54 Year-Old Man with an Abnormal Nuclear Stress Test
Erick Avelar, MD, Roberto Cubeddu, MD, Rodrigo Pale, MD, Hiram Bezerra, MD, Ronen Durst, MD, and Wilfred Mamuya, MD, PhD

Clinical History
A 54 year-old asymptomatic man with a past medical history of hypertension, hypercholesterolemia, and peripheral vascular disease in the right arm secondary to a vascular injury had an exercise sestamibi stress test as part of his regular “check up”. He exercised for 10 minutes according to the standard Bruce protocol, stopping due to fatigue. He reached 87% of his maximum predicted heart rate. The myocardial perfusion images demonstrated a clear-cut “diaphragmatic” attenuation artifact, but in addition, there was moderate inferior and inferobasal reversible ischemia at stress, which normalized at rest.

Cardiac catheterization demonstrated an anomalous origin of the right coronary artery (RCA) from the left coronary cusp (LCC) with a possible eccentric 90% stenosis in the ostium and proximal third. Despite multiple views, it was difficult to determine whether the narrowing was due to a true lesion or was secondary to a streaming artifact. The lesion was not completely eradicated by intra-coronary nitroglycerin (Figure 1). The patient was referred for computerized tomographic angiography (CTA) of the coronary arteries for better delineation of the RCA lesion. The CTA confirmed the coronary anomaly seen on the coronary angiogram and, more importantly, defined the potential malignant inter-arterial course of the RCA between the main pulmonary artery and the ascending aorta (Figures 2-3).

Discussion
Right coronary anomaly is a rare condition with an incidence of 0.26%. It can be a benign or potentially serious condition. Prior case reports demonstrate that the malignant type anomalous right coronary artery may even culminate in cardiac arrest or sudden death, the exact mechanism of which is not completely understood.

However, it is postulated that compression of an inter-arterial coronary artery occurs, leading to myocardial ischemia and consequent ventricular fibrillation arrest. Coronary artery bypass graft surgery (CABG) is the most feasible treatment option. This case demonstrates the unique ability of the CTA to easily and definitively define the inter-arterial course of the RCA originating from the left coronary cusp.

REFERENCES