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Case Report

Spontaneous dissecting aneurysm of the left atrium complicated by cerebral embolism: A report of two cases with review of literature

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ABSTRACT

Left atrial dissection is a very uncommon complication of cardiac surgery and usually causes significant hemodynamic compromise. Little is known about spontaneous dissection of the left atrium. Two patients, one middle-aged man and another elderly woman were evaluated following stroke. Routine trans-thoracic echocardiogram showed vertical division of the left atrium with both chambers communicating with each other through an orifice. Detailed trans-oesophageal echocardiographic study revealed dissection of the left atrium producing an additional false chamber (pseudo-aneurysm) placed posterior to the left atrial appendage and above the postero-lateral aspect of mitral annulus. Spontaneous dissection of the left atrium is extremely rare, and there is no report of cerebral embolism associated with it. Review of literature reveals interesting facets of this rare entity.

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1. Introduction

Left atrial (LA) dissection is a rare complication of cardiac surgery, probably related to a contained atrio-ventricular separation allowing pressurized blood to separate the layers of the posterior LA.¹ It has been defined as a false, blood-filled cavity, or lumen from the mitral annular area to the LA free wall or interatrial septum, creating a new chamber with or without communications into the true LA. The most common cause is surgical trauma during mitral valve replacement.² It has been also reported to occur following coronary bypass surgery, percutaneous coronary angioplasty, blunt chest trauma, acute myocardial infarction, pulmonary vein cannulation,

excision of the LA mass, radiofrequency ablation, repair of the left ventricular pseudo-aneurysm and infective endocarditis etc.³⁻¹² Presentation may be early or delayed. Spontaneous dissection of the LA has been rarely reported in the literature.¹³⁻²⁰ We herein describe two patients, who presented with stroke and were found to have LA dissection with pseudo-aneurysm formation.

2. Case report-1

A 54-year-old man suffering from type 2 diabetes mellitus and systemic hypertension presented with acute ataxia, nausea and giddiness in February 2014. There was no previous history

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Abbreviations: LA, left atrium; AN, aneurysm; LV, left ventricle; RV, right ventricle; RA, right atrium; AO, aortic root; TEE, trans esophageal echocardiography; LVOT, left ventricular outflow tract.

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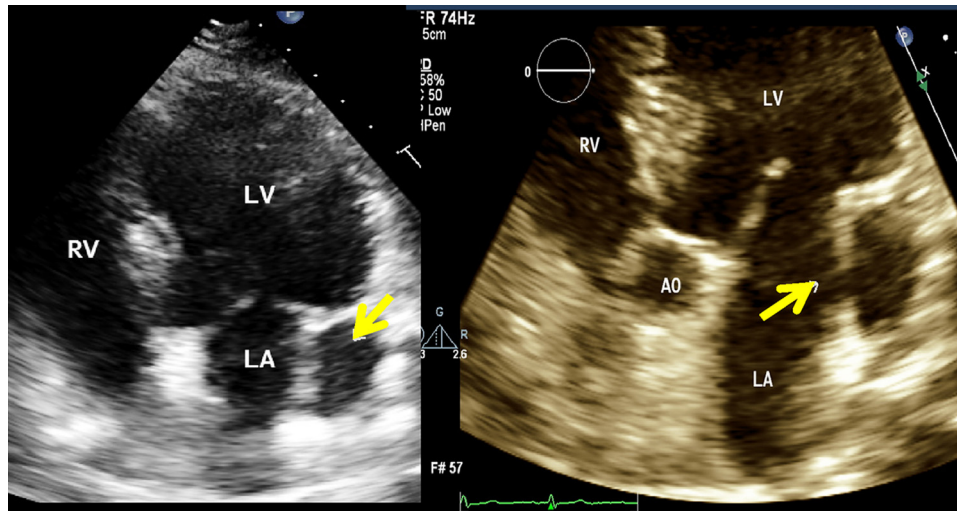


Fig. 1 – Trans-thoracic echocardiographic 4-chamber and 5-chamber views showing an additional chamber within the left atrium just above posterolateral mitral annulus (arrows). Yellow arrow in right image points toward the communicating channel.

of chest trauma, cardiac surgery, external cardiac massage or any prolonged infective state. Physical examination revealed average-built person, regular heart rate of 88 BPM, supine blood pressure 150/80 mmHg, quiet precordium and no evidence of heart failure. Plasma biochemistry was normal with random blood glucose of 158 mg%. A 12-lead electrocardiogram showed sinus rhythm and non-specific ST-T changes. Plain chest skiagram was unremarkable. MRI diffusion imaging showed a fresh infarct in the right cerebellar hemisphere

and an old lacunar infarct in the vermis. Detailed trans-thoracic and trans-esophageal echocardiography was performed. Trans-thoracic echocardiogram showed a chamber within the LA just above the posterolateral mitral annulus communicating with the main LA cavity through a 12 mm hole with to-and-fro flow (Fig. 1). Trans-esophageal echocardiographic views confirmed these findings (Figs. 2 and 3, video 1) and showed a flap of variable thickness originating from the left posterior atrio-ventricular junction and spreading up-

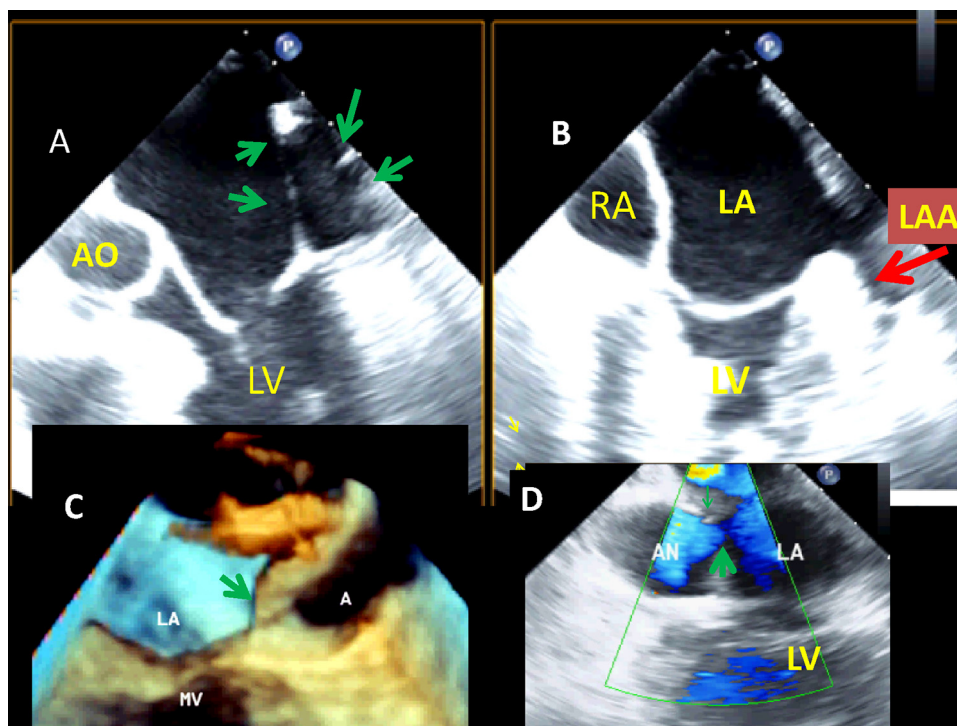


Fig. 2 – Multiple trans-esophageal views showing the pseudo-aneurysm (A, green arrows), separate left atrial appendage (red arrow) and communication between the true left atrial chamber and the false chamber on color flow mapping (D).

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