

Images in cardiovascular medicine

Unusual echocardiographic aspect of the right coronary artery

Douglas Skouse, Roberto Mancini, Luigi Piatti, Pierfranco Ravizza, Massimo Pozzoli, Mario Bossi

Department of Cardiology, A. Manzoni Hospital, Lecco, Italy

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Address:

Dr. Douglas Skouse

Dipartimento di
Cardiologia
Ospedale A. Manzoni
Via dell'Eremo, 9/11
23900 Lecco
E-mail: d.skouse@
ospedale.lecco.it

A 74-year-old woman with non-typical chest pain was admitted to our department for cardiac evaluation.

In her past medical history: systemic hypertension, hyperlipidemia, deep vein thrombosis. She had been recently hospitalized for an episode of loss of consciousness preceded by chest pain and had been submitted to tilt test, venous ultrasonography and bicycle ergometry which were all negative.

Cardiac auscultation was negative; a transthoracic two-dimensional echocardiographic study was suggestive of mild dilation of the right sinus of Valsalva.

Considering her recent medical history a transesophageal echocardiogram was performed and showed a cavity originating from the right coronary sinus (Figs. 1 and 2), with mainly a diastolic blood flow (Fig. 3).

Coronary angiography showed a funnel-shaped extroversion of the right sinus

of Valsalva which proceeded in a winding right coronary artery measuring 3.5 mm at the origin (Fig. 4). The rest of the coronary tree was absolutely normal.

Data on coronary artery anomalies are still rather confusing: the real incidence varies from 0.3% (in the necropsy series) to 5.6% (in the angiographic series) but these numbers are actually afflicted by entry biases and lack of clear diagnostic criteria.

Such anomalies have been correlated with chest pain, sudden death, syncope, dyspnea, ventricular arrhythmias, cardiomyopathy, and myocardial infarction. In particular, secondary myocardial ischemia and an increased risk of fixed coronary atherosclerotic disease are expected in case of coronary ectasia such as the one depicted in our case¹⁻³.

Reports at our disposal suggest that coronary anomalies can be lethal, often during or shortly after strenuous physical

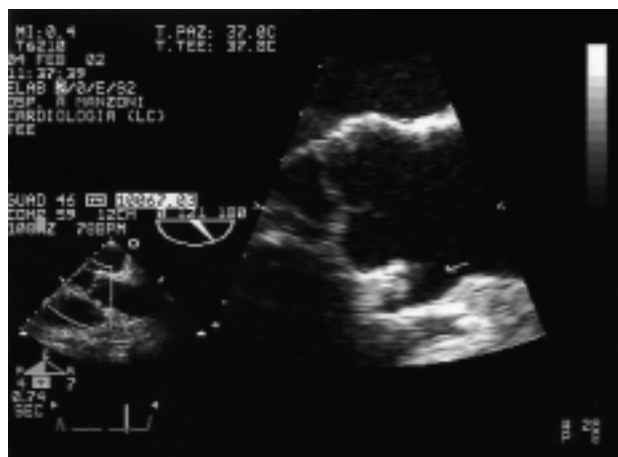


Figure 1. Transesophageal long-axis view of the aortic root.

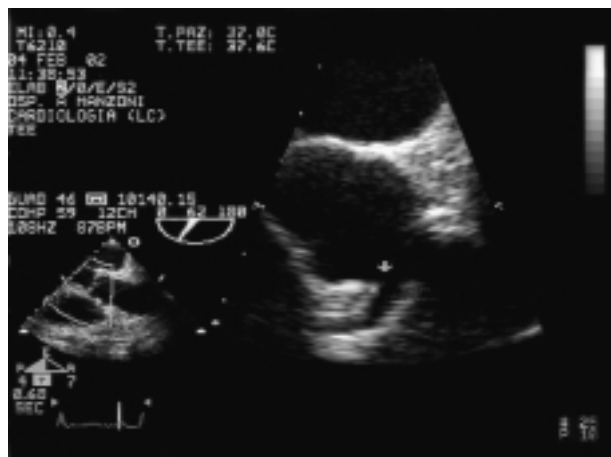


Figure 2. Modified transesophageal short-axis view of the aortic root.

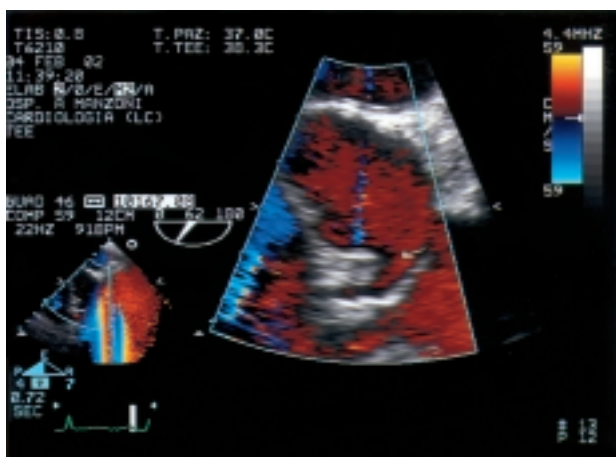


Figure 3. Modified transesophageal color Doppler short-axis view of the aortic root.

activity, especially in young individuals. The incidence of death related to coronary artery anomalies in physically active individuals aged 8-66 years is 11% but no data regarding older subjects have been published in the literature⁴. Nevertheless, coronary anomalies are also compatible with a normal myocardial development and function.

Transesophageal echocardiography may reveal coronary anomalies but the operator's ability in identifying an unusual appearance of an otherwise normal structure is of utmost importance⁴⁻⁶.

References

1. Angelini P, Velasco JA, Flamm S. Coronary anomalies: incidence, pathophysiology, and clinical relevance. *Circulation* 2002; 105: 2449-54.

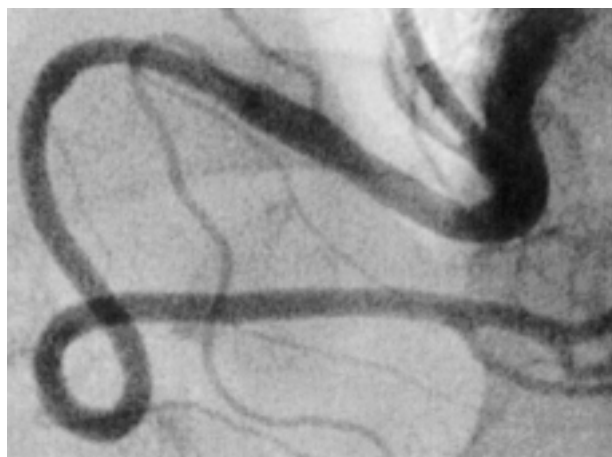


Figure 4. Coronary angiography: the sinus of Valsalva and the right coronary artery.

2. Click RL, Holmes DR Jr, Vliestra RE, Kosinski AS, Kronmal RA. Anomalous coronary arteries: locations, degree of atherosclerosis and effect on survival - a report from the Coronary Artery Surgery Study. *J Am Coll Cardiol* 1989; 13: 531-7.
3. Angelini P. Functionally significant versus intriguingly different coronary artery anatomy: anatomic-clinical correlations in coronary anomalies. *G Ital Cardiol* 1999; 29: 607-15.
4. Gaither NS, Rogan KM, Stajduhar K, et al. Anomalous origin and course of coronary arteries in adults: identification and improved imaging utilizing transesophageal echocardiography. *Am Heart J* 1991; 122 (Part 1): 69-75.
5. Fernandes F, Alam M, Smith S, Khaja F. The role of transesophageal echocardiography in identifying anomalous coronary arteries. *Circulation* 1993; 88: 2532-40.
6. Giannoccaro PJ, Sochowski RA, Morton BC, Chan KL. Complementary role of transesophageal echocardiography to coronary angiography in the assessment of coronary artery anomalies. *Br Heart J* 1993; 70: 70-4.



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