Bronchogenic cyst compressing the pulmonary artery and the left atrium

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A 6-year-old boy was referred to our hospital because of the presence of a heart murmur. A chest roentgenogram did not demonstrate cardiomegaly or pulmonary congestion (Panel A). Echocardiographic examination revealed a membranous structure dividing the left atrium (Supplementary data online, Video S1). Both sides had the same echo density, indicating fluid density. Several possible diagnoses were initially possible, such as cor triatriatum, left atrial dissection, cardiac tumor, or an external mass. Colour Doppler examination showed no communication between the sides of the abnormal membrane, and there was no blood flow within the upper side of the membrane (Supplementary data online, Video S2). Therefore, the examination revealed an extracardiac homogeneous mass located on the cranial aspect of the left atrium, compressing the pulmonary artery and left atrium. The mass was shown as an echolucent space with a smooth surface (Panel B and C, asterisk). The right pulmonary artery was compressed and the peak systolic velocity was increased to 2.40 m/s (Panel D). In addition, there was an unusual antegrade diastolic flow across this narrowing, which indicates vessel compression in both systole and diastole. A chest computed tomographic scan was subsequently performed showing the presence of a 45 × 35 × 30 mm, thin-walled homogeneous lesion, which was not contrast-enhanced, located in the middle mediastinum behind the pulmonary artery and in front of the descending aorta (Panels E and F). Surgery was conducted via a right posterolateral thoracoscopic approach in the left lateral position (Panel G). The histopathological examination of the section revealed a bronchogenic cyst.

Supplementary data are available at European Heart Journal -- Cardiovascular Imaging online.

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