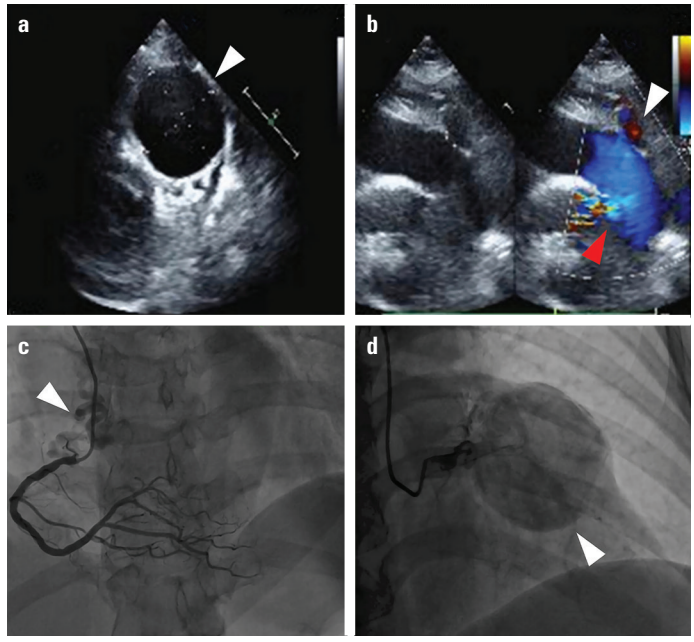

Figure 1. Transthoracic color Doppler echocardiography shows widening of the left coronary artery and a tumor-like dilation outside the pulmonary artery measuring approximately 51×43 mm (white arrow) (a) and (b). The distal end is connected with the inside of the pulmonary artery. The fistula was approximately 10 mm in diameter and approximately 14 mm from the pulmonary valve annulus. The red arrow indicates a fistula and the white one indicates the left coronary artery (b). Coronary angiography: White arrows show right coronary artery fistula (c) and anterior descending giant coronary artery (d)

Bilateral coronary artery–pulmonary artery fistulas with a giant coronary aneurysm

A 61-year-old female patient visited the local hospital 1 month before due to lumbar disc herniation and sciatic nerve compression. After treatment with "mannitol and dexamethasone" by intravenous infusion, she had dizziness, palpitations, flushing, and sweating, among other symptoms. Her blood pressure was 150/87 mm Hg, and the abovementioned symptoms lasted for about half an hour. After 3 days of infusion, the patient still experienced dizziness, palpitations, and sweating; her symptoms relieved about half an hour after administering nitroglycerin. These symptoms often occurred between 7 and 9 a.m. and had nothing to do with the patient's daily activities or eating habits. The patient was referred to our hospital for further treatment. The electrocardiogram was normal, and transthoracic color Doppler echocardiography (TTDE) showed left coronary artery–pulmonary artery fistula and left coronary artery aneurysm dilation (Fig. 1a and 1b). Coronary angiography showed bilateral coronary artery fistula and anterior descending giant coronary aneurysm (Fig. 1c and 1d, Video 1). Coronary computed tomography angiography (CCTA) showed bilateral coronary artery–pulmonary artery fistulas with anterior descending coronary artery aneurysm (Fig. 2a–2d, Video 2); thus, the patient underwent surgery. During the surgery, the inlet and outlet of the left and right coronary artery–pulmonary artery fistulas were fully dissociated and ligated using the lateral wall forceps to clamp the aneurysm; then, we cut open the coronary aneurysm and found the thrombosis. Finally, we closed the aneurysm stump by suture. Pathological examination was performed after aneurysm surgery (Fig. 2e). We noted that the coronary artery was not clipped during the surgery. CCTA was performed again 1 week after surgery, which revealed that the coronary artery–pulmonary artery fistula and coronary artery aneurysm had disappeared (Fig. 2f, 2g, 2h; Video 3). Thus, the patient was discharged quickly, and no further complications occurred.

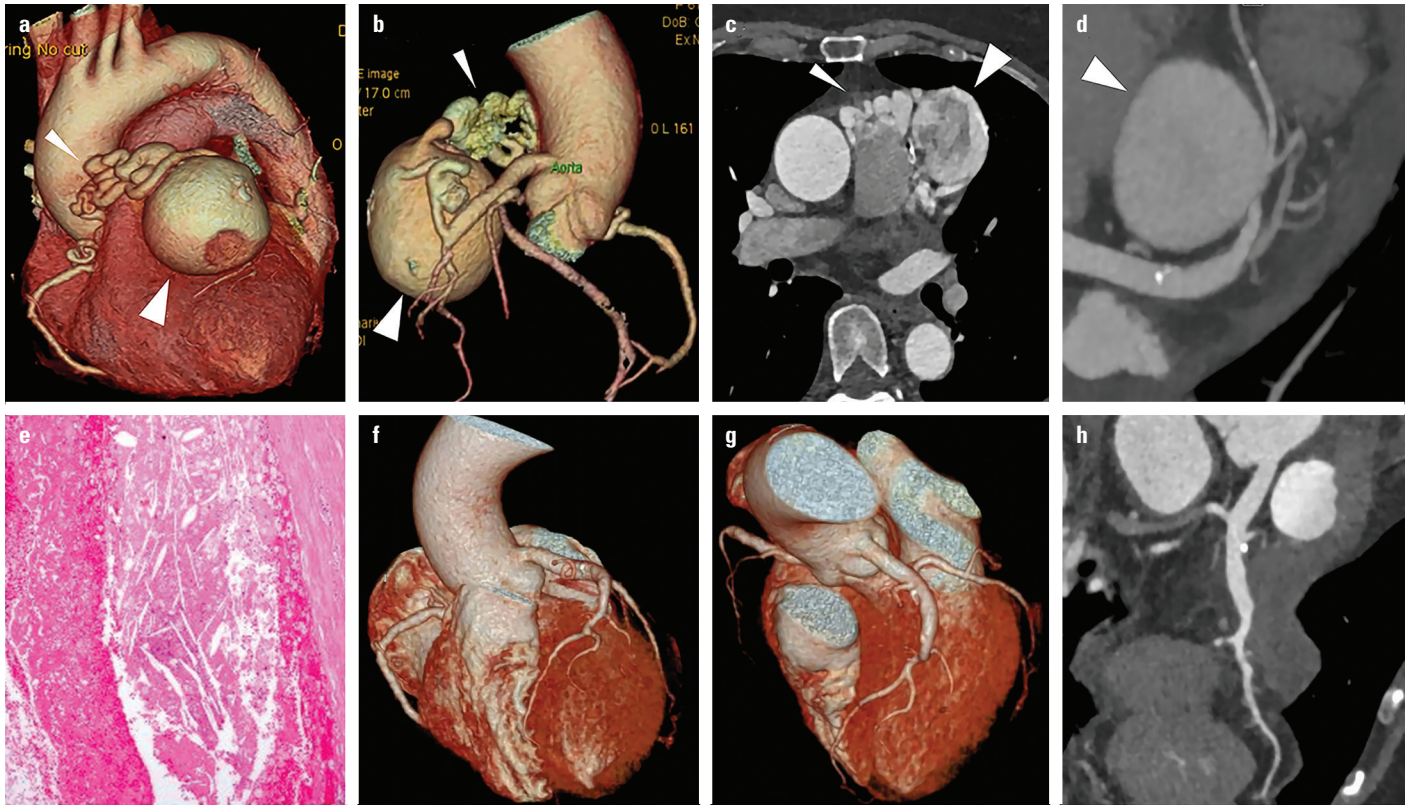

Figure 2. Volume reconstruction (VR) showing that the left anterior descending coronary artery and the right coronary artery each emit a blood vessel, which is upwardly distorted and traveled. The distal end is connected with the left anterior wall of the main pulmonary artery (a) and (b); thin and thick arrows indicate the coronary artery fistula and aneurysm, respectively; multiplane recombination (MPR) shows a fistula aneurysm thrombosis of 53 mm diameter (c) and (d), thin and thick arrows indicate coronary artery fistula and aneurysm, respectively. Coronary computed tomography angiography shows that the coronary artery–pulmonary artery fistula and giant aneurysm disappear after surgery, VR (e) and (f), CPR (curved planar reconstruction) (h). Pathological examination shows disappearance of the middle wall of the coronary artery aneurysm, with local secondary thrombosis and atherosclerosis (g)

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Video 1. Coronary angiography revealing a right coronary artery fistula and a large anterior descending coronary artery aneurysm

Video 2. Preoperative CT image of the bilateral coronary artery–pulmonary artery fistula and giant coronary aneurysm

Video 3. Postoperative CT findings of the bilateral coronary artery–pulmonary artery fistula and giant coronary aneurysm

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