

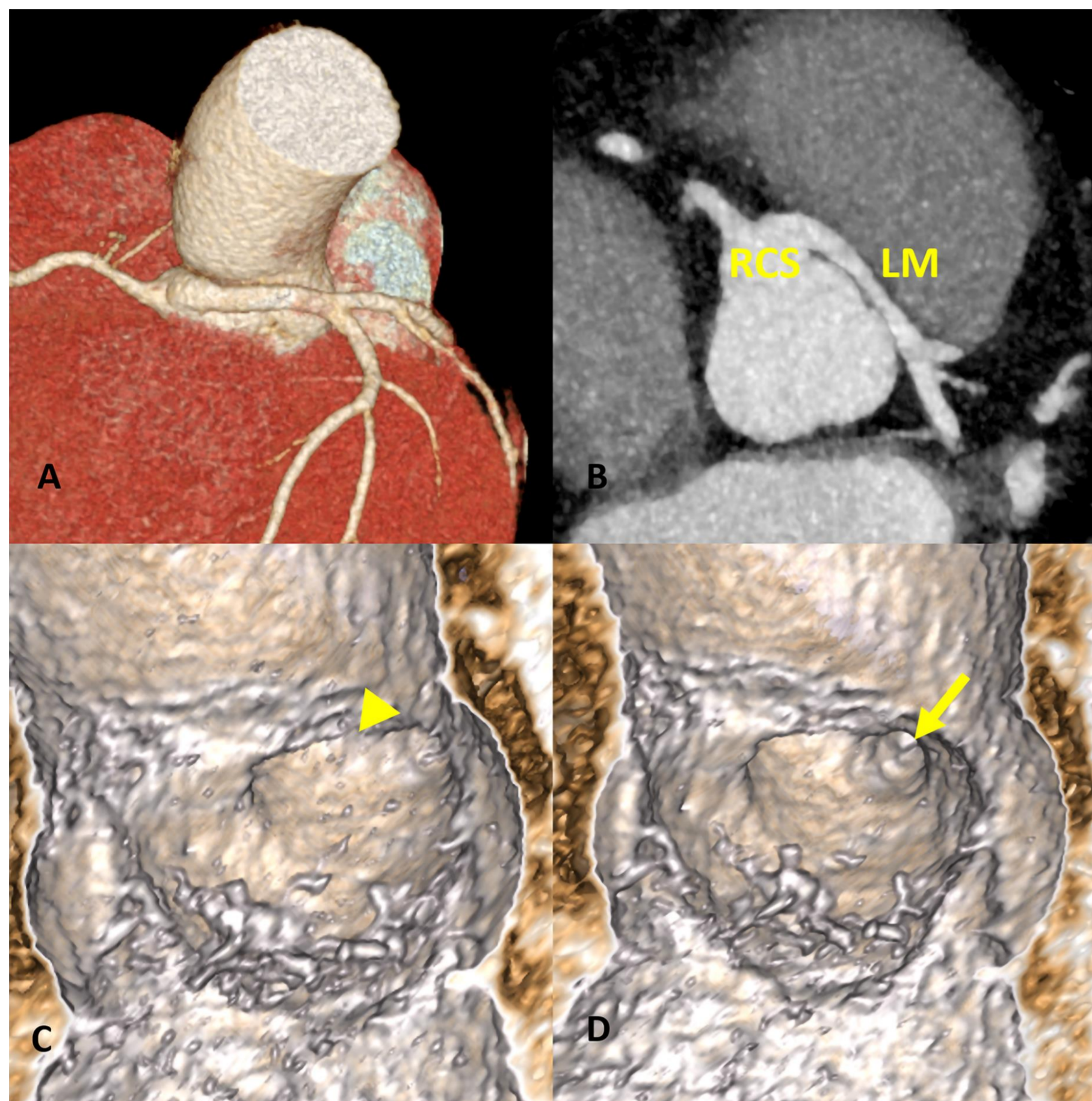
THREE-DIMENSIONAL TRANSESOPHAGEAL ECHOCARDIOGRAPHY IN ANOMALOUS ORIGIN OF THE LEFT CORONARY ARTERY FROM THE OPPOSITE SINUS OF VALSALVA



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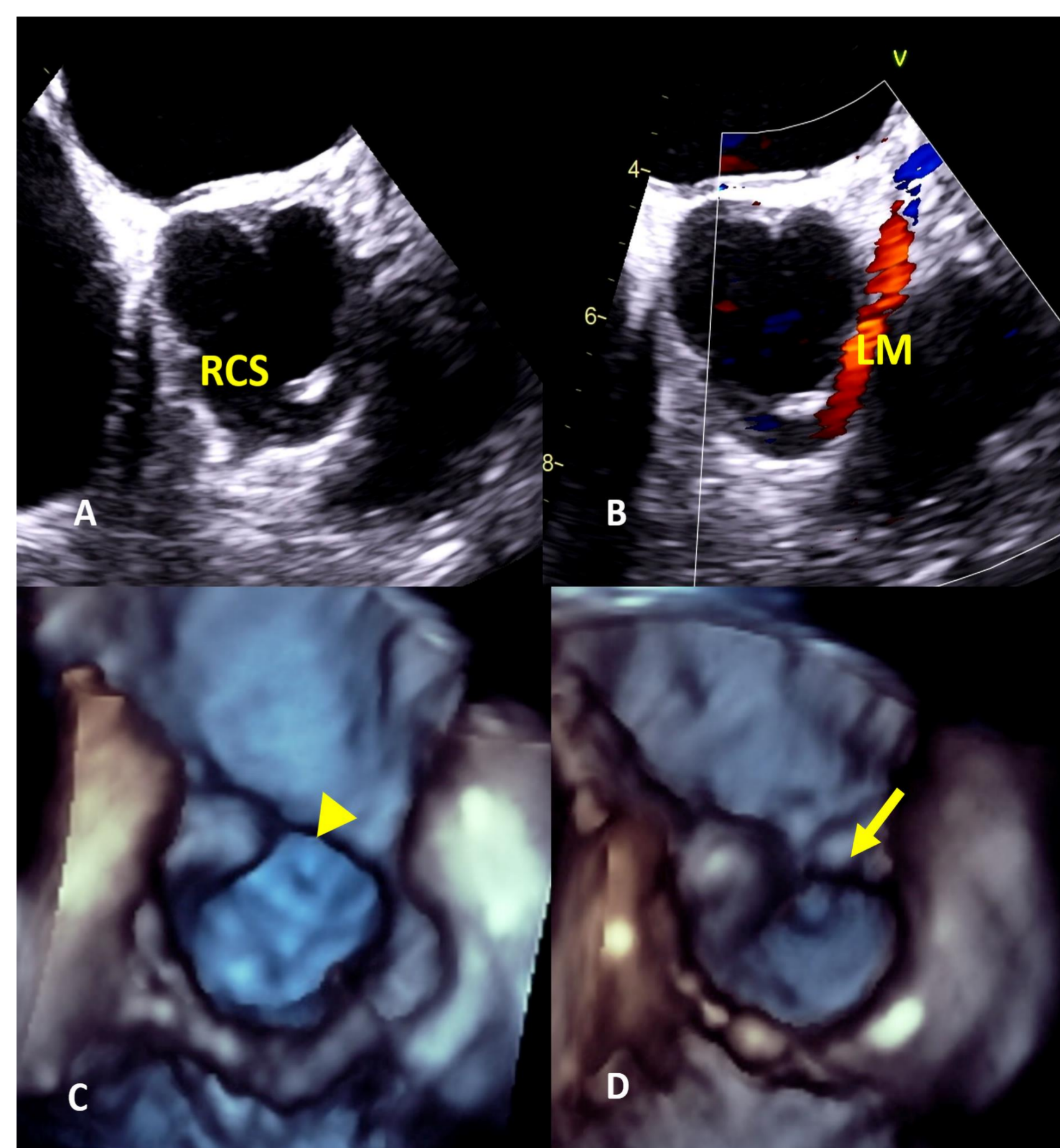


A 43 year-old Caucasian male was admitted to our emergency department for typical chest pain occurring after exercise. The physical examination and rest electrocardiography were unremarkable. The patient was a chronic smoker with a history of untreated arterial hypertension. A coronary CT scan revealed anomalous origin of the left coronary artery from the opposite sinus of Valsalva with an inter-arterial course, without significant coronary artery disease (Figure 1). We performed a complete evaluation of the coronary anatomy with transesophageal echocardiography (Figure 2). We analyzed specific aspects of the anatomy of the anomalous coronary artery as described in recent publications.[1,2] In particular: 1) Proximal course of the coronary arteries 2) Number of ostia and ostial morphology 3) angle of take-off and 4) level of take-off of the anomalous coronary artery. Through coronary CT and transesophageal echocardiography, we detected: 1) anomalous origin of the left coronary artery from the opposite sinus with an inter-arterial course 2) A common coronary ostium in the right sinus of Valsalva, giving rise to the right and left main coronary arteries, with three-dimensional visualization 3) Acute take-off angle of the anomalous left coronary artery (defined as less than 45°) with 4) take-off level below the commissure.

Anomalous origin of the left coronary artery from the opposite sinus of Valsalva is an important cause of sudden death in young adults[3]. Post mortem studies have described associated acute take-off angle and slit-like elliptical ostium in the anomalous coronary artery leading to sudden death in such patients[4]. Abnormal ostial morphology and acute take-off are considered potential mechanisms of flow obstruction in the anomalous coronary artery[5]. Cross-sectional coronary angiography with cardiac CT scan or magnetic resonance is considered necessary to accomplish 3D visualization of the coronary artery ostium[1]. We present a proof of concept describing how three-dimensional transesophageal echocardiography can be used to visualise the coronary ostium and proximal course in patients with anomalous coronary artery. However, the accuracy of such imaging modality in the routine evaluation of the anomalous coronary artery is unknown, and further investigation is needed.

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