A 40-year-old male with a history of i.v. drug abuse was referred to our hospital because of dyspnoea. He had a history of pulmonary valve replacement for native valve endocarditis in 2001 and pulmonary homograft was implanted 2 years later because prosthetic endocarditis. The patient complained of dyspnoea on moderate exertion (New York Heart Association functional class II/IV) and the physical examination revealed a systo-diastolic murmur best heard at the left upper sternal border with two distinct components: high-frequency holosystolic and low-frequency protodiastolic murmur. Chest radiography showed a rounded well-defined mass in the left lung that communicates with aortopulmonary window (Panel A). Transthoracic echocardiography showed a dilated right ventricle with severely depressed systolic function as well as pulmonary homograft dysfunction with severe stenosis (maximum gradient 64 mmHg) and insufficiency. Transoesophageal echocardiography confirmed these findings and also showed marked dilation of the main pulmonary artery (Panel B). Moreover, cardiac magnetic resonance was performed showing the presence of a large pseudoaneurysm (78 × 73 mm of diameter) communicating with the main pulmonary artery distal to the valvular plane (Panels C and D, Supplementary data online, Videos S1 and S2). The patient underwent surgery and a new pulmonary homograft was implanted, excluding the aneurysm sac. He remained asymptomatic at 2-month follow-up.

Pseudoaneurysm of the main pulmonary artery is a rare complication after homograft placement. The clinical presentation ranges from asymptomatic patients with a new pulmonary mass to dyspnoea, chest pain, and life-threatening haemorrhage. The approach is mostly surgical and resection of the mass should be conducted to avoid serious complications.

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