

# From pneumonia to two cardiac surgeries: Aortic valve endocarditis complicated by an aortic root abscess, atrioventricular block, and postoperative left ventricular pseudoaneurysm

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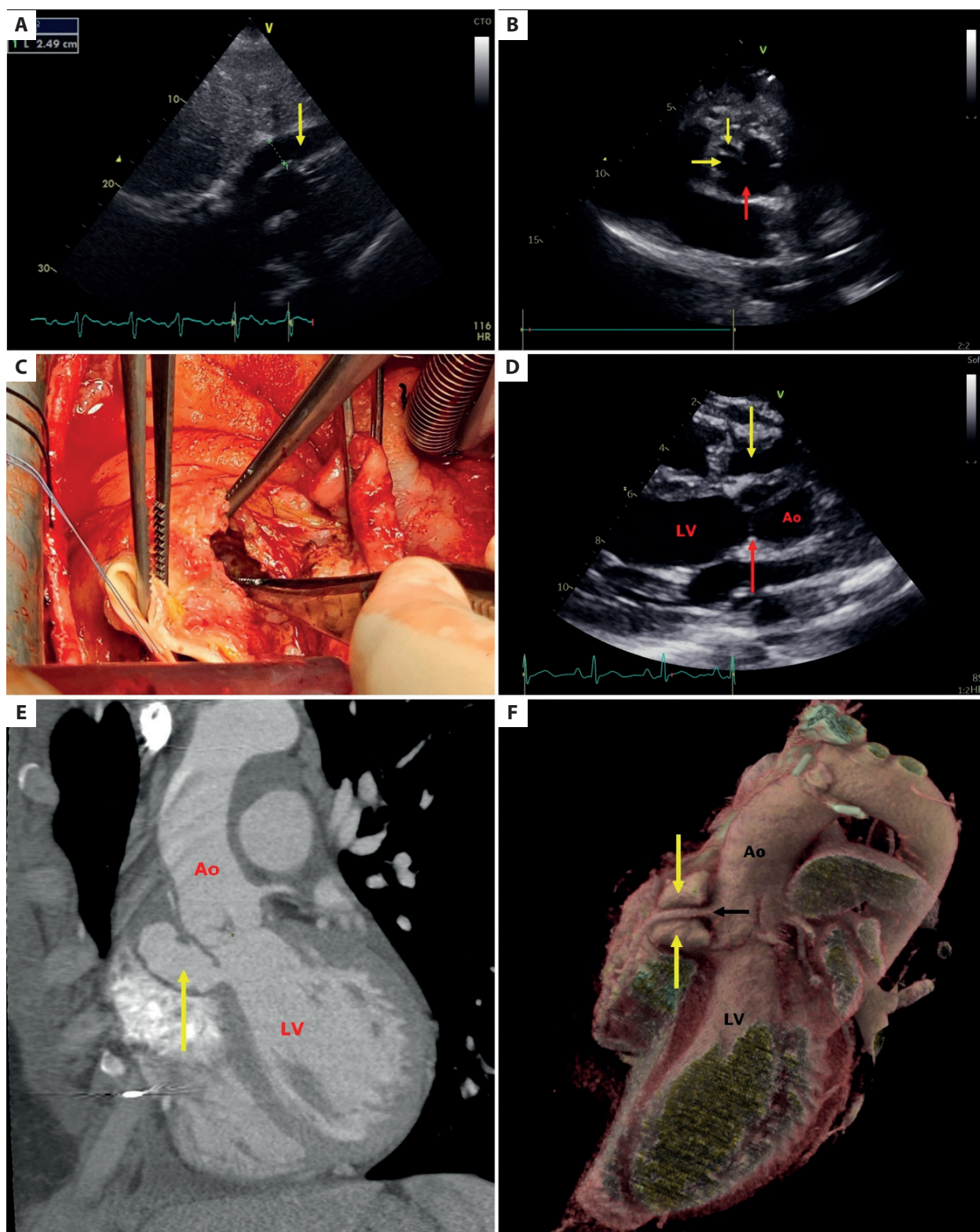
A 25-year-old man with a history of ulcerative colitis was admitted to the internal medicine department with pneumonia. Blood cultures revealed *Staphylococcus aureus*. After ten days of targeted antibiotic therapy, the patient was discharged home in good general condition. Three days later, he was readmitted with fever and chest pain. Computed tomography (CT) showed a pericardial effusion. Since we suspected infective endocarditis, the patient was transferred to the cardiology department without delay [1].

Echocardiography (ECHO) revealed massive pericardial effusion with signs of impending cardiac tamponade and lesions within the aortic and mitral valves. During an ultrasound scan, the patient developed cardiac tamponade and required immediate pericardiocentesis. After the procedure, the patient's hemodynamic condition stabilized. The antibiotic therapy (cloxacillin, clindamycin, and gentamicin) was introduced on prior antibiogram. A complete echocardiogram showed infective endocarditis of the aortic root and valve with cavitation after drained abscess and moderate aortic regurgitation. The left ventricle was not enlarged and showed normal ejection fraction. Electrocardiogram monitoring revealed conduction abnormalities: initially, second-degree atrioventricular block Mobitz type I, progressing to Mobitz type II in a few hours. The cardiac operative risk according to EuroSCORE II was

estimated as 2.5% and — with the signs of uncontrolled infection — the patient was qualified for urgent surgery [2].

Intraoperative evaluation revealed massive aortic valve destruction and an aortic leaflet abscess puncturing the pericardial sac. A bioprosthetic aortic valve was implanted, and the aortic-pericardial fistula was closed. The patient was transferred to the cardiology department in a stable condition. Initial echocardiography showed unremarkable bioprosthetic valve function with no pericardial effusion. In the following days, antibiotic therapy was successfully continued, and blood cultures were negative. Subsequent ECHO showed an area of infiltration in the valve annulus and left ventricular outflow tract (LVOT) as well as a partially drained abscess with mobile masses connecting the LVOT (fistula) and the parasternal region of the valve (leak). A cardiac CT scan showed a pulsating cavity after drainage of the perivalvular abscess located at the level of the end segment of the LVOT and aortic pad (prosthesis), communicating with the LVOT directly. The watch-and-wait approach was adopted. The patient's condition remained stable over the days, following the completion of a 6-week cycle of antibiotic therapy [3].

Two months later, the patient was readmitted to the cardiology department with a clinical diagnosis of pericarditis. Echocardiography revealed increased pericardial



**Figure 1.** Infective endocarditis imaging studies. **A.** Echocardiography, subcostal view. Pericardial effusion. The yellow arrow indicates pericardial effusion. **B.** Echocardiography, short-axis parasternal view. The red arrow indicates the aortic valve. Yellow arrows indicate cavities resulting from the drained abscess. **C.** Intraoperative image (first surgery). **D.** Echocardiography, parasternal long-axis view; the red arrow indicates the aortic valve bioprosthesis. The yellow arrow indicates the pseudoaneurysm of the left ventricular outflow tract. **E.** Computed tomography. The yellow arrow indicates the LVOT pseudoaneurysm. **F.** Computed tomography. The black arrow indicates the ostium of the right coronary artery. Yellow arrows indicate the structure of the LVOT pseudoaneurysm

Abbreviations: Ao, aorta; LV, left ventricle; LVOT, left ventricular outflow tract

effusion without cardiac chamber compression. Follow-up cardiac CT showed a small increase in the volume of the LVOT pseudoaneurysm. After pharmacological therapy, the patient was referred back to the cardiac surgery department for further treatment. Surgical correction of the LVOT pseudoaneurysm was performed. The procedure was successful, however, intermittent grade III atrioventricular block was observed in the postoperative period. The patient was transferred to the cardiology department for a classic dual-chamber pacemaker implantation. The device was placed using an antimicrobial pouch. The procedure and perioperative period were uneventful. Control echocardiography did not reveal any significant abnormalities. The patient was discharged home in good general condition.

### Article information

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