

CARDIOVASCULAR FLASHLIGHT

<https://doi.org/10.1093/eurheartj/ehac303>

Online publish-ahead-of-print 8 June 2022

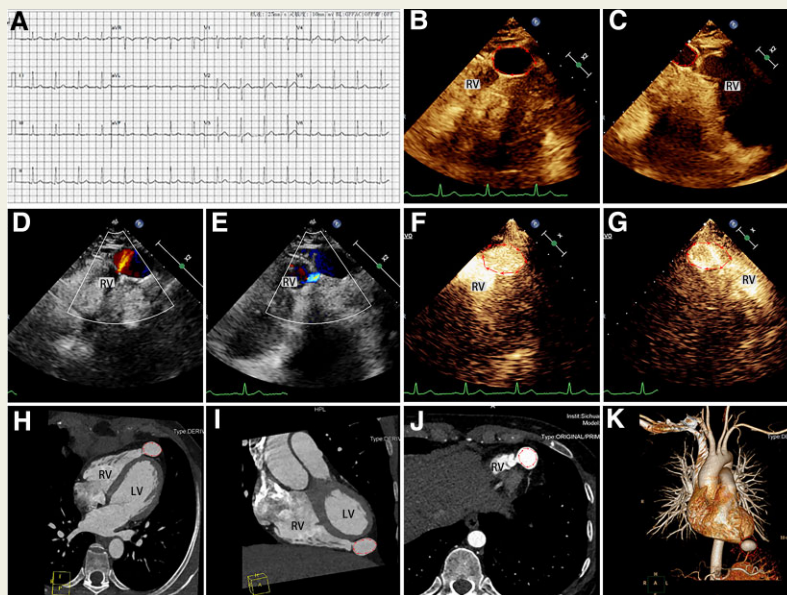
Right ventricular diverticulum: an uncommon cause of chest pain

Xiaoling Zhang[†], Zhiyue Liu[†], Yeting Bian, and He Huang *

Department of Cardiology, West China Hospital of Sichuan University, Guoxue Xiang 37, Chengdu 610041, China

*Corresponding author. Tel: 028-85422355, Fax: 028-85422355, Email: huanghe@wchscu.cn[†] X.Z. and Z.L. contributed equally to the study.

A 50-year-old female without chronic disease presented with chest pain and echocardiography revealed a left ventricular aneurysm in the primary hospital. No positive results were observed in the physical examination, electrocardiogram (Panel A), myocardial necrotic marker, or coronary angiography. A cyst-like structure (red arrow) with the size of 28×20 mm was found in the posterior-inferior part of the right ventricular (RV) apex by echocardiography (Panels B and C), which communicated with the RV with a neck of 3 mm. The colour Doppler indicated a bidirectional shunt in the communication port (Panels D and E; see [Supplementary material online, Videos S1–S3](#)), implying that it has contractility. Contrast echocardiography with *sono vue* found that after right heart filling, the contrast agent entered into a capsule (25×22 mm, red arrow) with a fine bundle, which was located behind the apex of the heart (Panels F and G; see [Supplementary material online, Videos S4–S7](#)). No perfusion defect was detected in the wall of the capsule (see [Supplementary material online, Video S8](#)). Computed tomography examination showed a cyst-like structure (27×23 mm) protruding in the anterior and inferior part of the RV apex (Panels H–K). Given all the above considerations, the patient was diagnosed with a rare congenital RV apical diverticulum. The diverticulum, in this case, is located at the posterior-inferior of the apex, which is easy to be misdiagnosed on imaging and has a high risk of arrhythmia, cardiac rupture, and thrombosis. Diverticulum closure via the femoral vein was performed (see [Supplementary material online, Video S9](#)), and we will follow up on postoperative changes.



[Supplementary material](#) is available at *European Heart Journal* online.

All the procedures were approved by the Biomedical Research Ethics Committee of West China Hospital, Sichuan University.

X.Z. and Z.L. were involved in the diagnosis, treatment and follow-up of the patients, collected the data and wrote the manuscript; Y.B. collected the data; and H.H. designed and supervised the study. All authors critically revised the manuscript for important intellectual content.

© The Author(s) 2022. Published by Oxford University Press on behalf of European Society of Cardiology. All rights reserved. For permissions, please e-mail: journals.permissions@oup.com