

Aberrant origin of the right ventricular coronary artery: A case report

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This case describes a 45-year-old man with an abnormal origin of the right ventricular branch of the right coronary artery originating from a separate ostium in the right coronary sinus. Coronary arteries with

abnormal origin constitute roughly 0.64% to 1.2% of all the representations encountered during coronary angiography. We suggest that the presence of such a vessel must be shown in patients undergoing coronary angiography and/or cardiac surgery.

Key Words: Aberrant origin; Coronary artery

Aberrant origin of coronary arteries is not an uncommon finding on cardiac catheterization, at the time of surgery or on postmortem examination.

CASE PRESENTATION

A 45-year-old man was admitted to our cardiology department after experiencing chest pain during exercise that was localized to the left inframammary area. He reported smoking 20 cigarettes per day since the age of 20. Results of the physical examination and chest x-ray were normal. Electrocardiography showed T-wave inversions in the leads of D2, D3, aVF and V5-6. Transthoracic two-dimensional echocardiography showed apical hypokinesis of the left ventricle. Coronary angiography in multiple projections was performed using Judkin's technique. The left coronary artery injection showed multiple stenoses in the left anterior descending (LAD) and circumflex (Cx) coronary arteries. After the right coronary artery (RCA) injection (Figure 1), an abnormal right ventricular branch of the RCA was shown to originate from a separate ostium in the right coronary sinus (Figure 2). There were multiple stenoses in both the RCA and its right ventricular branch.

DISCUSSION

Anomalous origins of the coronary artery are uncommon. Knowledge of those variations could be important with regard to invasive catheter treatment or bypass surgery. Certain types of these anomalies (ostial lesions, passage of a major artery between the walls of the pulmonary trunk and aorta, and myocardial 'bridges') may be more likely to produce ischemia with subsequent myocardial infarction (1). Coronary arteries with abnormal origin constitute roughly 0.64% to 1.2% of all the representations encountered during coronary angiography. Aberrant origin of the right ventricular branch of the RCA from a separate ostium is a rare congenital abnormality (2).

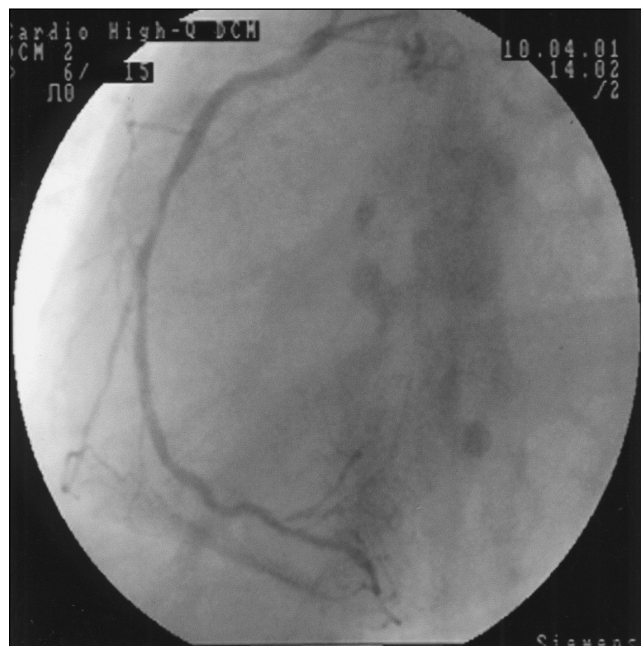


Figure 1) Right coronary artery at the left anterior oblique projection

The most commonly seen congenital coronary anomaly is the abnormal take-off of the Cx from the right coronary sinus or the RCA (1).

During the RCA injection, the absence of a right ventricular branch led us to find another ostium in the right coronary sinus. The potential importance of this artery is demonstrated by the case in which important collateral flow was provided by it to major coronary arteries beyond the area of stenoses (3). Other situations in which knowledge of the existence of this

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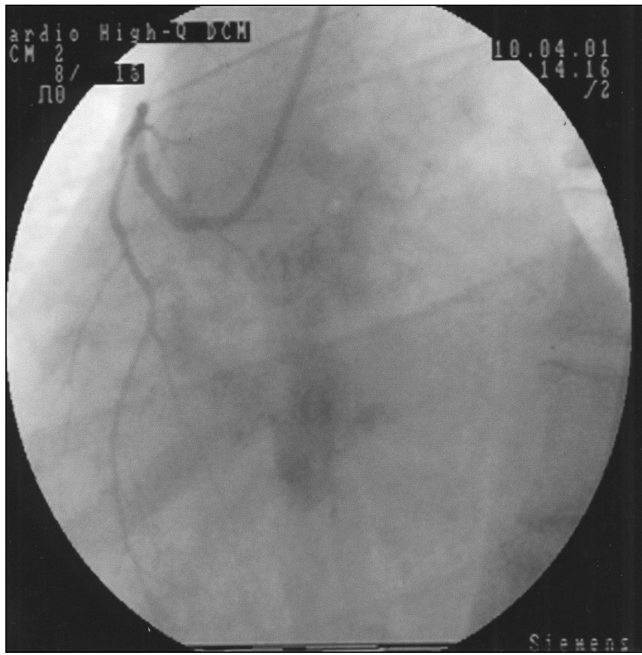


Figure 2) The right ventricular branch of the right coronary artery originating from a separate ostium in the right coronary sinus at the left anterior oblique projection

anomalous vessel could be important include cardiac surgery, during which failure to recognize this vessel could result in failure to assure perfusion of significant areas of the myocardium (4). It is possible that significant obstruction of this artery that goes unrecognized and unbypassed in a patient felt to be otherwise completely revascularized could result in residual and confusing symptoms (4).

CONCLUSION

We suggest that the presence of such a vessel must be shown in patients undergoing coronary angiography and/or cardiac surgery.

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