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Severe Leakage Presenting Mitral Regurgitation Caused by a Pseudoaneurysm Connecting the Left Ventricle and the Left Atrium Through Fistulae as a Rare Complication of Cardiac Trauma

Bong Seok Seo, MD[1], Jae-Hyeong Park, MD[1], Byung Joo Sun, MD[1], Jae-Hwan Lee, MD[1], and Jae Won Lee, MD[2]

[1]Department of Internal Medicine, Chungnam National University School of Medicine, Chungnam National University Hospital, Daejeon, [2]Department of Thoracic and Cardiovascular Surgery, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea

Mitral regurgitation (MR) can develop from abnormalities in any part of the mitral valve (MV) apparatus.[1)] Although MV prolapse is the most common cause of MR especially in acute MR,[2)] abnormal connection through a fistula between the left ventricle (LV) and left atrium (LA) can also cause MR-like features. Possible causes of acquired connection between cardiac chambers include myocardial infarction infective endocarditis and iatrogenic causes such as cardiac operations.[3)] LV pseudoaneurysms are uncommon, and a pseudoaneurysm with LA to LV fistulae resulting in acute leakage with a similar clinical presentation to MR are very rare. We present a case of acute severe leakage presenting as an MR feature due to a fistula between LV and LA as a complication of a previous non-penetrating chest injury. In this present case, LV pseudoaneurysm developed as a complication of previous blunt chest trauma. It is impossible to explain the exact mechanism of the acute onset of the patient's symptoms. After the formation of the pseudoaneurysm, there was a high possibility that the fistula to the LA occurred after the fistula to the LV because of high pressure in the LV. The symptom of acute severe MR may have occurred after the formation of the fistula to the LA. A 66-year-old man was admitted to our cardiology clinic with complaints of dyspnea on ordinary activity and orthopnea. He underwent open thoracic surgery to control mediastinitis as a complication of an automobile accident 30 years ago. Auscultation revealed systolic murmurs and basal pulmonary crackles. Initial transthoracic echocardiography with color Doppler revealed a pseudoaneurysm (*) connecting the LA and the LV, and significant flow through the fistula from the pseudoaneurysm during systole (Fig. 1A, B). The transesophageal echocardiography revealed a 2.4x2.3 cm sized pseudoaneurysm with LV to LA fistulae (Fig. 1C, D). Contrast enhanced computed tomography (CECT) confirmed the presence of a pseudoaneurysm communicating from the LA to the LV via fistulae (Fig. 2A). After open chest and removal of the pericardium, a round pseudoaneurysm was noted near LA appendage (LAA, Fig. 3A). The connection through fistulae was confirmed with a right angle hemostatic forcep (Fig. 3B). The pseudoaneurysm was closed by a Dacron patch after the resection and then mitral valve repair was done with a ring (Fig. 3C, D). The patient was discharged without cardiac symptoms after surgery. The follow-up CECT showed complete resolution of the pseudoaneurysm (Fig. 2B).

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Correspondence: Jae-Hyeong Park, MD, Department Internal Medicine, Chungnam National University School of Medicine, Chungnam National University Hospital, 282 Munhwa-ro, Jung-gu, Daejeon 35015, Korea
Tel: 82-42-280-7187, Fax: 82-42-280-8238, E-mail: jaehpark@cnu.ac.kr

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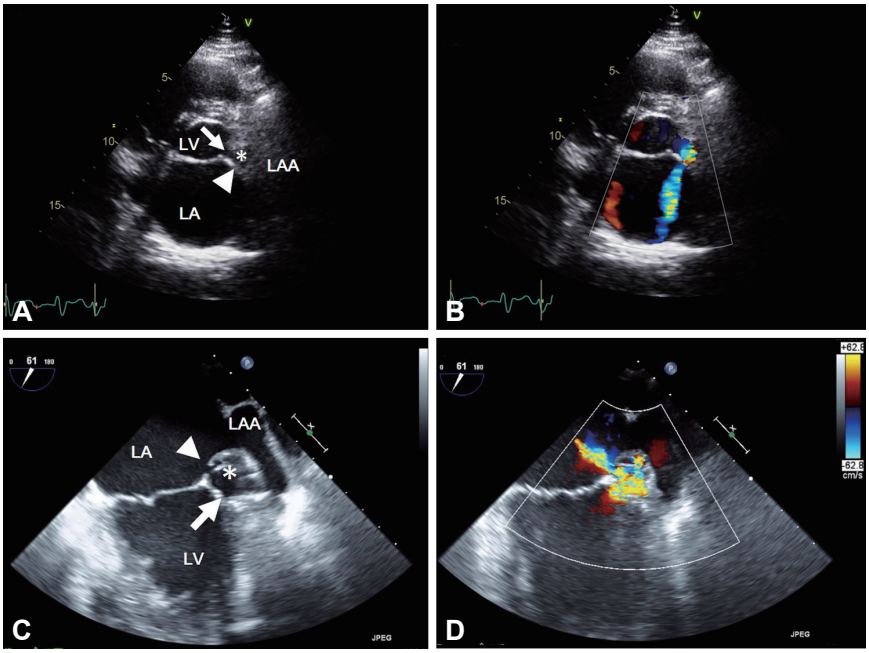

Fig. 1.

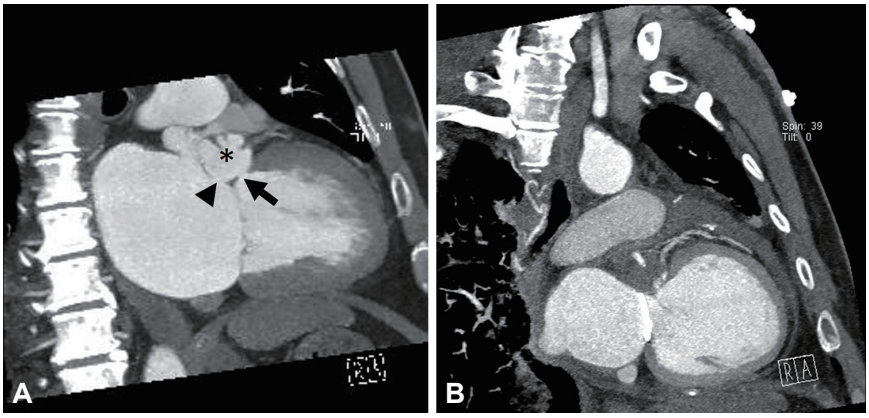

Fig. 2.

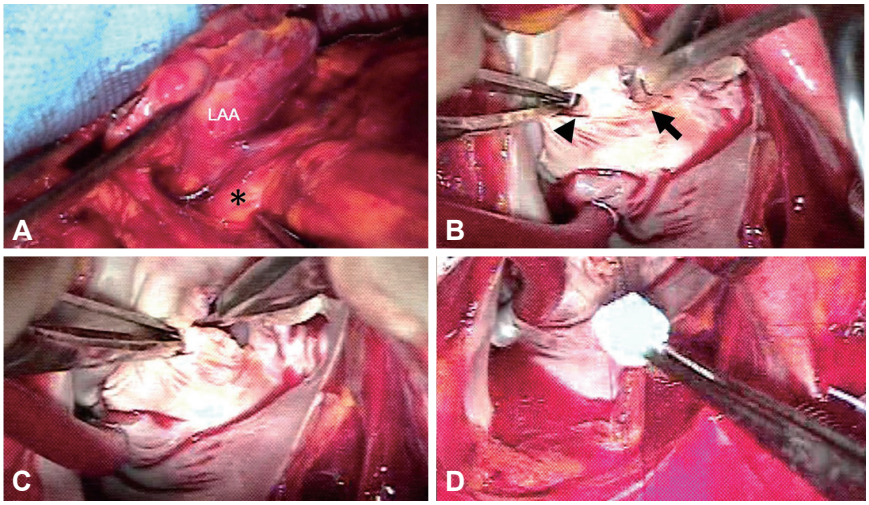

Fig. 3.

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