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Giant pulmonary artery aneurysm

Aneurisma gigante de la arteria pulmonar

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A 67-year-old male with a long-standing history of hypertension presented with intermittent episodes of mid-chest discomfort during moderate exertion. The electrocardiogram demonstrated right axis deviation and left posterior fascicular block (Fig. 1A). Echocardiography revealed a left ventricular ejection fraction of 62%, pulmonary valve regurgitation, and marked dilatation of the main pulmonary artery (Figs. 1 B and C). Cardiac computed tomography (CT) excluded coronary artery disease and identified a giant pulmonary artery aneurysm (PAA) measuring 79 × 73 mm (Fig. 2). Given these findings, the patient was referred to the cardiovascular surgery department for repair.

PAA is a rare vascular abnormality associated with increased wall stress and defined as a focal dilatation of the pulmonary artery > 40 mm, most commonly affecting the main pulmonary trunk[1,2]. Its detection has increased due to the broader use of non-invasive imaging, particularly by CT[1]. PAAs > 60 mm or with growth > 2 mm/year carry the risk of dissection, airway or coronary compression, and acute coronary syndromes[1]. Causes include congenital heart disease, vasculitis, infections, connective tissue disorders, pulmonary valve anomalies, pulmonary hypertension, chronic thromboembolism,

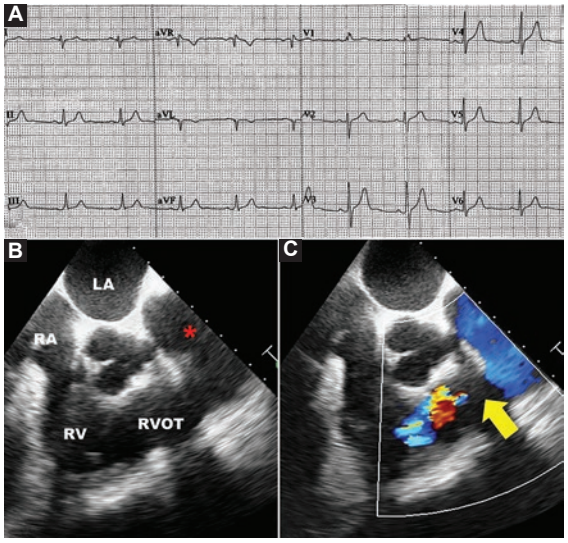

Figure 1. Initial evaluation. **A:** electrocardiogram showing sinus rhythm with right axis deviation and left posterior fascicular block. **B** and **C:** echocardiography: midesophageal short-axis view at the level of the aortic valve, demonstrating a dilated main pulmonary artery (red asterisk) and pulmonary valve regurgitation (yellow arrow). LA: left atrium; RA: right atrium; RV: right ventricle; RVOT: right ventricular outflow tract.

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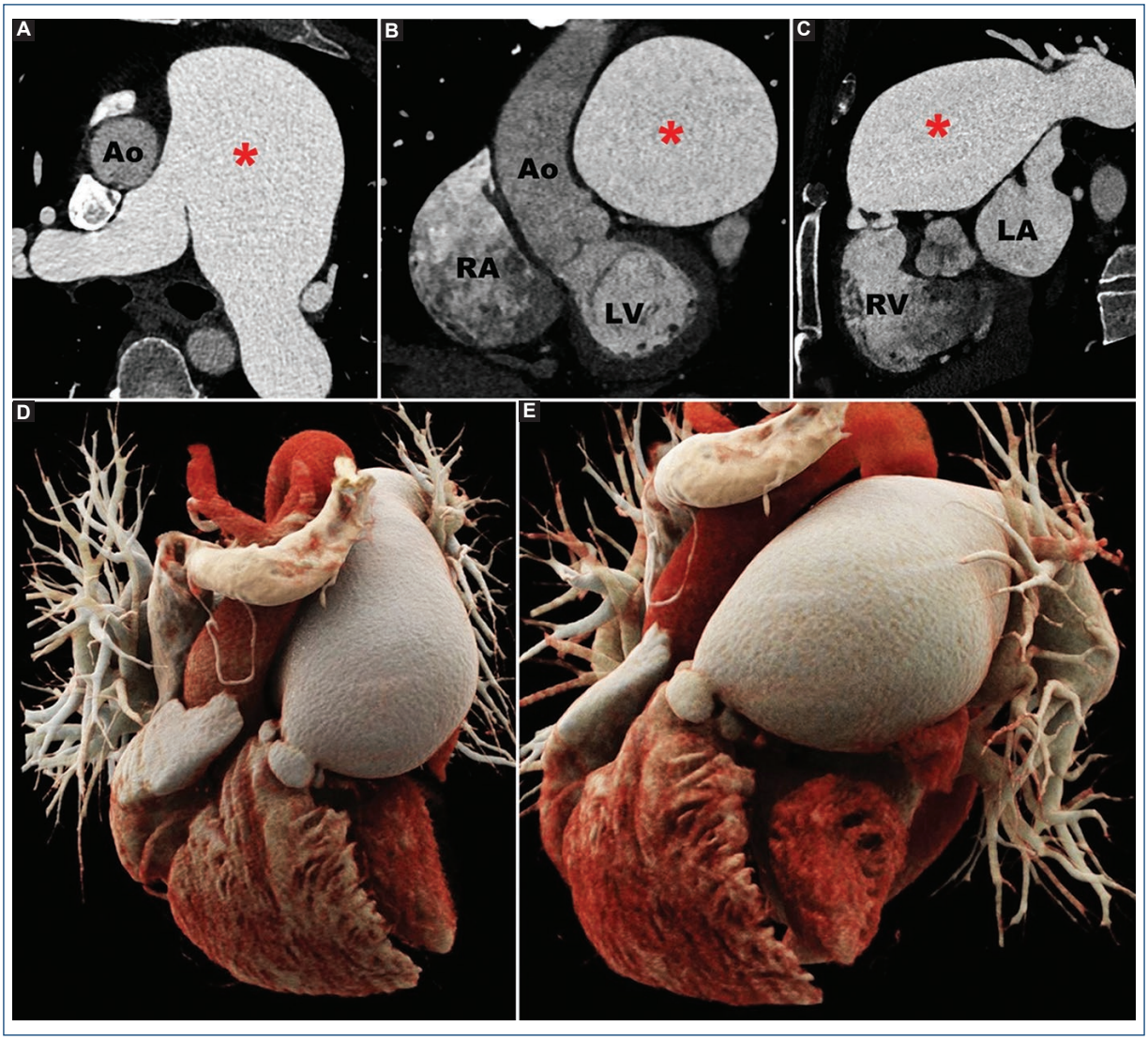

Figure 2. Cardiac computed tomography angiography showing a giant pulmonary artery aneurysm (red asterisk). **A:** MPR axial view. **B:** MPR coronal view. **C:** MPR sagittal view. **D** and **E:** volume-rendered reconstructions. Ao: aorta; LA: left atrium; LV: left ventricle; MPR: multiplanar reconstruction; RA: right atrium; RV: right ventricle.

malignancy, and idiopathic dilation[1,2]. Electrocardiography may show right heart enlargement, and echocardiography evaluates biventricular function and associated anomalies[3]. CT or magnetic resonance imaging confirms the diagnosis and assesses anatomical relationships[1]. Many cases are clinically silent, but symptoms such as dyspnea, cough, hemoptysis, or chest pain may occur[3]. In the absence of guidelines, treatment is individualized[1]. Surgery is indicated in symptomatic patients or with aneurysms exceeding 5.5-6 cm[2,3].

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Conflicts of interest

The authors declare that they have no conflicts of interest.

Ethical considerations

Protection of humans and animals. The authors declare that no experiments involving humans or animals were conducted for this research.

Confidentiality, informed consent, and ethical approval. The authors have followed their institution's confidentiality protocols, obtained informed consent from all patients, and secured approval from the Ethics Committee. SAGER guidelines have been followed as applicable to the nature of the study.

Declaration on the use of artificial intelligence. The authors declare that no generative artificial intelligence was used in the writing or creation of the content of this manuscript.

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