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

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

**Short title:** Infective endocarditis — severe complications

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A 25-year-old man with the 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 a fever and chest pain. Computed tomography (CT) showed a pericardial effusion. Suspecting infective endocarditis, the patient was transferred to the cardiology department without delay [1].

Echocardiography revealed massive pericardial effusion with signs of impending cardiac tamponade and lesions within the aortic and mitral valves. During the 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 non-enlarged and showed a normal ejection fraction. Electrocardiogram monitoring revealed conduction abnormalities: initially II degree atrioventricular block Mobitz type I, progressing to Mobitz type II within 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 post-operatively in a stable condition. Initial echocardiography revealed unremarkable bioprosthetic valve function with no pericardial effusion. In the following days, antibiotic therapy was successfully continued, 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 LVOT end segment and aortic pad (prosthesis), communicating with the LVOT directly. 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 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 with MAS symptoms was observed in the postoperative period. The patient was transferred to the home ward 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**

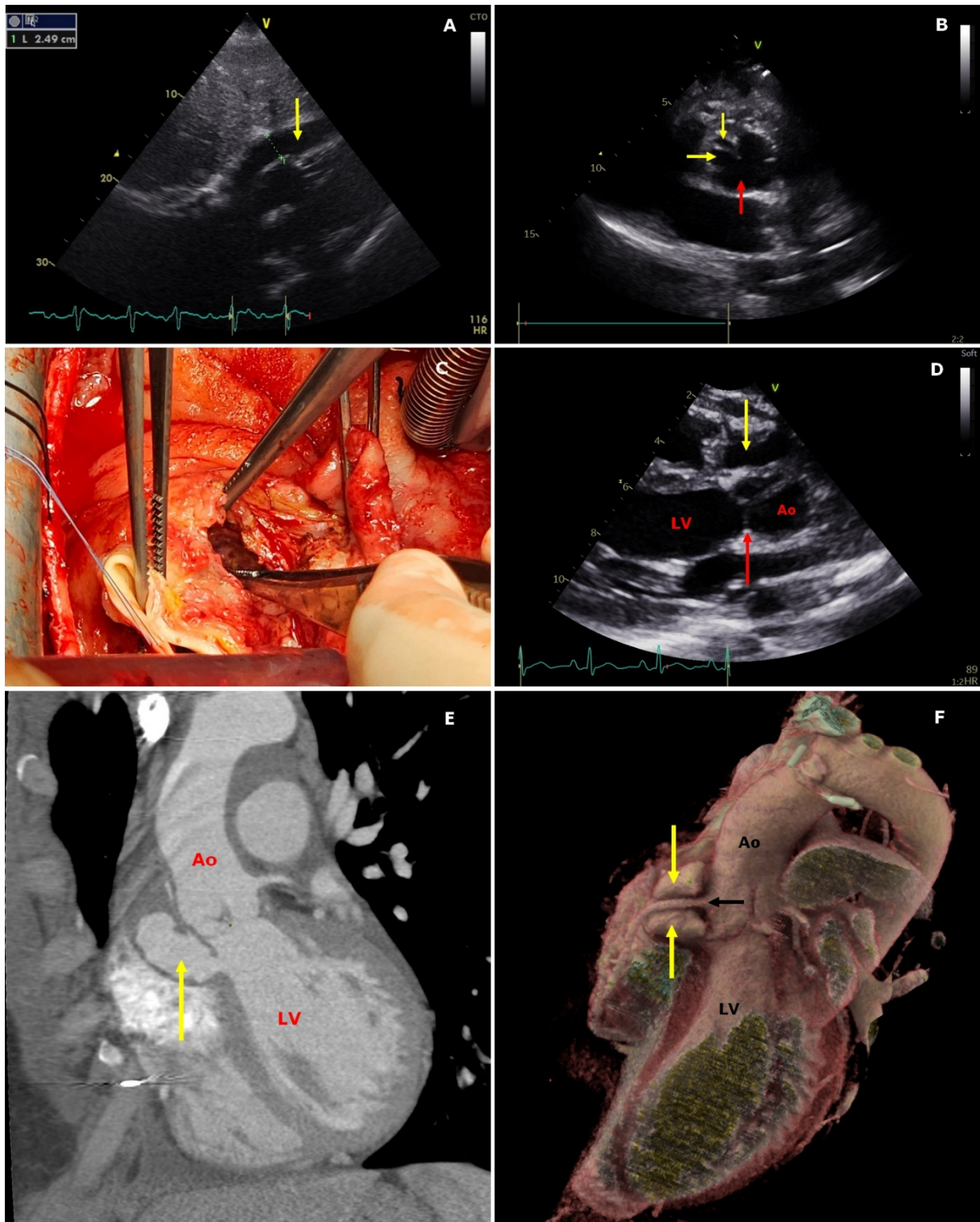
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## REFERENCES

1. Morawiec R, Matuszewska-Brycht O, Maeser P, et al. Decreasing numbers of valve-related infective endocarditis cases. An urgent call to action to improve diagnostic pathways: A retrospective tertiary center perspective (2015-2022). *Pol Heart J.* 2024; 82(1): 79–81, doi: [10.33963/v.kp.96587](https://doi.org/10.33963/v.kp.96587), indexed in Pubmed: [37660374](https://pubmed.ncbi.nlm.nih.gov/37660374/).
2. Morawiec R, Matuszewska-Brycht O, Maeser P, et al. Infective endocarditis in a 52-year-old male patient with vegetations of all four heart valves and extremely high cardiac operative risk. *Kardiol Pol.* 2022; 80(2): 229–230, doi: [10.33963/KP.a2021.0191](https://doi.org/10.33963/KP.a2021.0191), indexed in Pubmed: [34970989](https://pubmed.ncbi.nlm.nih.gov/34970989/).
3. Delgado V, Ajmone Marsan N, de Waha S, et al. ESC Scientific Document Group. 2023 ESC Guidelines for the management of endocarditis. *Eur Heart J.* 2023; 44(39): 3948–4042, doi: [10.1093/eurheartj/ehad193](https://doi.org/10.1093/eurheartj/ehad193), indexed in Pubmed: [37622656](https://pubmed.ncbi.nlm.nih.gov/37622656/).



**Figure 1.** Infective endocarditis imaging studies. **A.** Echocardiography, subcostal view. Pericardial effusion. Yellow arrow indicates pericardial effusion. **B.** Echocardiography, short-axis parasternal view. Red arrow indicates aortic valve. Yellow arrows indicate cavities resulting from drained abscess. **C.** Intraoperative image (the first surgery). **D.** Echocardiography, parasternal long-axis view; red arrow indicated aortic valve bioprosthesis. Yellow arrow indicates the pseudoaneurysm of the left ventricle outflow tract. **E.** Computed

tomography. Yellow arrow indicates the LVOT pseudoaneurysm. **F.** Computed tomography. 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 ventricle outflow tract