

## Anomalous origin of right coronary artery – rare cause of sudden cardiac arrest in young patient

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**Background:** Although the use of transthoracic echocardiography (TTE) identified the diagnosis of congenital heart disease, coronary artery anomalies (CAA) is more often diagnosed as an incidental finding during workup for ischemic symptoms or sudden cardiac arrest (SCA) in healthy young people. Anomalous origin of the right coronary artery (AORCA) is a congenital anomaly of epicardial coronary arteries and is classified by its origin, course and termination. We report cardiac collapse due to AORCA in a healthy young man.

**Case:** A 27-year-old healthy male suffered sudden collapse while playing soccer with his friend. He received with bystander cardiopulmonary. Ventricular fibrillation was detected and successfully resuscitated with defibrillation by paramedics. He had family histories of variant angina in his father and sudden cardiac death due to variant angina in his uncle. His TTE finding was normal except for akinesia of the basal inferior wall. Coronary computed tomography angiography showed AORCA from the left coronary cusp with interarterial course and total occlusion of RCA from the ostium to proximal portion. (Figure 1-A) Conventional coronary angiography (CAG) confirmed AORCA with chronic total occlusion of RCA at the ostium and grade 2 collateral flow from LCX to RCA. (Figure 1-B) Surgical repair was performed. RCA originated from the left coronary cusp. However, it was impossible to translocate the true RCA ostium because the interarterial segment of the RCA completely degenerated. (Figure 1-C) Side-to-side anastomosis was performed by pulling the most proximal portion of patent RCA to the right coronary cusp. (Figure 1-D) After surgery, the patient is stable without any ischemic symptoms or cardiac arrest event.

**Conclusion:** We report a case of AORCA with occlusion of the proximal RCA. Because the proximal RCA was occluded, side-to-side anastomosis was thought to be an end to side anastomosis, which is similar to the neo-ostial formation.



Figure 1-A

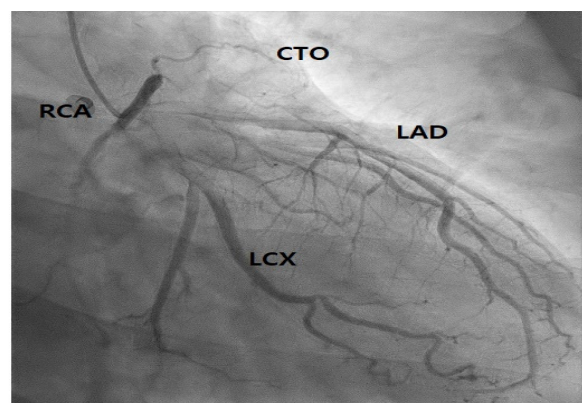


Figure 1-B



Figure 1 -C

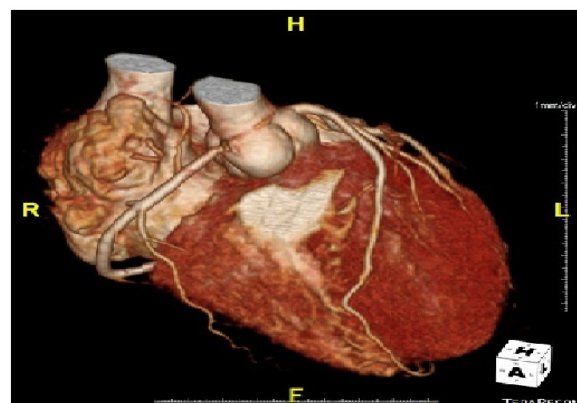


Figure 1-D