

55. **RARE PRESENTATION OF MYOCARDIAL ISCHEMIA IN A PATIENT WITH AN ANOMALOUS RIGHT CORONARY ARTERY**

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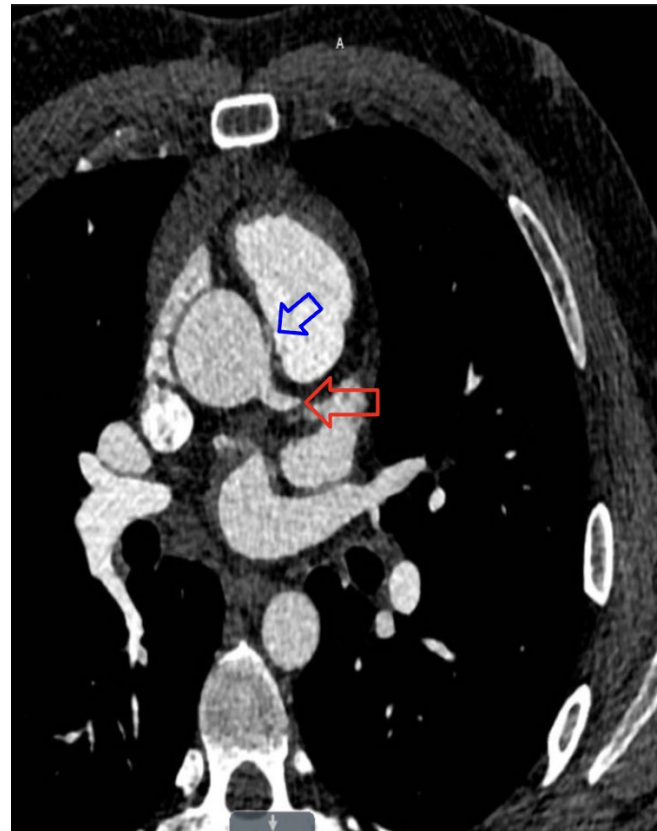
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BACKGROUND: Coronary anomalies are coronary patterns that occur rarely in the general population. The most common type of these anomalies is the emergence of the right coronary artery (RCA) from the left coronary sinus, which in most patients is either asymptomatic or leads to sudden cardiac death (SCD). **THE CASE:** This case report presents the case of a 35-year-old male patient who had an inferior ST elevation myocardial infarction (STEMI) for which percutaneous coronary intervention was attempted and failed due to the patient going into cardiac arrest. The patient was subsequently managed medically in the cardiac intensive care unit and followed up outpatient with a cardiologist. The patient experienced symptoms of exertional angina and had a CT angiography of the heart and coronary vessels that identified an anomalous RCA emerging from the left coronary sinus. He was diagnosed with an anomalous RCA with malignant take-off from the left coronary sinus, and subsequent management was surgical with a coronary artery bypass graft (CABG) x1 using the right internal mammary artery (RIMA to RCA). Intraoperatively, the patient was found to have sclerosis of the RCA proximally for about 5cm. The patient did well post-operatively and had no symptoms of exertional angina upon outpatient follow up with both his cardiologist and cardiothoracic surgeon.

CONCLUSION: Most cases of coronary anomalies have been found to be either completely asymptomatic or lead to SCD, especially in young patients, however very few cases in literature identified patients with this anomaly presenting with STEMI such as in this case. Another significant finding in this patient is sclerosis of the RCA, where although some articles propose that anomalous coronary arteries may be more susceptible to atherosclerosis, others conclude that there may be no association; concluding that factors such as intramural course, slit-like origin, and acute angle take-off might be more significantly associated. Moreover, patients with coronary anomalies rarely experience cardiac events solely due to their anomaly, such as with this patient. Finally, this patient's significantly young age at 35 years old is significant given the mean age of patients undergoing CABG being 60.8 years in one cross-sectional study. Current management of symptomatic patients with these anomalies is under debate, with many patients undergoing CABG such as in this case, although one study shows no significant difference in mortality or 10-year survival with surgical intervention despite having higher surgical intervention rates. Percutaneous coronary intervention (PCI) of patients with coronary anomalies has been shown to be difficult or unsuccessful in most studies, although a few cases in literature were successful with tools such as multidetector CT (MDCT). Awareness of these anomalies and their possible presentation, risk factors, and radiologic findings is important especially given their potential for SCD. More research is needed to further elucidate the best treatment options and perhaps even improve the potential for non-invasive interventional techniques such as PCI.

Figure. CT Angiogram of the Heart and Coronary Arteries Showing Emergence of the Left Coronary Artery (Red Arrow) and the Right Coronary Artery (Blue Arrow, Small Vessel) from the Left Coronary Sinus.



Key words: Coronary Vessel Anomalies; Myocardial Ischemia; Coronary Artery Bypass; Coronary Artery Disease (Source: MeSH-NLM).