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Cardiac

Pulmonary venous varix associated with mitral regurgitation mimicking a mediastinal mass: A case report and review of the literature

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ABSTRACT

Pulmonary vein varix is an unusual cause of a mediastinal mass on a chest radiograph. It may be found as an isolated malformation or as a sequela of pulmonary venous hypertension. We encountered a case presenting with left hemiparesis and a past medical history of rheumatic heart disease. The chest radiograph revealed a well-defined mediastinal mass that turned out to be a hugely dilated pulmonary vein on contrast enhanced computed tomography of the chest. The computed tomography of the brain and upper abdomen revealed bilateral cerebral infarction and splenic infarction. In the literature, one-third of the reported cases of pulmonary vein varix are acquired secondary to mitral valve disease.

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Introduction

Pulmonary venous varices may be congenital or acquired [1]. A major cause of acquired cases is mitral valve insufficiency leading to pulmonary venous hypertension, as in our case. On plain radiograph, it may mimic a mediastinal or perihilar mass. Multidetector computed tomography (CT) scan is crucial in determining its exact nature as it is noninvasive and provides important information on the accurate size and location [2]. Nevertheless, conventional angiography is still considered the

gold standard for definitive diagnosis [1,3]. Management of the causative factor has a positive influence on the reduction of the varix size, thereby providing relief [3,4].

Case report

A 38-year-old man presented to the emergency department with slurring of speech, facial drooping, and weakness of his left arm. On clinical anamnesis, he stated having

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persistent headache and fever 3 days prior. He also confirmed an existing rheumatic heart disease since childhood; but he was not followed up by a cardiologist up to the time of admission.

On physical examination, the patient was vitally stable. A pansystolic murmur was heard on auscultation over the mitral region radiating to axilla with a displaced apex beat to the sixth left intercostal space. He had left hemiparesis as well as left facial weakness. The electrocardiogram (ECG) showed a bigeminal rhythm.

An urgent brain CT scan without intravenous contrast displayed multiple scattered supra- and infra-tentorial cerebral infarctions with an element of small hemorrhage in the left frontal lobe. Hypodense edema and effacement of the cortical sulci were seen in the right frontoparietal region (Fig. 1). Following contrast administration, no parenchymal enhancement was detected.

The chest radiograph showed cardiomegaly with a well-defined large right paramediastinal mass, which was not silhouetting the right cardiac border (Fig. 2). For further evaluation, a multidetector CT chest examination was performed with intravenous contrast. The CT images revealed a massively dilated right lower pulmonary vein at the confluence with the left atrium, along with left atrial and left ventricular

dilatation. The rest of the pulmonary veins were mildly dilated as well. Additional CT images of the upper abdomen showed low attenuation areas in the spleen consistent with splenic infarction (Fig. 3).

Both transthoracic and transesophageal echocardiographic imaging demonstrated severe mitral regurgitation with small vegetations on the anteromedial leaflet. Marked dilatation of the left atrium and left ventricle was also detected.

The blood cultures demonstrated the presence of *Streptococcus gordonii*. The final diagnosis was set as infective endocarditis with thromboembolic stroke on a background of rheumatic heart disease with severe mitral valve regurgitation inducing pulmonary vein varix (PVV) and cardiomegaly. The patient improved after a course of antibiotics and multiple sessions of physiotherapy. Further surgical management with mitral valve replacement was considered.

Discussion

PVV is defined as a focal pathologic aneurysmal dilatation of the pulmonary vein [1]. It can be congenital or acquired. It may be seen in asymptomatic patients [5,6]. It has no gender

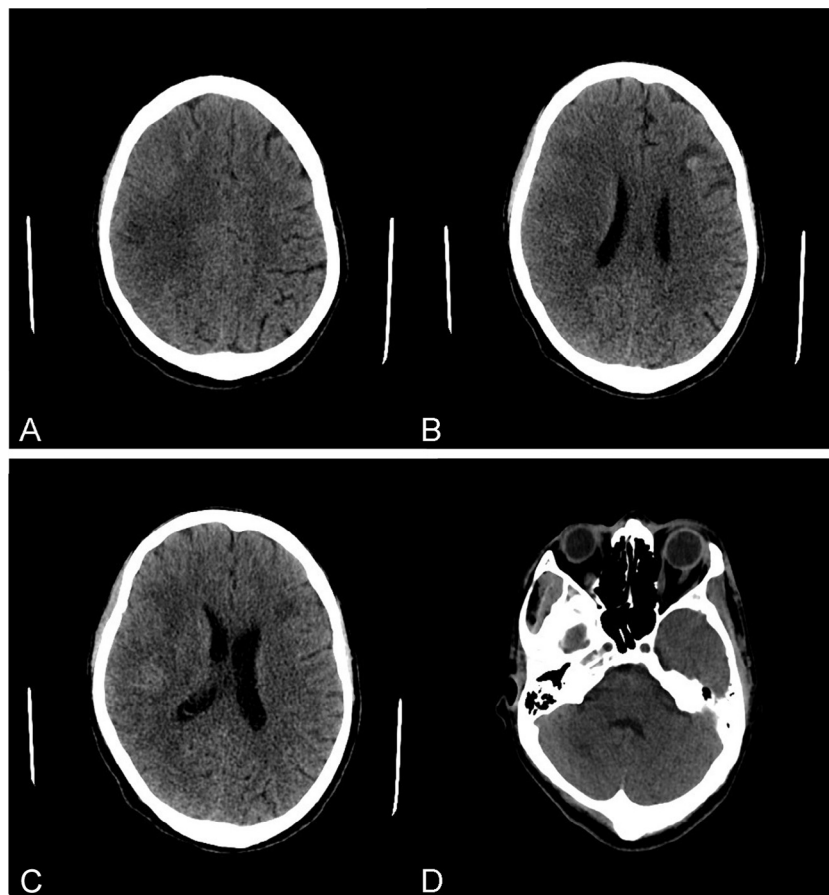


Fig. 1 – Plain brain CT axial slices: (A) Presence of ill-defined hypodensities in the gray-white matter junction in the right frontoparietal area. (B and C) Note the edema and effacement of the cortical sulci. There is a small ill-defined hypodense area seen in left frontal lobe at the gray-white matter junction containing small hemorrhagic component. (D) Display of a right cerebellar ill-defined hypodensity.

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