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## IMAGE

## Quadricuspid pulmonary valve in an adult patient: Discovered incidentally upon multidetector-row computed tomography

Valve pulmonaire quadricuspide chez un adulte : découverte fortuite par scanner multibarrettes

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### MOTS CLÉS

Cardiopathie congénitale ;  
Valves pulmonaires ;  
Scanner multibarrettes ;  
Valve pulmonaire quadricuspide

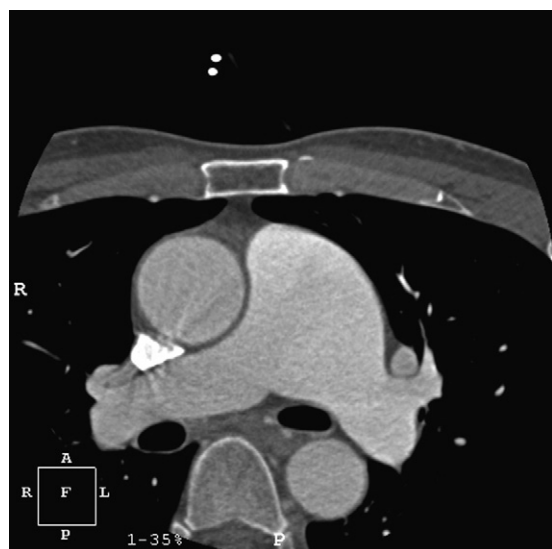
A 41-year-old man visited our institution due to mild atypical chest discomfort. Results of a 12-lead surface ECG showed a normal sinus rhythm with a heart rate of 51 beats/min. A chest X-ray showed a bulging contour of the left pulmonary hilum and inactive tuberculosis in the right upper lung. The patient denied having any systemic disease in the past, except old inactive tuberculosis in the right upper lung.

Transthoracic echocardiography revealed normal-sized cardiac chambers and normal left ventricular systolic function. Cardiac ECG-gated 64-section MDCT was planned for further evaluation. MDCT showed no significant coronary artery stenosis. However, dilatation of the pulmonary artery trunk was seen (Fig. 1) and the pulmonary valve showed four cusps of similar size, with a deficit of central coaptation, probably secondary to annular dilatation (Fig. 2 and Video 1). No other congenital heart anomalies were identified by MDCT. Medical treatment alone controlled his symptoms and he was discharged.

*Abbreviations:* ECG, Electrocardiogram; MDCT, Multidetector-row computed tomography; QPV, Quadricuspid pulmonary valve.

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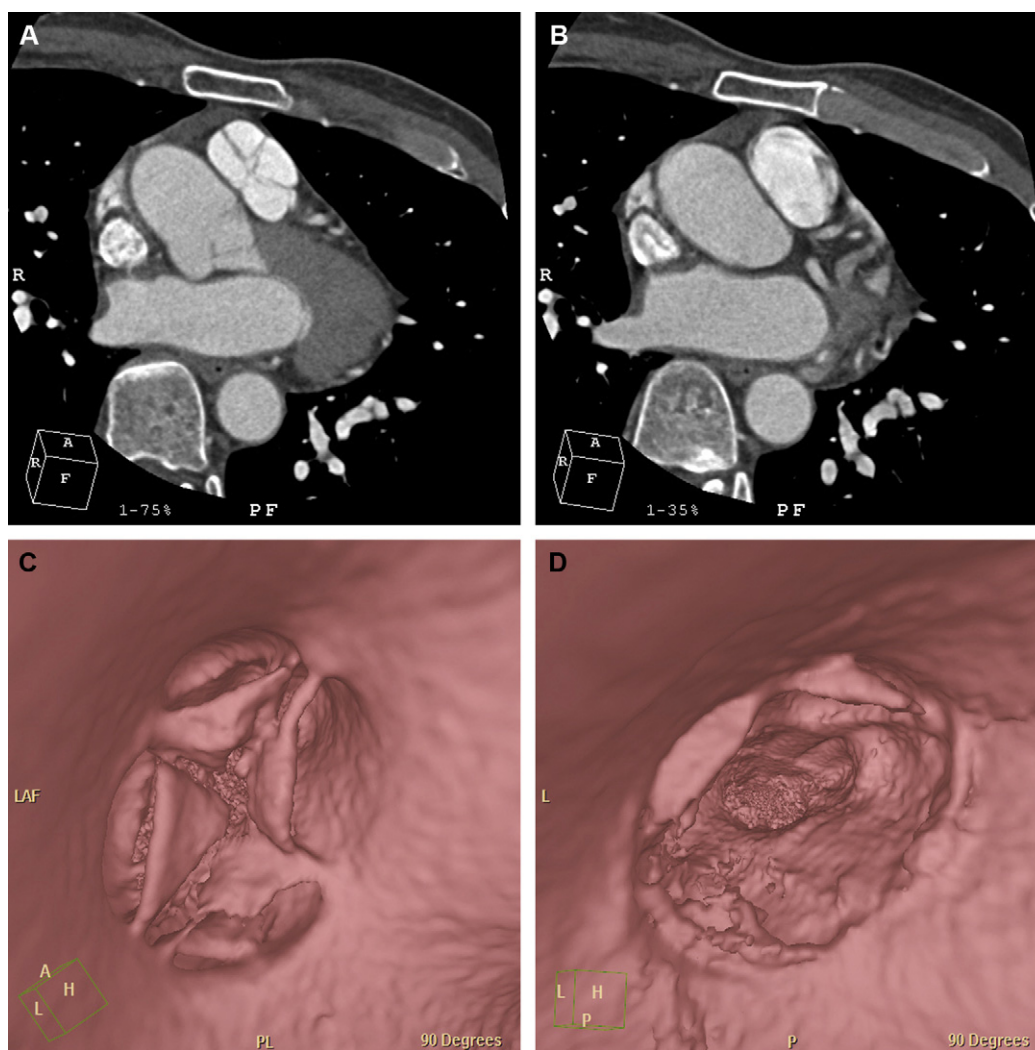
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**Figure 1.** Electrocardiogram-gated 64-slice multidetector-row computed tomography axial image showing dilatation of the pulmonary artery trunk.

QPV is a rare congenital anomaly occurring in one in 400–2000 patients, depending on the series reported. However, it is difficult to gauge its true incidence because most studies were retrospective necropsies and all reported findings have been incidental; very few cases have been documented in living patients by transthoracic echocardiography or magnetic resonance imaging. Diagnosis by two-dimensional echocardiography is very difficult, due to the anatomical disposition of the valve with respect to the thoracic wall, which makes correct visualization of the short axis of the valve impossible in most cases. However, recent advances in MDCT can facilitate the easy non-invasive diagnosis of this condition. By comparison with the bicuspid pulmonary valve, which is frequently associated with serious cardiac malformations, QPV is not commonly associated with additional clinical manifestations. Fortunately, the present case also had no other associated anomalies and no significant symptoms.

In summary, we report on a case of incidentally found QPV in a 41-year-old male patient who was studied by ECG-gated 64-slice MDCT.



**Figure 2.** Electrocardiogram-gated 64-slice multidetector-row computed tomography multiplanar reformatted and three-dimensional volume rendering images from mid-diastolic (A, C) and end-systolic (B, D) phases of the cardiac cycle. Serial images show the mildly thickened quadricuspid pulmonary valve with a deficit of central coaptation.

## **Disclosure of interest**

The authors declare that they have no conflicts of interest concerning this article.

## **Appendix A. Supplementary data**

Supplementary data (Video 1) associated with this article can be found, in the online version, at [doi:10.1016/j.acvd.2011.06.006](https://doi.org/10.1016/j.acvd.2011.06.006).