

Cardiac abscess after aneurysmectomy of the right coronary artery

Sağ koroner arter anevrizmektomisi sonrası kardiyak apse

Mustafa Gerçek[✉], Jochen Börgemann[✉]

Heart Center Duisburg, Clinic for Cardiac Surgery and Pediatric Cardiac Surgery, Duisburg, Germany

We present the case of a 72-year-old male patient with a three-vessel coronary artery disease (CAD) and slight left main stenosis. The patient previously underwent percutaneous coronary intervention with the insertion of a drug-eluting stent to treat an ostial stenosis of the right coronary artery (RCA). However, the patient now presented with subtotal ostial restenosis and a 14 to 9-mm aneurysm in the proximal RCA (Figure 1a). Coronary artery bypass grafting (CABG) and aneurysmectomy were planned. To assess the RCA anatomy, the proximal RCA was exposed, and aortotomy was performed to inspect the RCA ostium and lumen. The stent in the proximal RCA was found to be twisted and inseparably intergrown through the coronary artery wall to the epicardium. To maintain myocardial perfusion, CABG was performed to the posterior descending artery. The aneurysm was then excised, and the resulting cavity was reconstructed using a bovine pericardial patch. In the early postoperative period, ventricular fibrillation occurred, but was successfully resuscitated without any residual complications. The patient recovered quickly and was discharged on postoperative Day 9.

Two months after surgery, the patient developed recurrent fever and bacteremia (*Klebsiella pneumoniae*). Echocardiography revealed an 80 to 80-mm paraventricular formation adjacent to the right ventricle without any detectable flow (Figure 1b). Positron emission tomography-computed tomography confirmed the presence of a cardiac abscess at the former RCA aneurysm site (Figure 1c, d). Surgical treatment of the abscess was planned to prevent septic spread. Access to the abscess required sacrificing the medial part of the affected venous bypass graft to the posterior descending artery. The abscess was exposed,

completely removed, and thoroughly irrigated. The resulting cavity was once again reconstructed using a bovine pericardial patch. To restore myocardial perfusion of the right ventricle, a newly harvested venous graft was used to bridge the broken venous bypass graft between its proximal and distal parts. A triple antibiotic strategy, based on the current guidelines for endocarditis treatment,^[1] was administered and adjusted according to the antibiogram to treat the infection. The patient had an uneventful postoperative recovery and was discharged in good general condition on postoperative Day 8.

Aneurysmal malformations of coronary arteries are rare and mostly coincidental findings in coronary angiography or tomography.^[2] The RCA is commonly affected without any traceable predictors.^[3] Due to the risk of thrombosis within the aneurysm and concomitant CAD, interventional or surgical removal of the aneurysm is performed.^[3,4] In particular, complications, such as cardiac abscesses, are challenging due to the lack of standardized therapeutic approaches with sufficient evidence. However, after aneurysm excision, the resulting cavity may serve as a predisposed area for fluid accumulation as bacterial reservoir and subsequent development of a cardiac abscess. Aggressive antibiotic strategies are necessary, since abscesses can be encapsulated and exposed to poor perfusion. Considering the risk of bacterial mediastinitis or rapid development of a septic spread, and acknowledging the limited evidence on the treatment of this pathology, we strongly recommend surgical removal and debridement of the abscess, along with appropriate antibiotic therapy in accordance with endocarditis treatment.

Corresponding author: Mustafa Gerçek.

E-mail: mustafa.gercek@evkln.de

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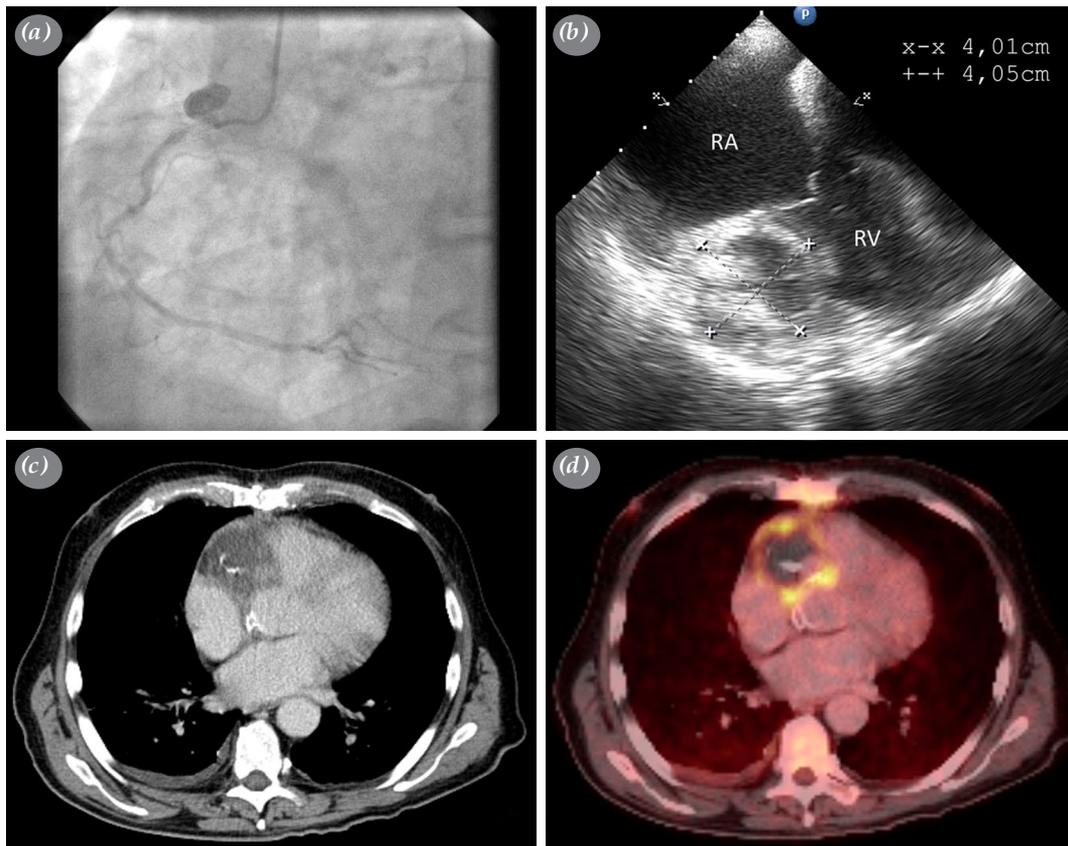


Figure 1. Cardiac abscess after aneurysmectomy of the right coronary artery. **(a)** Preoperative image of the RCA with ostial stenosis and aneurysm. **(b)** Transthoracic echocardiography image of the abscess two month after initial operation (Aneurysmectomy, reconstruction by bovine pericardial-patch and venous bypass on distal RCA). **(c, d)** Computed tomography and positron emission tomography-computed tomography of the abscess.

RCA: Right coronary artery.

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