

IDIOPATHIC MULTIPLE PULMONARY ARTERY ANEURYSMS

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ABSTRACT

Idiopathic isolated pulmonary artery aneurysms are uncommon. We present a case of a young male with multiple idiopathic pulmonary artery aneurysms. He was extensively investigated and was found to have no known cause of pulmonary artery aneurysms.

Key words: Pulmonary Artery; Aneurysms; Idiopathic

Introduction

We wish to report an unusual case of a young adult male with multiple pulmonary artery aneurysms of probable idiopathic origin. He did not have signs and symptoms suggestive of any of known causes of pulmonary artery aneurysms at time of presentation to us.

Case Report

Young male aged 28 years presented with chronic chest pain, occasional hemoptysis and exertional breathlessness. On examination he was found to be moderately built and nourished. He did not have any other significant past history or family history. No significant previous illness or episodes of hospitalization were present. Physical examination did not reveal any significant findings. Complete blood picture, serum electrolytes and coagulation profile did not reveal any abnormality. Ultrasound of abdomen and color doppler evaluation of bilateral lower limbs veins were performed which were within normal limits. There was no evidence of acute or chronic thrombus in the lower limb veins. Inferior vena cava and iliac veins were normal with no

evidence of present or previous thrombosis. Echocardiography was performed which revealed pulmonary artery aneurysms. There was no clot or vegetations in the cardiac chambers. Chest radiograph was performed which revealed multiple rounded opacities in both lungs. A contrast enhanced multidetector Computed Tomography (CT) was performed for further characterization of the lesions. The contrast chest CT scan revealed multiple pulmonary artery aneurysms.(Fig. 1, 2).



Figure 1: Axial contrast enhanced maximum intensity projection image of chest showing bilateral pulmonary arterial aneurysms. Right lung aneurysm shows peripheral thrombus.

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Figure 2: Coronal contrast enhanced maximum intensity projection image of chest showing bilateral pulmonary aneurysms.

There was a large pseudo aneurysm arising from left inferior pulmonary artery along with multiple other smaller aneurysms in both lungs.

Main pulmonary artery was normal. (Fig. 3, 4).



Figure 3: Volume rendered images showing normal main pulmonary artery and bilateral pulmonary artery aneurysms.

There was no wall thickening or evidence of pulmonary arterial hypertension.. Bronchial arteries were normal. Lung parenchyma was normal with no demonstrable infective focus. There was no mediastinal adenopathy. Cardiac chambers were normal with no intra-cardiac or valvular vegetations.



Figure 4: Volume rendered images showing normal main pulmonary artery and bilateral pulmonary artery aneurysms. Soft tissue attenuating thrombosis of the left pulmonary artery aneurysm also seen.

Discussion

Aneurysms of larger pulmonary arteries are uncommon, while aneurysms arising from the distal branches are even more uncommon. Pulmonary artery aneurysms may occur along with congenital heart anomalies that are associated with pulmonary hypertension.¹ The acquired causes of pulmonary artery aneurysms include Behcet's disease, Takayasu's disease, Hugh Stovins syndrome, septic emboli, bacterial endocarditis, tuberculous cavities (Rasmussen's aneurysms), arteriosclerosis, trauma, cystic medial necrosis and vasculitis.¹ Idiopathic multiple pulmonary artery aneurysms as seen in our case are uncommon.

Behcet's disease which is a common cause of pulmonary artery aneurysms is a multisystem inflammatory disorder which has a chronic recurrent course and is of unknown etiology. Approximately in one fourth of patients of Behcet's disease involvement of aorta, pulmonary arteries or vena cava may be seen.² Multiple pulmonary artery aneurysms may be seen in Behcet's disease involving the main arteries or distal branches and may be unilateral or bilateral. Our patient did not have any clinical, lab or radiological evidence of Behcet's disease.

Cavitary pulmonary tuberculosis is another cause of pulmonary aneurysms. Aneurysmal dilatation of vessels in the walls of tuberculous cavities can lead to varying

degrees of hemoptysis. Multiple septic emboli and bacterial endocarditis are other causes of pulmonary arterial aneurysms.³ Extensive physical examination, laboratory investigations and echocardiography did not reveal any infective focus or bacterial endocarditis in our patient.

Another rare cause of pulmonary aneurysms is Hughes-Stovin syndrome which consists of multiple pulmonary artery aneurysms associated with peripheral venous thrombosis.⁴ Hughes Stovin syndrome and Behcet's disease have certain common features, however the classical symptoms of Behcet's disease like oral or genital ulcers, skin lesions, iritis or arthralgia are not seen in patients of Hughes Stovin syndrome.⁴ Our patient did not have any CT evidence of vasculitis in the lung, either in the pulmonary circulation or in the aorta and bronchial arteries. Pulmonary arterial wall thickening and enhancement seen in large vessel vasculitis was not present in our case.⁴ There were no areas of pulmonary oligemia or infarction. Small vessel vasculitis may present with alveolar hemorrhage, areas of ground glass opacification or air space consolidation.⁴ These findings of small vessel vasculitis were also not seen in our case, hence no cause could be identified for his multiple pulmonary aneurysms and was most probably idiopathic which is very unusual.

References

1. Enver Dayioglu, Kenan Sever, Murat Basaran, Eylul Kafali, Murat Ugurlucan et al. Idiopathic pulmonary artery aneurysm. *IJTCVS*. 2004; **20**:140-1.
2. Mehtap Tunaci, Berrin Ozkorkmaz, Atadan Tunaci, Ahmet gul, Gulgun Engin, Bulent Acunas. CT findings of Pulmonary Artery Aneurysms during treatment for Behcets disease. *AJR*. 1999; **172**:729-33.
3. Robert W. Charlton, Louis A. Du Plessis. Multiple Pulmonary artery aneurysms. *Thorax*. 1961; **16**: 364-71.
4. S. Herb, M. Hetzel, J. Hetzel, J. Friedrich, J. Weber. An unusual case of Hughes-Stovin syndrome. *Eur Respir J*. 1998; **11**:1191-3.
5. Katharina Marten, Pierre Schnyder, Eckart Schirg, Mathias Prokop, Ernst J. Rummeny and Christoph Engelke. Pattern-Based Differential Diagnosis in Pulmonary Vasculitis Using Volumetric CT. *AJR*. 2005; **184**:720-33