THE ANATOLIAN JOURNAL OF CARDIOLOGY

Official journal of the TURKISH SOCIETY OF CARDIOLOGY

Unique Case of ALCAPA in an Elderly Patient: Conservative Management and Long-Term Follow-Up

A 69-year-old male patient presented to our institution with a history of intermittent lower limb edema persisting for over a year, with no preceding indicators or symptoms of cardiovascular disease. His general body examination was unremarkable. The resting electrocardiogram (ECG) displayed sinus rhythm devoid of any myocardial ischemic changes. Additionally, myocardial enzyme levels were within normal limits.

Transthoracic echocardiography (TTE) was subsequently performed, revealing dilation of the right coronary artery and the unexpected absence of a left coronary artery origin from the aortic sinus. Notably, systolic blood flow within the main pulmonary artery was depicted as a low-velocity, continuous, reverse shunt signal (Figure 1A, arrows), accompanied by ample blood flow signals within the ventricular septum and the right ventricular myocardium (Figure 1B, arrows). The left ventricular systolic function was preserved, with an ejection fraction measured at 60%. Color Doppler echocardiogram further identified mild mitral valve regurgitation. To confirm these findings, a computed tomography angiography (CTA) was conducted, which conclusively diagnosed anomalous origin of the left coronary artery from the pulmonary artery (ALCAPA). Specifically, the left coronary artery originated from the left sinus of the pulmonary artery (Figure 1C, arrow), while the right coronary artery originated conventionally from the right coronary sinus of the aorta. Both coronary arteries demonstrated marked dilation, and numerous collateral vessels originated from these arteries (Figure 1D-F, arrow).

Despite the diagnosis, the patient declined surgical intervention to establish dual coronary circulation. Given that CTA results negated the presence of obstructive coronary lesions and myocardial ischemia, we respected his decision and formulated a management strategy accordingly. This included establishing a follow-up review schedule and providing health guidance to the patient.[1] Over the subsequent 6 years, serial echocardiographic evaluations revealed no adverse changes, and regular telephone follow-ups conducted every 3 months indicated an absence of significant myocardial ischemia symptoms. Older patients at low risk for myocardial ischemia might be candidates for careful monitoring and follow-up, provided their condition remains stable.[2,3] Our case study underscores a unique scenario in the natural progression of the disease in an elderly individual, exemplifying positive long-term results that are bolstered by the existence of strong collateral circulation. This observation reinforces the significance of adopting a strategy of careful monitoring as an alternative to invasive procedures, especially when clinical parameters suggest a stable condition and favorable prognosis.

E-PAGE ORIGINAL IMAGE

Jie Wang[1#]
Ping Hu[2#]
Xiao-Jing Ma[2#]
Jun Xie[3]

[1]*Department of Radiology, Wuhan Asia Heart Hospital Affiliated with Wuhan University of Science and Technology, Wuhan, China*
[2]*Department of Echocardiography, Wuhan Asia Heart Hospital Affiliated with Wuhan University of Science and Technology, Wuhan, China*
[3]*Department of Endocrinology, Wuhan Asia General Hospital Affiliated with Wuhan University of Science and Technology, Wuhan, China*

Corresponding author:
Jun Xie
✉ ww2024art@qq.com

Cite this article as: Wang J, Hu P, Ma X, Xie J. Unique case of ALCAPA in an elderly patient: conservative management and long-term follow-up.*Anatol J Cardiol.* 2024;28(12):E-37-E-38.

#The first three authors were co-first authors.

DOI:10.14744/AnatolJCardiol.2024.4836

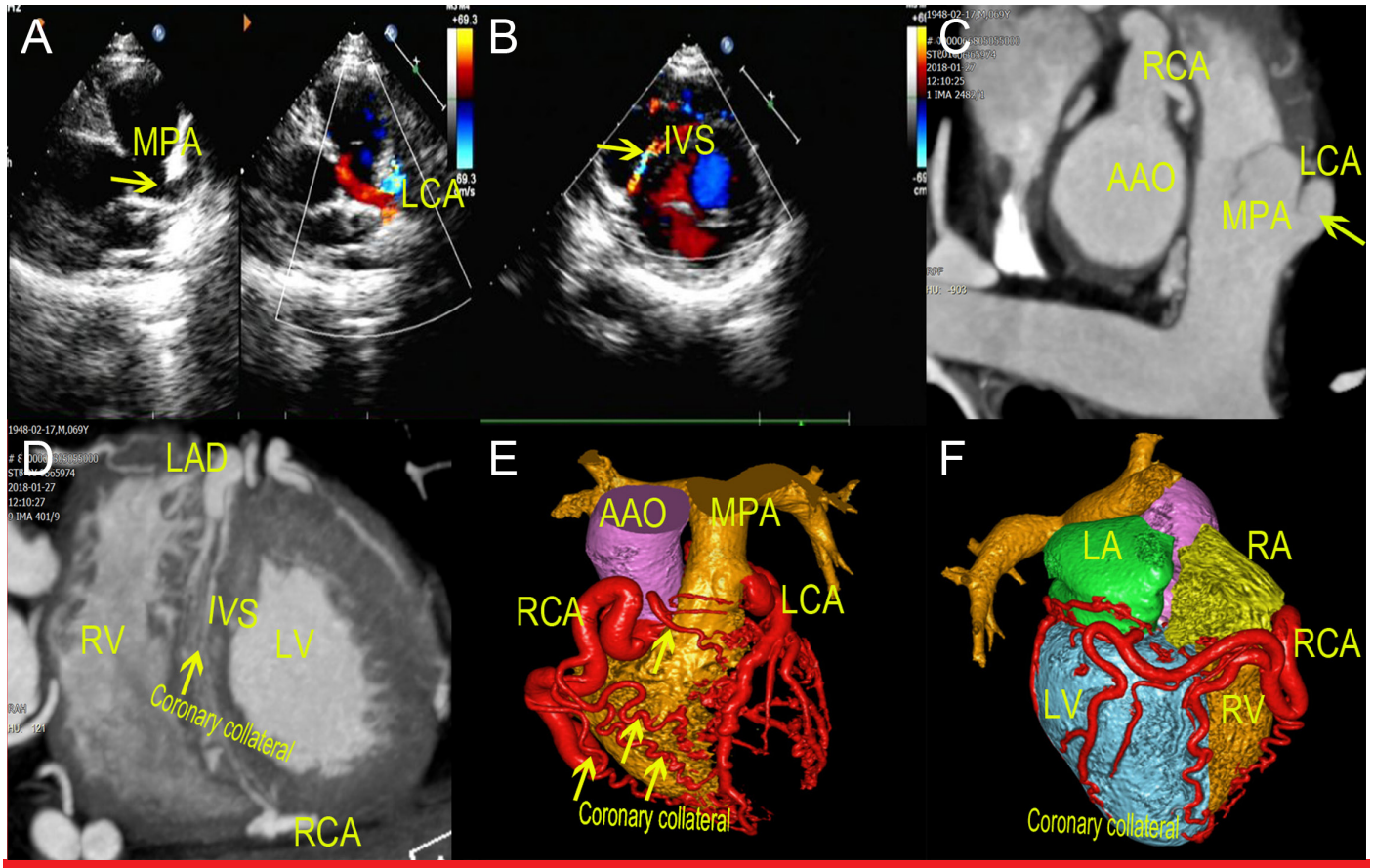

Figure 1. Imaging of anomalous origin of the left coronary artery from the pulmonary artery in a 69-year-old male patient. (A-B) Transthoracic echocardiography (TTE) reveals the left coronary artery (LCA) originating from the pulmonary artery's left sinus, with notable proximal dilation, and a proliferation of collateral blood flow within the interventricular septum. (C-D) Through maximum intensity projection, it is demonstrated that the LCA arises from the pulmonary artery's left sinus, accompanied by a multitude of collateral vessels embedded in the interventricular septal tissue. (E-F) Employing 3-dimensional volume rendering (3D VR) in cardiovascular computed tomography angiography (CTA), a vivid depiction of the intricate collateral circulation network is attained. LA, left atrium; RA, right atrium; RV, right ventricle; LV, left ventricle; IVS, interventricular septum; AAO, ascending aorta; MPA, main pulmonary artery.

Data Availability Statement: The data that support the findings of this study are available from the corresponding author.

Informed Consent: This report has obtained the patient's informed consent for the publication of their anonymized clinical data.

Declaration of Interests: All authors have read and approved the submission of the manuscript and have no conflicts of interest to disclose.

Funding: This work was funded by the Wuhan Clinical Medical Research Center for Cardiovascular Imaging, and the Open Fund of Imaging Center (Project No. CMRC202302).

REFERENCES

1. Sagar P, Sivakumar K. Life long surveillance is warranted as coronary artery remodels variably after treatment of adult patients with anomalous left coronary artery origin from pulmonary artery. *Ann Pediatr Cardiol*. 2023;16(3):219-222. [CrossRef]
2. Ortiz de Salazar A, Agosti J. Anomalous origin of the left coronary artery from the pulmonary artery in older adults. *J Thorac Cardiovasc Surg*. 1993;106(3):563. [CrossRef]
3. Kakarla S, Sasikumar D, Varma RP, et al. Influence of age at surgery on left ventricular strain in patients with anomalous origin of left coronary artery from pulmonary artery. *Eur J Cardiothorac Surg*. 2022;63(1):ezac486. [CrossRef]