

IMAGES IN MEDICINE

Multislice Computed Tomography Coronary Angiography Uncovers Complex Post-ASD Repair Anatomy

Jasna Strika-Kuric ^{ORCID}

Department of Radiology, Cantonal Hospital Zenica, Zenica, Bosnia and Herzegovina

Corresponding Author: Jasna Strika-Kuric, MD. Department of Radiology, Cantonal Hospital Zenica, Zenica, Bosnia and Herzegovina; E-mail: jasna.strika@gmail.com; Phone: +387 32 447-000; ORCID ID: 0000-0002-5790-5535

Pages: 123 - 124 / Published online: 27 December 2024

Cite this article: Strika-Kuric J. MSCT Coronary Imaging Uncovers Complex Post-ASD Repair Anatomy. Sar Med J. 2024; 1(2): Online ahead of print. [doi](https://doi.org/10.70119/0022-24) 10.70119/0022-24

Original submission: 24 October 2024; Revised submission: 17 November 2024; Accepted: 21 November 2024

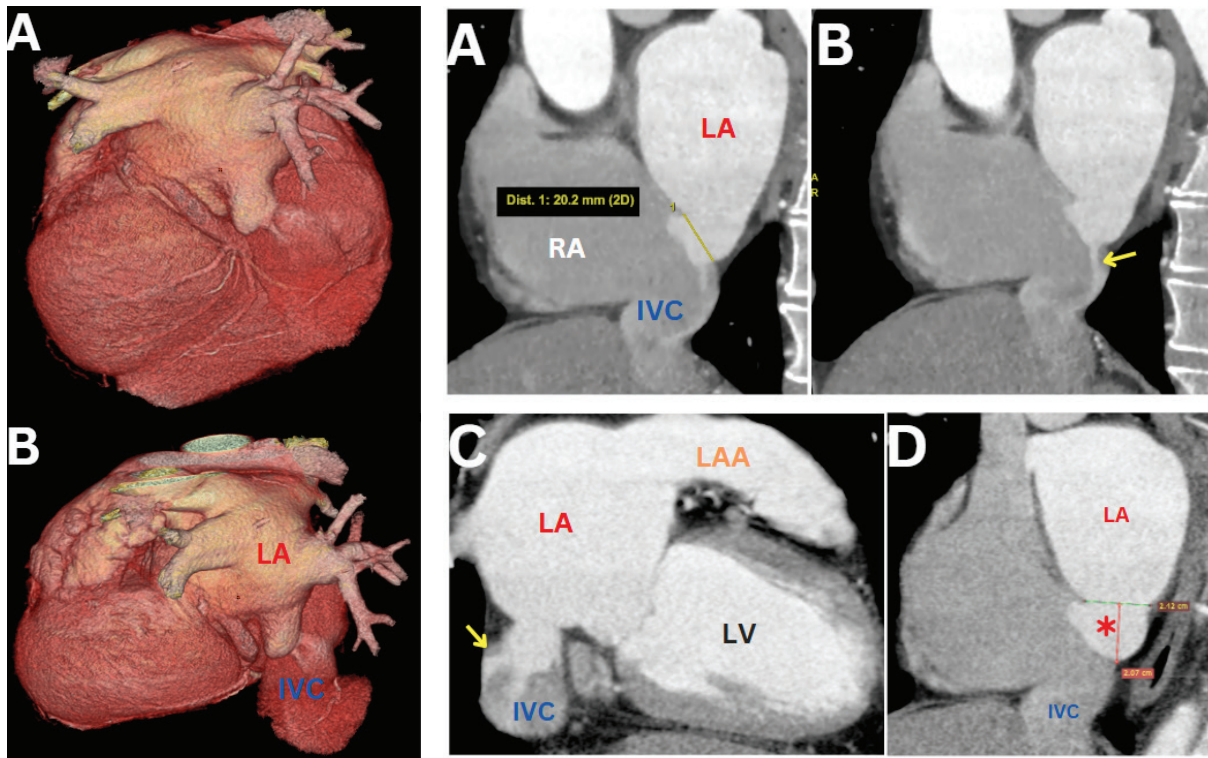


Figure 1. The inferior sinus venosus atrial septal defect (ASD), along with aneurysmal dilatation of the left atrial (LA) floor, is clearly visualized on Volume Rendering Technique (VRT) reconstructions from multislice cardiac computed tomography angiography (IVC - inferior vena cava) (A) caudal-posterior-left oblique view.(B) cranial-posterior-left oblique view)

Figure 2. The inferior sinus venosus atrial septal defect (ASD) is seen in sagittal (A, B, D) and paracoronal (C) multislice cardiac computed tomography angiography images, with a defect in the interatrial septum floor near the inferior vena cava (IVC) inflow (yellow arrows in B and C). This allows contrast shunting from the left atrium (LA) to the right atrium (RA) and IVC. The left atrial appendage (LAA) is significantly dilated (C). The LA shows significant global dilatation as part of broader structural changes, including aneurysmal dilatation of its floor (asterisk in D)

A 53-year-old male with a history of heart failure with reduced ejection fraction (HFrEF) and permanent atrial fibrillation, who underwent ostium secundum atrial septal defect (ASD) repair at age 9, underwent multislice computed tomography (CT) coro-

nary angiography to assess for significant coronary stenosis. The calcium score of 2 indicated minimal plaque burden, with the most significant lesion located at the ostium of the LCX, measuring 15.5%. This resulted in a CAD-RADS classification of 1/P1/HRP.

In addition to the coronary findings, advanced reconstruction revealed a residual sinus venosus ASD located at the inferior interatrial septum. This defect, previously assessed by transesophageal echocardiography, was described as an aneurysmally altered segment with a disruption in continuity of up to 2 mm, facilitating a left-to-right shunt from the left atrium into both the right atrium and inferior vena cava. Despite the surgical repair performed in 1980, these findings highlight the persistence of a clinically significant remnant lesion decades later. Furthermore, the left atrium exhibited enlargement, characterized by aneurysmal dilatation of its floor and marked enlargement of the left atrial appendage, though no thrombotic masses were identified (Figure 1-2). The complex anatomical features of the heart pose challenges in differentiating ASD types, although contemporary CT techniques provide clarity in evaluating such anomalies (1-3). According to the 2018 AHA/ACC guidelines,

specialized management of adult congenital heart disease is essential, underscoring the importance of a multi-modality approach (2). While the primary focus of the CT was coronary assessment, the comprehensive findings offer valuable insights that inform further therapeutic decision-making in this patient with complex structural heart abnormalities.

Consent: The author have obtained written consent from the patient to submit and publish this case report, including images and accompanying text, in accordance with COPE guidelines.

Authors' Contribution: Jasna Strika-Kuric was responsible for the conceptualization, methodology, formal analysis, visualization, writing of the original draft, and the review and editing of the paper.

Conflict of interest: None declared.

Funding: None declared.

REFERENCES:

1. White HD, Halpern EJ, Savage MP. Imaging of adult atrial septal defects with CT angiography. *JACC Cardiovasc Imaging*. 2013;6(12):1342-5. doi: 10.1016/j.jcmg.2013.07.011
2. Stout KK, Daniels CJ, Aboulhosn JA, Bozkurt B, Broberg CS, Colman JM, et al. 2018 AHA/ACC Guideline for the Management of Adults With Congenital Heart Disease: Executive Summary: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *J Am Coll Cardiol*. 2019 2;73(12):1494-563. doi: 10.1016/j.jacc.2018.08.1028
3. Russell J, Justino H, Dipchand A, Yoo SJ, Kim YM, Freedom RM. Noninvasive imaging in congenital heart disease. *Curr Opin Cardiol*. 2000;15(4):224-37. doi: 10.1097/00001573-200007000-00004