Left ventricular pseudo-aneurysm complicating a ruptured isolated congenital diverticulum

Liang Fang[1], Chao Xue[2], Ying Zhao[3], Zhaoying Wen[4], and Michael Henein[5]

[1]Chengde Medical College Affiliated Hospital
[2]Affiliation not available
[3]Beijing Anzhen Hospital, Capital Medical University
[4]Beijing Anzhen Hospital, Capital Medicical University
[5]Umea University

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Abstract

We report a case of 41-year-old woman who presented with chest tightness and shortness of breath. Transthoracic echocardiogram (TTE) showed left ventricular (LV) pseudo-aneurysm of the inferior wall with preserved LV systolic function. Coronary angiogram was normal. Surgical repair of the pseudo-aneurysm with a pericardial patch was performed, and pathological results confirmed rupture of an isolated congenital LV diverticulum.as the most likely etiology.

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Liang Fang MD.[1], Chao Xue MD.[2], Ying Zhao PhD, MD[2], Zhaoying Wen PhD, MD[3], Michel Y Henein MSc, PhD, FESC[4]

1. Department of Ultrasound, South Hospital District of Affiliated Hospital of Chengde Medical College, Chengde, Hebei, China
2. Department of Echocardiography, Beijing Anzhen Hospital, Capital Medical University, Beijing, China
3. Department of Radiology, Beijing Anzhen Hospital, Capital Medical University, Beijing, China
4. Institute of Public Health and Clinical Medicine, Umeå University, Umeå, Sweden.

Running title: A ruptured congenital left ventricular diverticulum

Corresponding Author

Michael Henein MSc PhD FESC

Professor of Cardiology

Department of Public Health and Clinical Medicine

Umeå University, Umeå, Sweden

michael.henein@umu.se

Tel: +46907850000 Fax: +4690137633

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Keywords : left ventricular, pseudo-aneurysm, diverticulum

Congenital left ventricular (LV) diverticulum is a rare cardiac anomaly which can be complicated with infective endocarditis, embolisms, arrhythmia and, rarely, rupture[1-4] . If ruptured, the outcome is usually poor with high mortality.

A 41-year-old woman presented with a history of chest tightness and shortness of breath for 6 months. On clinical examination, blood pressure was 124/86 mmHg. A transthoracic echocardiography (TTE) showed 20 mm discontinuity (with narrow connection neck) of basal segment of the inferior wall with 88 x 71 mm echo-free space, suggesting pseudo-aneurysm formation wrapped within the pericardial (Fig 1A). There was a marked thrombus in the pseudo-aneurysm with large pericardial effusion (Fig 1B). Color Doppler demonstrated blood flow across the narrow neck of the pseudo-aneurysm (Fig 1C). Overall LV systolic function was preserved with no other combined abnormality. The patient did not have any history of myocardial infarction, prolonged fever, chest trauma or any cardiac surgery. Coronary angiogram confirmed normal coronary arteries and cardiac magnetic resonance imaging (MRI) confirmed the presence of the LV pseudo-aneurysm, on late gadolinium enhancement (LGE) showing LV pseudo-aneurysm with thin wall corresponding to fibrosis and/or scar (Fig 2A & 2B).

The patient underwent surgery, during which a large pseudo-aneurysm of LV inferior wall was confirmed with a thrombus inside. The pseudo-aneurysm was closely adherent to the pericardium of the diaphragmatic surface (Fig 3). Surgical repair with a pericardial patch was performed, and postoperative TTE showed normal LV function with the patch located at the inferior wall. Pathological investigations showed the aneurysm size was 70 x 60 x 35 mm. Based on the imaging, pathological results and medical history we considered that the ventricular aneurysm was a congenital LV diverticulum, which ruptured and caused a ventricular pseudo-aneurysm.

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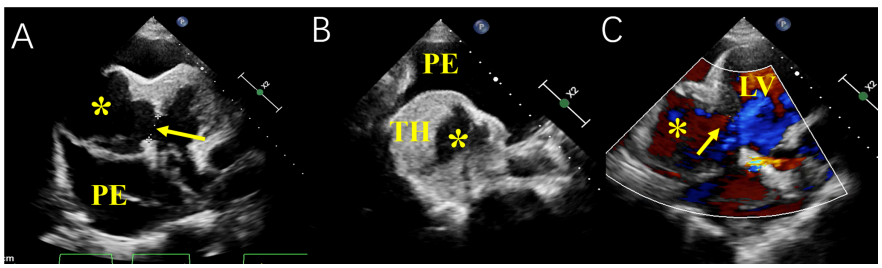

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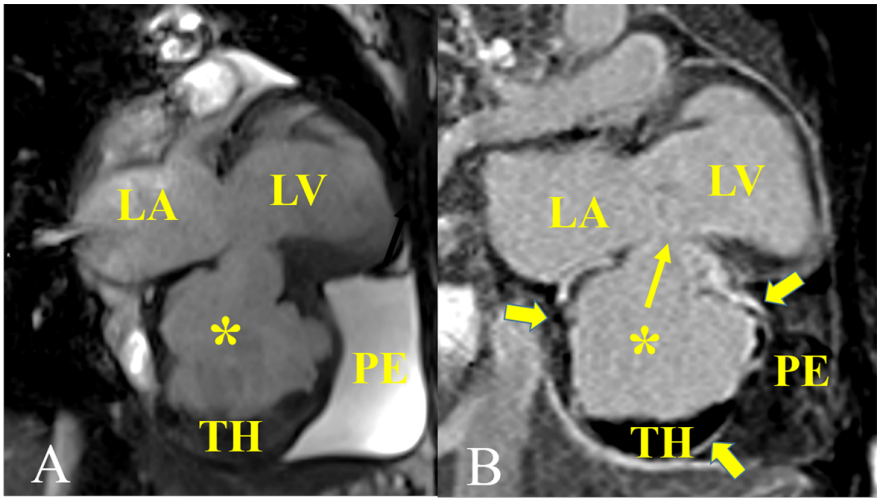

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