

An adult patient with the ruptured aneurysm of mitral valve posterior leaflet

Posteriyor mitral kapak anevrizma rüptürü olan bir yetişkin hasta

A 34-year-old man was admitted to our hospital with exertional dyspnea. Past medical history was significant for asymptomatic mitral valve prolapse, moderate mitral regurgitation and chordae tendinea rupture diagnosed two years previously. He had no history of palpitation or fever. Physical examination revealed apical 3/6 grade systolic murmur. Electrocardiography was in normal sinus rhythm. 2D and 3D transthoracic echocardiography (TTE) showed that left ventricular ejection fraction was 67%, left heart chambers were dilated and a saccular aneurysm bulging towards the left atrium at the posterior mitral leaflet. In color Doppler examination, there was a regurgitant flow across the aneurysm, suggesting rupture. (Fig. 1A and Video 1. See corresponding video/movie images at www.anakarder.com) There was no evidence of infective endocarditis. Real-time three-dimensional transesophageal echocardiography (RT3D TEE) confirmed the TTE findings. In addition, it revealed the bulging into the left atrium was in both systole and diastole, confirming the diagnosis of aneurysm instead of prolapsus. (Fig. 1B, C, 2A, B, 3A, B and Video 2, 3, 4. See corresponding video/movie images at www.anakarder.com). The patient was scheduled to elective surgical operation.

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Video 1. Apical four chamber window of TTE shows saccular aneurysm of mitral valve
TTE - transthoracic echocardiography

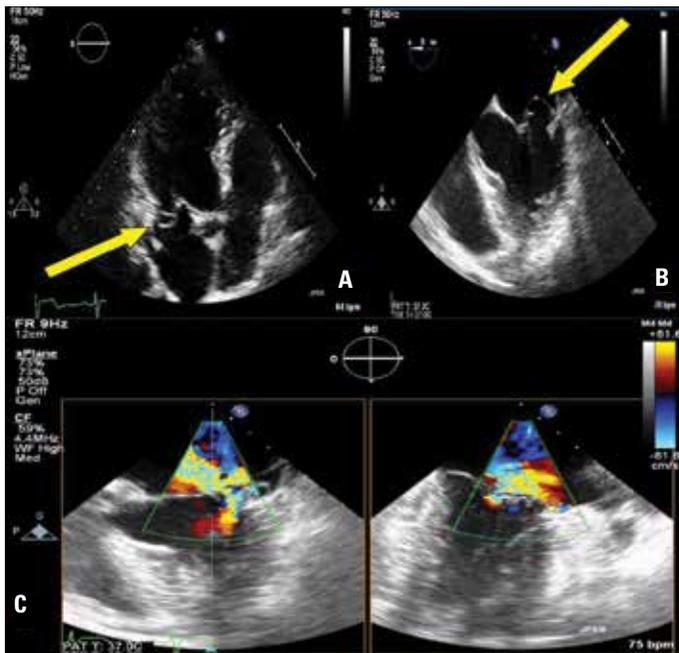


Figure 1. A) Apical four chamber window of TTE showing saccular aneurysm of mitral valve (arrow), **B)** TEE showing posterior mitral valve aneurysm. **C)** Transesophageal biplane color-Doppler images showing severe eccentric mitral regurgitation

TTE - transthoracic echocardiography, TEE - transesophageal echocardiography

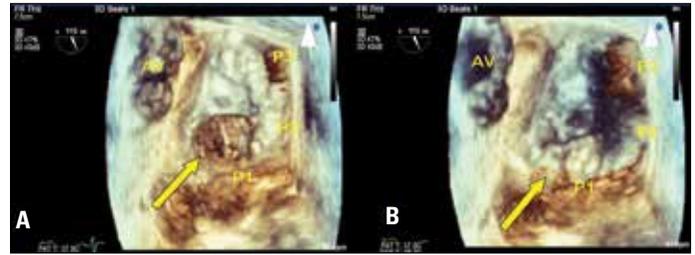


Figure 2. A) RT3D TEE showing the aneurysmal P1 segment (yellow arrow) during systole. **B)** RT3D TEE showing the aneurysmal P1 segment (yellow arrow) during diastole. Note that bulging towards left atrium is present both in systole and diastole. This finding is important for differentiation aneurysm from prolapse, in which bulging is present only during systole

RT3D - real-time 3-dimensional, TEE - transesophageal echocardiography

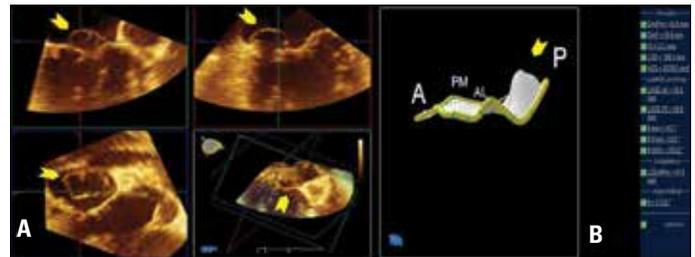


Figure 3. A) The postprocessing analysis of the reconstructed three dimensional images. The image with green frame showing posterior mitral valve aneurysm. (yellow arrowhead) The image with red frame is orthogonal to the image with green frame, showing similar findings. **B)** The postprocessing analysis of the reconstructed three dimensional images. (MVQ) The image showing posterior mitral valve aneurysm

Video 2. TEE (0° angle at midesophageal level) shows posterior mitral valve aneurysm

TEE - transesophageal echocardiography

Video 3. Biplane views during TEE of the mitral valve with color flow Doppler shows severe eccentric mitral regurgitation

TEE - transesophageal echocardiography

Video 4. RT3D TEE showing the aneurysmal P1 segment during systole and diastole

RT3D - real-time 3-dimensional, TEE - transesophageal echocardiography

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Structural failure of a left atrial appendage occluder device

Sol atriyal apendiks kapatma sistemindeki yapısal bozukluk

Structural failure of left atrial appendage (LAA) occluder devices is rarely reported. An 81-year old female patient was implanted with a

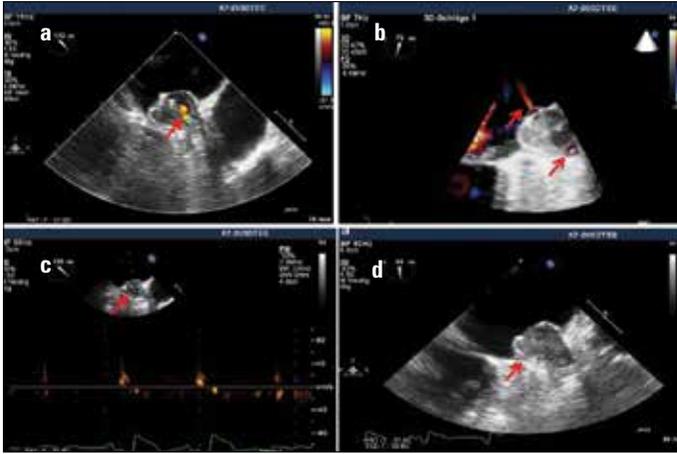


Figure 1. A) Perioperative echocardiography after WATCHMAN left atrial appendage occluder implantation. Notice absence of membrane gap and absence of flow into the left atrial appendage. A) and (C) One-month follow-up echocardiography showing a gap within the left appendage occluder device membrane (red arrow) with persistence of blood flow within the left atrial appendage D) Three-month control echocardiography showing closure and endothelialization of the device (red arrow)

WATCHMAN LAA system. An intraoperative echocardiography control showed perfect position of the device and absence of flow within the LAA (Fig. 1A). The patient was discharged on dual antiplatelet therapy. Oral anticoagulation was omitted being the patient at prohibitive risk for cerebral bleeding. At a one-month follow-up the device remained with good anchoring and position but a discontinuity of its membrane was noticed (Fig. 1B) allowing for persistent flow within the LAA (Fig. 1C). In spite of the increased risk of thromboembolism, no further intervention was planned in the hope that the membrane gap would have endothelialized spontaneously. A three-month follow-up echocardiography confirmed complete endothelialization and closure of the occluder without residual LAA flow (Fig. 1D).

When a membrane rupture is present, the communication between LAA and left atrium persists with increased risk of thrombus formation and embolism. This eventuality may be even increased in patients with contraindication to anticoagulation. If the membrane gap is limited in size, spontaneous closure may happen as herein reported. In any case caution should be advocated to perform appropriate monitoring of those patients where suspect of LAA structural failure has been documented. Moreover, the risk of recurrent cerebrovascular events should be pondered.

The case demonstrates that the LAA closure is relatively safe and effective. However, severe complications can occur. It might become an alternative for atrial fibrillation patients who are ineligible for long-term anticoagulation therapy.

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Fistulous connection of left circumflex coronary artery to coronary sinus presenting with massive pericardial effusion



Büyük perikardiyal efüzyon ile ortaya çıkan sol sirkumfleks koroner arterin fistül ile koroner sinüse bağlantısı

Coronary arteriovenous fistula is a rare anomaly through which the involved coronary artery flow drains into a cardiac chamber, great vessel, or other structures, bypassing the myocardial capillary network. The right coronary artery and the right ventricle are the most common origin and distal connection sites, respectively. A left circumflex artery with a fistulous connection to the coronary sinus is extremely rare.

In this report, we presented an extremely rare case of left circumflex coronary artery-coronary sinus fistula associated with restricted sinus opening to right atrium presenting with non-bloody massive pericardial effusion that was probably caused by abnormal pericardial veins drainage.

A 43-year-old-male was referred to our department because of progressive exertional dyspnea during the past 3 months with no risk factor for coronary artery disease. Transthoracic echocardiography showed massive circumferential pericardial effusion, marked dilatation of coronary sinus and multiple echo-free spaces adjacent to left atrioventricular groove (Fig. 1A, B. Video 1, 2. See video/movie images at www.anakarder.com) and (Fig. 1B). Transesophageal imaging with color Doppler flow revealed multiple echo-free spaces with visible flow adjacent to dilated coronary sinus and left circumflex artery. There was aneurysmal dilatation of coronary sinus (5 cm) filled with intramural thrombus and significant narrowing (1-2 mm) with turbulent flow at its opening to the right atrium (Fig. 2A Video 3, 4. See video/movie images at www.anakarder.com) with high velocity continuous Doppler signal (Fig. 2B). A preoperative cardiac catheterization showed aneurysmal dilation and severe tortuosity of left circumflex coronary artery draining into the coronary sinus (Fig. 3). On the basis of these findings, a final diagnosis of coronary artery fistula to the aneurysmal coronary sinus was made. The patient underwent surgical treatment under cardiopulmonary bypass. If left untreated, the coronary sinus aneurysm in the present case might have ruptured spontaneously.

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Video 1. Transthoracic echocardiography showing dilated left circumflex coronary artery and massive pericardial effusion

Video 2. Color Doppler transthoracic echocardiography showing abnormal continuous flow draining to right atrium

Video 3. Transesophageal echocardiography showing aneurysmal coronary sinus which is partially occluded by the thrombus and restricted sinus opening to right atrium

Video 4. Color Doppler transesophageal echocardiography

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