Left Atrial Mass Complicated with Ischemic Stroke and Right Atrial Mass Associated With Pulmonary Thromboembolism

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Abstract

Cardiac Myxoma are the most common primary cardiac tumors that are seen among middle aged female patients. Atrial fibrillation is more common among elderly people. Here we report a unique case of an 86-year-old male patient with atrial fibrillation, left atrial mass (probably myxoma) complicated with ischemic stroke, right atrial thrombus resulted with pulmonary thromboembolism concomitantly.

Keywords: Atrial mass; Ischemic stroke; Pulmonary thromboembolism

Introduction

Cardiac Myxoma (CM) are the most common benign primary cardiac tumors that can lead to many complications as embolization, intracardiac obstruction, conduction disturbances and occasionally may cause constitutional signs [1–3]. Left atrium is the most common place for CM and they are usually fatal unless surgically resected [4]. Venous thromboembolism (VTE) disease, the third leading cause of cardiovascular death, includes both pulmonary embolism (PE) and deep vein thrombosis (DVT) [5]. There are many predisposing factors for VTE. The risk of VTE increases with age and octogenarian has approximately eight fold higher risks than normal population [6]. Dehydration and immobility increase the risk of hemoconcentration and venous stasis as described in literature. We report a case of left atrial mass (probably myxoma) that cause cerebral infarction and right atrial mass (probably thrombi) accompany PE that is thought to occur due to diarrhea, decreased oral intake and immobility.

Case Report

An 86-year-old male patient admitted to emergency department with headache, dysarthria for eight hours and sudden onset of shortness of breath, palpitation and tachypnea for two hours. His medical history revealed diarrhea which started five days ago and lasted three days and decreased oral intake for five days. He was dehydrated on his physical examination, blood pressure was 100/65 mmHg and heart rate was 140/bpm.

Peripheral venous blood samples were drawn for analyzing the complete blood cell count (CBC) and main biochemical markers. CBC showed leuocytosis with neutrophil dominance and increased hemoglobin level (white blood cell count: 16800/mm³, hemoglobin: 17.5 g/dl, platelet 140000/mm³). Renal function was deteriorated and liver enzymes were elevated (creatinin: 1.57 mg/dl, urea: 91 mg/dl, aspartate aminotransferase: 108 U/L, alanine aminotransferase: 209 U/L, lactate dehydrogenase: 505U/L). Serum electrolytes, total and indirect bilirubin and albumin levels were within normal range. Troponin T level was slightly elevated as well. Arterial blood gas analysis showed hypoxemia and hypocapnia (pH: 7.43, pCO₂:25mm/Hg, pO₂: 55mm/Hg).

There were S1Q3T3, right bundle branch block and rapid ventricular response atrial fibrillation (AF) on surface electrocardiogram (ECG) (Figure 1). We performed transthoracic echocardiogram to evaluate right ventricular function and systolic pulmonary arterial pressure. Unexpectedly it revealed a huge left atrial round mass attached to lateral left atrial wall and it also revealed a right atrial mobile mass prolapsing into the right ventricle during diastole (Video 1, Figure 2). Ejection fraction was 60% without any wall motion abnormality, systolic pulmonary arterial pressure was 40-45 mmHg, mild degree mitral regurgitation and moderate degree tricuspid regurgitation were observed in the echocardiographic examination.

Figure 1: ECG showing S1Q3T3 pattern, AF and negative T wave on precordial derivations (V1-V4).
Figure 2: 2D transthoracic echocardiogram apical four-chamber view demonstrating round mass in the left atrium (LA, arrow) and mobile structure in the right atrium (RA, dotted arrow) prolapsing into the right ventricle (RV) during diastole. LV: left ventricle.

Computed tomographic pulmonary angiography (CTPA) demonstrated PE in both main pulmonary arteries, lobar and segmental branches (Figure 3). Cranial magnetic resonance imaging showed multiple acute ischemic lesions which were located both cerebrum, thalamus and cerebellum (Figure 4).

Figure 3: CTPA demonstrating a massive bilateral pulmonary thromboembolism (arrows).
Figure 4: Cerebellar magnetic resonance imaging showing acute ischemic lesion (thick arrow), cerebral magnetic resonance imaging showing thalamic (dotted arrow) and cortical (thin arrow) ischemic lesion.

Video 1: 2D transthoracic echocardiogram apical four-chamber view demonstrating left atrial mass attached to lateral wall and right atrial thrombus prolapsing into right ventricle during diastole.

Thrombolytic therapy is recommended in patients with hemodynamic decompensation PTE [7]. As ischemic signs and symptoms duration were eight hours for stroke, it had been decided to perform surgical resection of the left atrial myxoma and surgical extraction of the right atrial thromb. Patient transformed into the intensive care unit. While making surgical preparation sudden cardiac arrest comes over in the intensive care unit and there were no response to effective cardiopulmonary resuscitation and patient died.

Discussion

Venous stasis, hypercoagulability, immobilization, pregnancy, surgery, trauma, oral contraceptives and estrogen replacement therapy are well known strong risk factors for VTE [8]. Increased viscosity may occur due to dehydration, polycythemia or immobilization. There were venous stasis and hypercoagulability owing to diarrhea, decreased oral intake and immobilization in our patient. VTE is eight fold more common above eighty years old [6] as the same with our case. Even intravenous thrombolytic administration is the main treatment modality for hemodynamic unstable PE patient, ischemic stroke within three months is an absolute contraindication for thrombolytic therapy [7].

Atrial fibrillation, the most common sustained cardiac arrhythmia, is an established one of the most common risk factor for a first or recurrent stroke and increases with age (9,10). CM are the most common benign primary cardiac tumors that can lead to many complications as embolization, intracardiac obstruction, conduction disturbances and occasionally may cause constitutional signs [1–3]. It's predicted that CM cause up to 0.5% of ischemic strokes [11]. In our case we assumed that atrial fibrillation is responsible for ischemic stroke. We come across left atrial mass and right atrial thrombi while performing echocardiogram for reevaluating right ventricular function. Although cardiac myxomas mainly occur in the 3rd -6th decade of life [12], they must be suspected above eighty years old stroke patient who presented with multiple ischemic lesions even with the presence of AF concomitantly.

Conclusion

Two dimensional echocardiography is achievable, reproducible and cheap cardiac imaging modality and provides substantial advantages in detecting intra-cardiac tumors and thrombi. The sensitivity of the transthoracic echocardiography is around 90%
in detection of left atrial myxoma [11]. Although CM is one of the rarely occurring etiologic factors for ischemic stroke among elderly, it must be kept in mind and has to be ruled out patient who presented with ischemic stroke signs and symptoms.

**Author’s contribution**

All the authors contributed planning, conduct, and reporting of the work. All the authors are responsible for the overall content as guarantors.

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**Conflict of Interest**

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**References**


