



TCT@ACC-i2: Invasive and Interventional Cardiology

ANOMALOUS RIGHT CORONARY ARTERY FROM THE LEFT SINUS OF VALSALVA: PATHOPHYSIOLOGICAL MECHANISMS STUDIED BY INTRAVASCULAR ULTRASOUND, CLINICAL PRESENTATIONS AND RESPONSE TO STENT ANGIOPLASTY

Poster Contributions

Poster Sessions, Expo North

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Background: The anomalous origin of the right coronary artery from the opposite sinus of Valsalva with intramural aortic course (R-ACAOS) has been singled out as being associated with both sudden cardiac death (SCD) and cardiac symptoms, including chest pain (CP), dyspnea and syncope. During the last 13 years, our group has prospectively studied by intravascular ultrasound (IVUS) a continuous series of patients carrying R-ACAOS, in order to correlate the detailed coronary functional anatomy with clinical presentations, and the response to stent angioplasty .

Methods: 63 patients aged 12 to 72 y/o were studied by IVUS, after being found to have R-ACAOS during diagnostic workup (screening echo [1 pt], CTA [19 pts], coronary angiography [43 pts]) for one or more clinical presentations: CP (49 pts), dyspnea (33 pts), syncope (15 pts), asymptomatic (7 pts). No patient had suffered a sudden cardiac arrest. IVUS of the anomalous RCA was carried out during coronary angiography by using a custom-made 6 Fr guiding catheter. Combined functional class (CFC) score definition: CP, dyspnea, syncope (0-3 points for each).

Results: All patients were found to have a proximal intramural course, inside the aortic media, with variable degrees of hypoplasia and lateral compression (with systolic phasic increment). In 36 patients, stent angioplasty was carried out because of significant stenosis, defined as an CFC Score >5, area of stenosis >60%, and/or minimal diameter <1.3 mm. Adequate stent delivery and resolution of intramural stenosis by IVUS was accomplished in all 36 pts. At an average 29 month follow-up no patients had SCD, while there was a statistically significant reduction in symptoms from a mean CFC score of 2.75 to 0.8 ($p<0.001$) in the stent angioplasty group and a non-significant reduction in the medical treatment group from 2 to 0.8 ($p=0.06$). Five patients (14%) developed in-stent restenosis, which were managed with in-stent PTCA, resolving the stenosis in all but one patient, who underwent aortocoronary bypass to RCA.

Conclusions: In a large, continuous series of adults patients with R-ACAOS, we found that treatment of the intramural RCA segment with stent angioplasty was accompanied by symptomatic improvement.