Separate coronary arteries originating from the right sinus of Valsalva

Niezależne odejście tętnic wieńcowych od prawej zatoki Valsalvy

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Abstract

Three separate coronary arteries originating from the right or left coronary sinus of Valsalva are exceedingly rarely seen coronary anomalies. The clinical course depends on the site of origin and the anatomical trace. We report a case with all coronary arteries arising from the right sinus of Valsalva with different ostia.

Key words: coronary anomaly, origin, right sinus of Valsalva

Case report

A 55-year-old man was admitted to the outpatient clinic with stable angina pectoris for four years. The past medical history was unremarkable. His blood pressure was 140/90 mm Hg and his fasting blood glucose was 234 mg/dl. The electrocardiography showed normal findings. The treadmill exercise was positive, so we performed coronary angiography. We observed all coronary arteries arising from the right sinus of Valsalva with different ostia. The three separate ostia for each coronary artery were confirmed by injection of contrast material into the right sinus of Valsalva (Figures 1-3). The aortogram did not demonstrate any arteries arising from the left sinus of Valsalva. All coronary arteries were clear of plaques.

Discussion

Coronary artery anomalies were found in 1-1.3% of patients undergoing coronary arteriography [4]. These anomalies include anomalies of origin and distribution (87%) and coronary artery fistulae (13%) [4]. Coronary anomalies are usually discovered as incidental findings at the coronary angiography [4]. Eighty-one percent of anomalies are benign in character including separate origin of the left anterior descending (LAD) and circumflex (CX) arteries from the left sinus of Valsalva, ectopic origin of coronary angiography. We observed all coronary arteries arising from the right sinus of Valsalva with different ostia. The three separate ostia for each coronary artery were confirmed by injection of contrast material into the right sinus of Valsalva (Figures 1-3). The aortogram did not demonstrate any arteries arising from the left sinus of Valsalva. All coronary arteries were clear of plaques.
the CX from the right sinus of Valsalva, ectopic coronary origin from the non-coronary sinus of Valsalva, anomalous coronary origin from the ascending aorta, absent CX, intercoronary communications, and small coronary artery fistulae [4]. Ninety percent of the anomalies are regarded as serious because of the association with angina pectoris, myocardial infarction (MI), syncope, cardiac arrhythmias, congestive heart failure, or sudden death [4-8], which include ectopic coronary origin from the pulmonary artery, ectopic coronary origin from the opposite aortic sinus, single coronary artery and large coronary fistulae.

The clinical course depends on the site of origin and the anatomical trace. Coronary anomalies whose trace is among the aortic and the pulmonary trunk are especially associated with increased mortality and morbidity, depending on the myocardial area at risk [2]. The dynamic compression during systole may compromise the coronary blood flow [2]. So we should be very cautious with an anomalous origin of the left coronary artery until we exclude the interarterial course between the aortic root and pulmonary trunk. This may be easily done with the use of computed tomography angiography, which has emerged as the preferred method for depicting the exact course of coronary anomalies. It seems to be especially important in the context of a positive exercise treadmill test. Besides abnormal coronary ostium, specifically a narrowed, slit-like coronary orifice,

between the aortic root and the pulmonary trunk [9], which supports further investigation for patients with coronaries originating from another coronary sinus with positive treadmill exercise test. Besides abnormal coronary ostium, specifically a narrowed, slit-like coronary orifice,

between the aortic root and the pulmonary trunk [9], which supports further investigation for patients with coronaries originating from another coronary sinus with positive treadmill exercise test. Besides abnormal coronary ostium, specifically a narrowed, slit-like coronary orifice,
and the initial coronary artery course including an acute angle take-off with an aortic intramural course, may cause arrhythmia, MI and sudden cardiac death [10].

To the best of our knowledge, three separate coronary arteries originating from the right coronary sinus of Valsalva are seen exceedingly rarely, and we only found 38 cases with this anomaly in the literature.

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