Medical Image of the Week: Pulmonary Artery Dilation

Figure 1. Axial section of the thoracic CT scan showing the massively dilated pulmonary trunk and artery.

The upper limit of the normal diameter of the main pulmonary artery on CT scan is 29 mm and of the right interlobar artery is 17 mm (1). A dilated pulmonary artery can arise from a variety of disease states. Most commonly from one of the many causes of pulmonary hypertension including idiopathic, previously termed primary, pulmonary artery hypertension (PAH). Other less common causes of pulmonary arterial dilation include pulmonary valvular stenosis, atrial septal defect, and idiopathic dilatation of the pulmonary artery.

Our patient is 66-year-old man with exertional dyspnea who was found to have a dilated pulmonary artery on thoracic CT scan during his work up (Figure 1). His case is suspected to be idiopathic dilatation (1). This is a rare disease with estimates around 0.6% of patients with known congenital heart disease. The estimates in the general population are unknown. There have been a few different diagnostic criteria proposed, but most contain the following:

1. Dilation of the pulmonary trunk
2. Absence of abnormal intracardiac or extracardiac shunts
3. Absence of chronic heart or lung disease
4. Absence of arterial diseases such as syphilis, arteriosclerosis or arteritis
5. Normal pressures in the right ventricle and pulmonary artery

Patients are usually asymptomatic or with minimal symptoms of dyspnea such as our patient. Rarely, it can present dramatically from compression of nearby structures. This includes constriction of the trachea or major branches or sudden cardiac death from compression of the left main coronary artery.

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Reference

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