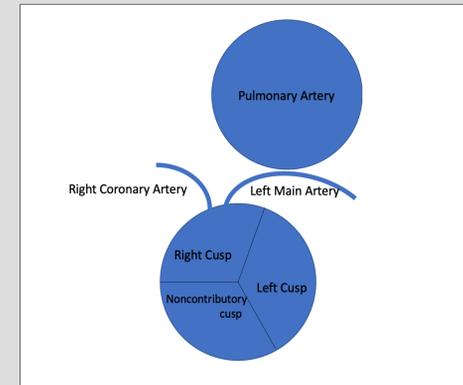


Figure 2: Patient's coronary artery path with common origin of the contralateral sinus with an inter-arterial course.

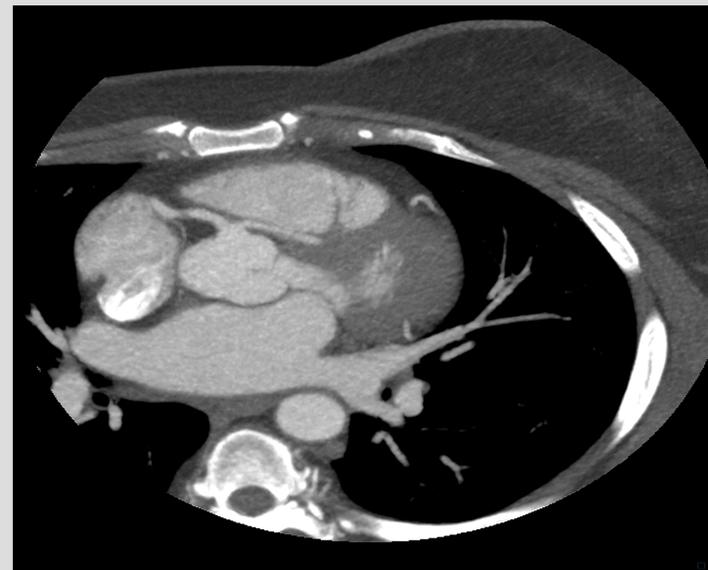


Figure 3: Patient's CT showing anomalous coronary artery with inter-arterial course.

Discussion:

- Patient was diagnosed with anomalous coronary arteries at Baptist Health Madisonville and was seen by a congenital heart specialist in Lexington, KY.
- This case presented symptomatically with angina and at an older age of 55 years old.
- There are four ways to describe the ectopic origin of the left main coronary artery from the right sinus of Valsalva detailing the path of the variant artery in relation to the aorta and pulmonary artery: anterior, septal, posterior/retroaortic, or inter-arterial, thought to be the rarest variant.⁴
- Management is controversial and patient dependent. Common surgical repair include coronary bypass graft placement, stenting, or unroofing procedure.
- Patient decided on medical management with anti-hypertensives, was advised to limit strenuous exercise and aware of sudden cardiac death.

Conclusion:

- This is an interesting and rare coronary artery variant as it has a common origin of the contralateral sinus and follows an inter-arterial path.
- Patient appears to be doing well without repeated episode of angina at this time.

References:

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