A coronary anomaly

H.J.M. Braat

Figure 1. The circumflex artery arising from the right sinus of Valsalva. The RCA is seen as well.

Figure 2. The circumflex artery selectively filmed coursing behind the aorta.

Figure 3. The circumflex artery filmed from the right coronary artery view.

Coronary anomalies occur in up to 1.5% of the population who undergo coronary angiography because of symptoms.^{1,2} Numbers concerning coronary anomalies in the general population are less clear.

A 58-year-old man with documented acute coronary syndrome was admitted to our coronary care unit. Besides hypertension he had no additional risk factors for coronary artery disease. Just over one month ago he had an anterior wall myocardial infarction for which he was treated conservatively. No primary percutaneous coronary intervention was performed because of a delay of over 12 hours.

An ultrasound carried out after the infarction showed a moderately decreased left ventricular

function with hypokinesia and akinesia in the antero-septal region. On bicycle testing a good exercise tolerance was seen without symptoms or signs of ischaemia. On myocardial perfusion scintigraphy an ejection fraction of 38% was measured, with an end-systolic volume of 120 ml. Furthermore akinesia of the apex and antero-septum and hypokinesia in the septum and inferior wall were seen.

The ECG on admission now, taken during chest pain, was unchanged compared with his discharge ECG. During hospitalisation his troponin T rose to 0.03 ng/ml while the creatine kinase and creatine kinase-myocardial band level did not increase. A coronary angiogram was carried out because of an acute coronary syndrome in a patient recently diagnosed with a dilated ischaemic cardiomyopathy, and is shown in figures 1 to 3.

Figure 1 shows the right coronary artery (RCA) and the right circumflex (RCX) arising from the right aortic sinus, and figures 2 and 3 show the right circumflex (RCX) passing posteriorly from the aorta.

H.J.M. Braat

Onze Lieve Vrouwe Gasthuis, Amsterdam, the Netherlands

Correspondence to: H.J.M. Braat
OLVG Amsterdam, PO Box 95500, 1090 HM Amsterdam,
the Netherlands
E-mail: h.j.m.braat@olvg.nl

What is remarkable is that the circumflex artery originates from the right sinus of Valsalva and runs retrogradely from the aorta. Distally the RCX (MO1 and MO2) has significant disease. The left anterior descending branch is occluded and only partially retrogradely filled by a large first diagonal artery. The RCA shows only wall irregularities. Before a decision concerning revascularisation is made, an MRI will be done to test viability in the apex and anterior wall.

From all known coronary anomalies the RCX arising from the right sinus of Valsalva is the most common.³ It is generally believed to be a benign condition, but cases have been described in which a non-diseased circumflex coronary artery arising from the right sinus of Valsalva running behind the aorta causes ischaemia.⁴

In conclusion, our patient has severe coronary artery disease and as shown an anomalous origin and course of the circumflex coronary artery. This anomaly is not extremely rare and is of no significance in choosing optimal therapy for our patient; however it remains an unusual finding. ■

References

- 1 Baltaxe HA, Wixon D. The incidence of congenital anomalies of the coronary arteries in the adult population. *Radiology* 1977;**122**: 47-52.
- 2 Click RL, Holmes J Jr, Vliestra RE, et al. Anomalous coronary arteries; location, degree of atherosclerosis and effect on survival: a report from coronary artery study. *J Am Coll Cardiol* 1989;**13**: 531-7.
- 3 Angelini P. Normal and anomalous coronary arteries: definitions and classification. *Am Heart J* 1989;**117**:418-34.
- 4 Tayler AJ, Byers JP, Cheitlin MD, Virmani R. Anomalous right or left coronary artery from the collateral coronary sinus: "high risk" coronary arteries in the initial coronary artery course and heterogeneous clinical outcomes. *Am Heart J* 1997;**133**:428-35.

In this section a remarkable 'image' is presented and a short comment is given.

We invite you to send in images (in triplicate) with a short comment (one page at the most) to Bohn Stafleu van Loghum, PO Box 246, 3990 GA Houten, e-mail: l.jagers@bsl.nl.

'Moving images' are also welcomed and (after acceptance) will be published as a Web Site Feature and shown on our website: www.cardiologie.nl

This section is edited by M.J.M. Cramer and J.J. Bax.