

Bilateral Coronary Artery-Pulmonary Artery Fistulas Presenting with Acute Coronary Syndrome

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ABSTRACT

A 66 year old woman was admitted to other hospital suffering from chest pain. After the treatment as non-ST elevation myocardial infarction, she was transferred to our clinic for angiographic evaluation. There was no evidence of remniscent coronary artery-pulmonary artery fistula on transthoracic echocardiography. Coronary angiography showed significant stenosis at distal left anterior descending artery (LAD), its diagonal branch, and first obtus marginus. Two fistulas originating from LAD and RCA and join to pulmonary artery were seen in angiographic scenes. No ischemia was seen in RCA perfusion zone by myocardial scintigraphy. Because of the small lumen diameter of the distal LAD and mild shunt ratio (Q_p/Q_s :1.1) calculated with second echocardiographic examination after angiography, medical therapy was the final choice of treatment.

Key words: Acute coronary syndrome, coronary angiography, fistula

Akut Koroner Sendromlu Bilateral Koroner Arter-Pulmoner Arter Fistülleri

ÖZET

Altmış altı yaşında bayan hasta göğüs ağrısı şikayetiyle kliniğimize sevk edildi. Değerlendirilme sonrası ST yükselmesiz myokard enfarktüsü tanısıyla koroner anjiyografisi planlandı. Transtorasik ekokardiyografi sonrası koroner arter ile pulmoner arter arasında fistül görüntüsü izlenmedi. Koroner anjiyografide distal sol ön inen arter, diyagonal dalı ve obtus marjin dalında kritik darlıklar tespit edildi. Ayrıca, hem sol ön inen arterden hem de sağ koroner arterden köken alıp pulmoner arter ile birleşen 2 fistül izlendi. Myokard sintigrafisi ile sağ koroner artere ait perfüzyon defekti izlenmedi. Distal sol ön inen arterin darlık sonrası lümen çapı küçük olması ve anjiyografi sonrası yapılan ekokardiyografide şant oranının düşük (Q_p/Q_s : 1.1) olmasından dolayı tıbbi tedaviye karar verildi.

Anahtar kelimeler: Akut koroner sendrom, koroner anjiyografi, fistül

INTRODUCTION

Coronary artery fistula (CAF) is an abnormal communication between coronary artery and cardiac chamber, great vessel, or other vascular structure (1). In coronary angiography series, CAF rate was found 0.014-0.028% (2-4). Most of the CAF related to one of coronary artery system and communicate to heart chambers (5). Fifteen-twelve percentage of CAF drenated to PA, but only 5% of CAF were bilateral (2,6).

CASE

A 66 year old woman was admitted to other hospital suffering from chest pain. After the treatment as non-ST elevation myocardial infarction, she was transferred to our clinic for angiographic evaluation. Mild diastolic murmur at mesocardiac area was found on physical examination. Electrocardiography (ECG) showed sinus rhythm with left bundle branch block. Cardiothoracic ratio was mildly increased at posteroanterior chest x-ray image. Troponin-T was positive and other laboratory

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Figure 1. Left anterior descenden-pulmonary artery fistula



Figure 2. Right coronary artery-pulmonary artery fistula

parameters were normal. Transthoracic echocardiography demonstrated global left ventricular hypokinesia with ejection fraction calculated as 35%. Mild to moderate aortic regurgitation and mild mitral and tricuspid regurgitations were detected. Pulmonary arterial pressure was 40 mmHg calculated on tricuspid regurgitation. Right ventricle and pulmonary artery diameter was normal. There was no evidence of reminiscent coronary artery-pulmonary artery fistula on transthoracic echocardiography. Coronary angiography showed significant stenosis at distal left anterior descending artery (LAD), its diagonal branch, and first obtus marginus (Figure 1). Non-critical stenosis at distal circumflex coronary artery and mid right coronary artery (RCA) was also detected (Figure 1 and 2). Two fistulas originating from LAD and RCA and join to pulmonary artery (PA) were seen in angiographic scenes (Figure 1 and 2). Tc-99m sestamibi scintigraphic imaging showed left ventricular apical infarction and periinfarct ischemia, while no ischemia was seen in RCA perfusion zone. Because of the small lumen diameter of the distal LAD, mild shunt ratio ($Q_p/Q_s:1.1$) calculated with second echocardiographic examination after angiography, medical therapy was the final choice of treatment.

DISCUSSION

Most of the patient with CAF remains asymptomatic, but dyspnea, orthopnea, and fatigue can be major symptoms. CAF may cause cardiovascular complications such as heart failure, infective endocarditis, arrhythmias, and myocardial ischemia (7). Surgical closure or coil embolisation of fistulas recommend for symptomatic patients (8). In some cases, myocardial ischemia

can develop because of the decreasing coronary flow to the distal site of the fistula even absence of significant coronary obstruction (Coronary steal phenomenon) (9). Closure of the fistula will be the preferential procedure in these cases. In our patient, there was no evidence of ischemia causing from RCA-PA fistula. The possible explanation for left ventricular apical infarct and periinfarct ischemia may be the significant LAD distal stenosis instead of LAD-PA fistula or CAF may have an additive ischemic effect on LAD perfusion area. Small lumen diameter of the distal LAD, mild shunt ratio ($Q_p/Q_s:1,1$) and scintigraphic findings prompt us to medical therapy.

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