

Retroaortic Circunflex Coronary Artery Appearance on Transesophageal Echocardiography

Aspecto da artéria coronária circunflexa retroaórtica por ecocardiografia transesofágica

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Abstract

The retroaortic anomalous coronary (RAC) sign is an unknown finding that has been described on transthoracic echocardiography as an echogenic tubular structure located on the atrial side of the atrioventricular sulcus. Here we present a case in which the RAC sign on transesophageal echocardiography (TEE). Knowledge of RAC sign and its evaluation on TEE increases sensitivity and specificity and provides the opportunity to assess high-risk anatomic features that are important in evaluating the risk of sudden death.

Case in point

The retroaortic anomalous coronary (RAC) sign is the characteristic echocardiographic tubular appearance of an anomalous coronary artery (ACA) located on the atrial side of the atrioventricular groove.¹

Here we present the case of a 55-year-old patient in whom transesophageal echocardiography (TEE) was requested in the context of a cryptogenic stroke. Incidentally, an aberrant origin of the circumflex artery (LCX) from the non-coronary aortic sinus of Valsalva was detected exhibiting the RAC sign (Figures 1A-D).¹

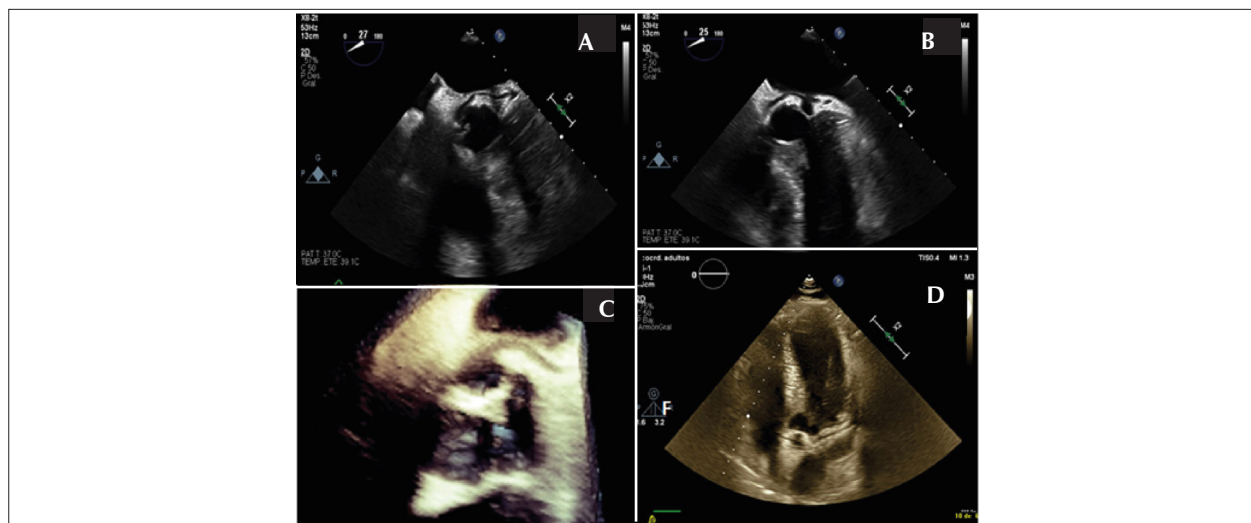


Figure 1 – Panel A-B: Two-dimensional transesophageal echocardiography taken at the midesophageal (25–30°) level demonstrating the retroaortic anomalous coronary (RAC) sign. An anomalous circumflex artery origin from the non-coronary aortic sinus of Valsalva that extends behind the aortic root to its usual location in the atrioventricular groove is evident. Panel C: Three-dimensional echocardiography, zoom mode acquisition, and multiplanar reconstruction in which the coronary ostium and its angulation are seen. Panel D: Two-dimensional transthoracic echocardiogram demonstrating the RAC sign in the apical five-chamber view.

Keywords

RAC Sign; Retroaortic Circumflex Coronary Artery; Transesophageal Echocardiography.

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ACA is found in 0.1–1.3% of the population and may be associated with other congenital heart diseases. The LCX with an origin in the right coronary sinus is the most frequently involved artery (60%). The variant retroaortic coronary artery is believed to be mostly benign, although some cases may present as myocardial ischemia or sudden death.² Detection of the RAC sign on transthoracic echocardiography has a sensitivity and specificity of 63.3% and 93.9%, respectively. However, the use of TEE with three-dimensional -implementation could confirm the RAC sign and increase its sensitivity and specificity. TEE could enable an optimal evaluation of the coronary ostium and its angulation with the aortic root (slit-like ostium, acute

take-off angle, proximal narrowing), the vessel course, and its relationship with the surrounding structures as well as the identification of concomitant congenital heart defects.

Authors' contributions

The authors participated in its design, structure and text.

Conflict of interest

The authors have declared that they have no conflict of interest.

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