**MULTIMODALITY IMAGING OF ANOMALOUS RIGHT CORONARY ARTERY WITH INTERARTERIAL COURSE FOUND DURING A NON ST ELEVATION MYOCARDIAL INFARCTION**

**M. Bintvihok**, J. Aoun, M. Almeqdadi, M. Afari, A. Davidoff, L. Tsao

St. Elizabeth's Medical Center, Boston, MA, USA

**Introduction:**An anomalous origin of the coronary artery from the contralateral sinus is a rare phenomenon, occurring in less than 1% of patients undergoing cardiac catheterization. It is the second most common cause of sudden cardiac death (SCD) in young athletes. We present a case of a patient with anomalous right coronary artery (ARCA) who presented with acute myocardial infarction.

**Description of Case:** A 63 year-old gentleman presented with exertional chest pain. Vital signs were notable for blood pressure of 164/57, heart rate of 67 beats-per-minute, and oxygen saturation of 97% at ambient air. Cardiopulmonary examination was unremarkable. Electrocardiogram showed sinus rhythm with no significant ST-T changes. However, troponin t peaked at 0.04 ng/mL (Normal <=0.03). He was diagnosed with acute myocardial infarction and underwent percutaneous coronary intervention of the left anterior descending artery with a drug eluting stent. During coronary angiography, the right coronary artery (RCA) was noted to arise from the left coronary cusp. Cardiac computerized tomography (CT) confirmed an anomalous origin of the RCA from the left coronary cusp with an interarterial course between the aorta and the main pulmonary artery. The patient was discharged, with the plan for an aortocoronary bypass, if he presents with recurrent ischemia.

**Discussion:** Interarterial course of ARCA is associated with myocardial infarction and risk of SCD. The proposed mechanisms of SCD in ARCA include; acute angulation at the ostium of RCA and the left coronary sinus, mechanical compression by the aorta and pulmonary artery during strenuous activity, a slit-like RCA orifice, and intramural stenosis. ARCA may be found during diagnostic procedures performed for symptoms that are related to other conditions. Coronary angiography can visualize the anomalous origin; however, it is invasive and only provided limited information of coronary course. Cardiac CT has excellent spatial resolution and help to determine the course of ARCA.

**Conclusion:** Multimodality imaging such as CT and coronary angiography are important in making the diagnosis.