

physical examination his blood pressure was 74/44 mmHg, and heart rate was 120 bpm. Auscultation revealed a systolic murmur (3/6) at left sternal border. Normal sinus rhythm was observed on electrocardiogram with biventricular enlargement and no signs of ischemia. As the first step, echocardiography showed an aortopulmonary window and anomalous right coronary artery from pulmonary artery. The patient was referred for angiography for definitive diagnosis of the anomaly (Fig. 1, Video 1, 2. See corresponding video/movie images at www.anakarder.com). Cardiac catheterization revealed proximal type of aortopulmonary window and right coronary artery originating from the pulmonary artery (Fig. 2). Left coronary artery was located normally.

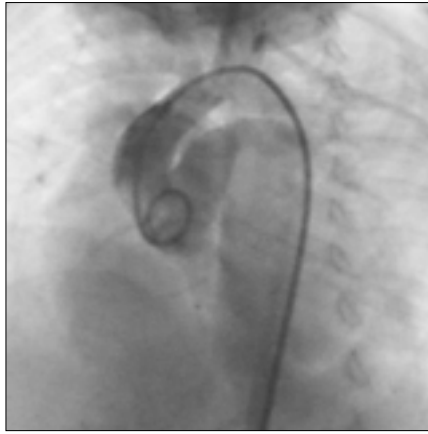


Figure 1. Aortic root injection

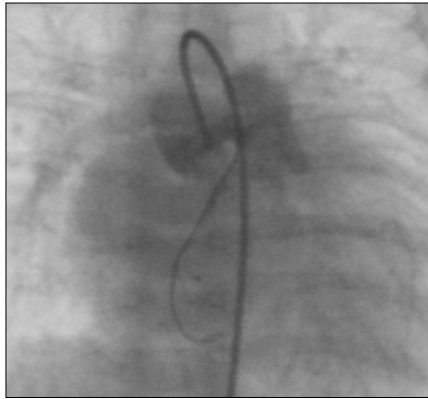


Figure 2. Visualization of abnormal coronary artery together with aortopulmonary window

The association of aortopulmonary window with anomalous right coronary artery originating from pulmonary artery is a very rare entity. As all patients with similar association had dominated signs of aortopulmonary window, associated anomalies are mostly overlooked. However, patients having complications related to ischemic events are candidates for careful evaluation of any coronary arterial anomaly. Early surgical intervention is mandatory because of high risk of irreversible pulmonary vascular disease.

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Transcatheter closure of large fistula between right coronary artery and pulmonary artery using Amplatzer vascular plug in a patient with pulmonary atresia and ventricular septal defect

Pulmoner atrezi - ventriküler septal defekt olgusunda sağ koroner arter pulmoner arter arasındaki fistülün transkateter olarak Amplatzer vasküler tıkaç ile kapatılması

A 38-year-old man was admitted with pretibial edema, exertional dyspnea, chest pain and cyanosis. On physical examination there was a loud, single second heart sound. A continuous murmur best heard at left second intercostal space radiating to the back was appreciated. Pulse oxymetric oxygen saturation was 85%. Chest X-Ray showed cardiomegaly. The electrocardiogram demonstrated right axis deviation with right ventricular (RV) hypertrophy. Transthoracic echocardiography revealed an overriding aorta with no continuity between RV outflow tract and pulmonary artery (PA), PA branches were confluent and fed by aortopulmonary collaterals. It also revealed enlarged end-systolic and end-diastolic dimensions of both ventricles with reduced fractional shortening (14%) and ejection fraction (30%) of left ventricle. Myocardial

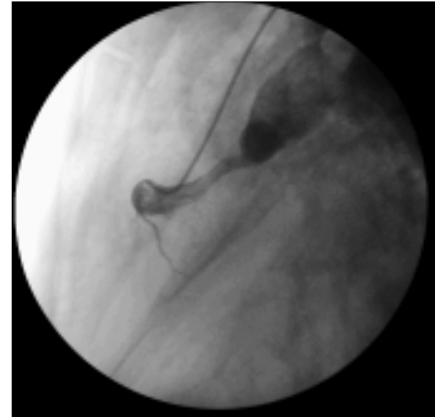


Figure 1. Right coronary artery (RCA) injection shows the presence of a large fistula between the RCA and main pulmonary artery

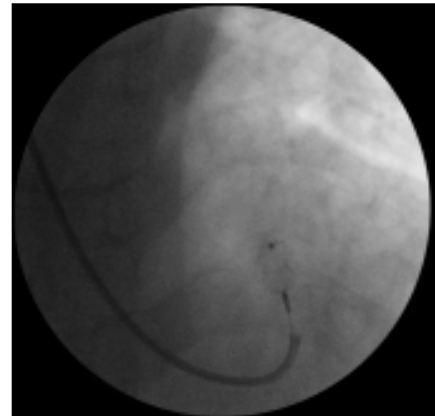


Figure 2. Amplatzer vascular plug positioned within the fistula



Figure 3. Post deployment angiography shows no residual shunting through the fistula

perfusion scintigraphy with thallium-201 demonstrated perfusion defects in right coronary artery (RCA) territory. Angiography showed the presence of a large fistula between the RCA and main PA (Fig. 1, Video 1. See corresponding video/movie images at www.anakarder.com).

A 6 French guiding catheter was introduced into RCA. A 0.018" nitinol guidewire was advanced into the fistula and further into the PA. A 10 mm Amplatzer vascular occluder was then positioned within the fistula and released without complication (Fig. 2, Video 2. See corresponding video/movie images at www.anakarder.com). Post deployment angiography showed no residual shunting (Fig. 3, Video 3. See corresponding video/movie images at www.anakarder.com).

Coronary artery fistula caused both congestive heart failure and myocardial ischemia leading to severe myocardial systolic dysfunction. Because of severely depressed LV systolic function patient was thought to be a poor candidate for corrective surgery. Transcatheter closure of the coronary fistula relieved symptoms of congestive heart failure gradually and improved fractional shortening (24%) and ejection fraction (46%).

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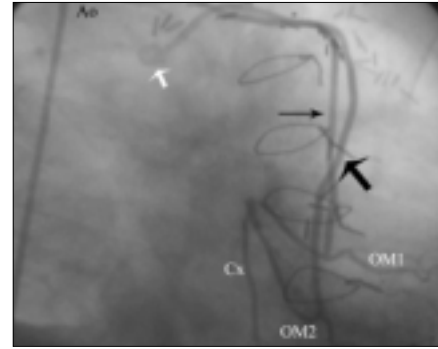
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Safen ven greften aortaya retrograd kan akımı

Retrograde blood flow from saphenous venous graft to the aorta

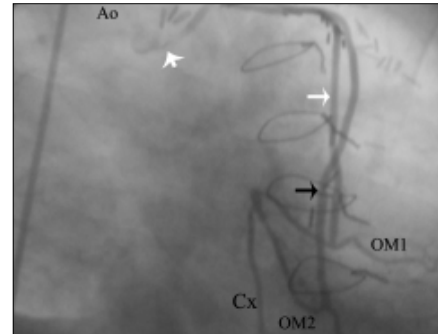
Elli iki yaşında erkek hasta, eforla ilişkili olan beraberinde terlemenin eşlik ettiği atipik göğüs ağrısı şikâyeti ile başvurdu. Hikayesinde 2001 yılında 4'lü koroner arter köprüleme ameliyatı [sol iç meme arteri (SİMA)-sol ön inen arter (SÖİA), Aorta (Ao)-1. diyagonal arter (D1), Ao-1.optus marjinal arter (OM1) ve Ao-2.optus marjinal arter (OM2)] yapıldığı tespit edildi. Standart Judkins yöntemiyle sol, sağ koroner arter daha sonra Ao -D1, Ao -OM1, Ao -OM2 greftlerin açık olduğu gösterildi. Ardından sol subklavyan arter yolu ile SİMA grefti gösterildi ve SİMA açıldı. İlginç olarak OM2 safen ven greftinin görüntülenmesinde verilen opak maddenin bu greften retrograd olarak hem sirkümfleks arterininin distal yatağını, hem de OM1 dalını ve buna yapılan safen ven greftini tamamen doldurduğu ve retrograd olarak aortaya döküldüğü gözlemlendi (Şekil 1-2, Video 1-2. Hareketli görünümler www.anakarder.com da izlenebilir). İşlem esnasında aortanın sistolik basıncı 126 mmHg, diyastolik basıncı 74 mmHg tespit edildi. Baypas damarlarında retrograd kan akımı bazen gözlenmektedir (1, 2). Ancak bir safen greft akımının retrograd olarak nativ damar yatağını doldurduktan sonra diğer safen grefti doldurarak aorta dökülmesi bizim araştırmalarımıza göre ilk kez rapor edilmektedir.

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Şekil 1. Aorta-OM2 safen greftinin görüntülenmesi. Kateter OM2 yi kanüle etmekte (kalın siyah ok), verilen opak madde retrograd olarak sirkümfleks arterinin distalini, OM1 ve Ao-OM1 safen ven greftini (ince siyah ok) doldurmakta ve bu safenden retrograd aortaya dökülmektedir (beyaz ok)

Ao- aorta, OM1- birinci obtus marjinal dalı, OM2- ikinci obtus marjinal dalı, Cx - sirkümfleks arteri



Şekil 2. Aorta-OM2 safen ven greftinden (siyah ok), verilen opak madde retrograd olarak sirkümfleks arterinin distalini, OM1 ve Ao-OM1 safen ven greftini (ince beyaz ok) doldurmakta ve bu safenden retrograd aortaya dökülmektedir (kısa beyaz ok). Sirkümfleks arter, OM1 ve OM2 distalleri daha net olarak gözlenmektedir

Ao- aorta, OM1- birinci obtus marjinal dalı, OM2- ikinci obtus marjinal dalı, Cx - sirkümfleks arteri

Kaynaklar

1. Guo LR, Steinman DA, Moon BC, Wan WK, Millsap RJ. Effect of distal graft anastomosis site on retrograde perfusion and flow patterns of native coronary vasculature. Ann Thorac Surg 2001; 72: 782-7.
2. Latifc-Jasnic D, Zorman D, Cijan A, Rakovec P. Unusual subclavian steal phenomenon. Tex Heart Inst J 1994; 21: 236-7.

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