

Multiple Micro Fistulas from Intermediate Coronary Artery to Left Ventricle: A Rare Anomaly

Intermediate Koroner Arterden Sol Ventriküle Multipl Mikro Fistüller: Nadir Bir Anomali

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All authors declare that there is no conflict of interest.

Geliş tarihi / Received: 26.05.2015

Kabul tarihi / Accepted: 04.07.2015

Abstract: A 75 year old female patient with chest pain was admitted to our clinic. The angiography showed multiple coronary micro fistulas from left intermediate artery drained into left ventricle and critical coronary stenoses. Contrast agent injected through left main coronary artery caused an interesting image mimicking optimal ventriculography with normal ejection fraction. The patient has been followed up with health after coronary artery bypass grafting operation with subsequent endocarditis prophylaxis and guideline directed medical therapy. Coronary fistulas to left ventricle are rarely encountered than the others, and they should be considered in terms of treatment if the fistulas cause functional disorder of the heart.

Key words: Fistula; Coronary; Congenital Anomaly; Left Ventricle

Öz: 75 yaşında bayan hasta göğüs ağrısı şikâyetiyle kliniğimize başvuruda bulundu. Yapılan anjiyografide sol intermediyer arterden sol ventriküle çok sayıda mikrofistüllerin açıldığı ve kritik darlıkların olduğu saptandı. Sol sisteme verilen radyokontrast ajan normal ejeksiyon fraksiyonlu optimal ventrikülografiyi taklit eder tarzda enteresan bir görüntü oluşturdu. Hasta koroner arter bypass cerrahisi sonrasında medikal tedavi ve endokardit profilaksisiyle sağlıklı olarak takip edilmektedir. Sol ventriküle drene olan koroner fistüller diğerlerine göre daha az rastlanmakta olup, eğer fonksiyonel kardiyak bozukluğa neden oluyorsa tedavi açısından dikkate alınmalıdırlar.

Anahtar kelimeler: Fistül; Koroner; doğumsal anomali; sol ventrikül

Introduction

Coronary cameral fistulas are abnormal congenital or acquired connections between one or two coronary arteries and any heart chamber or great vessel. Congenital coronary cameral fistulas are very rare and prevalence in the general population is estimated approximately 0.002% (1). Herein,

we present a patient with multiple coronary micro fistulas to left ventricle by which an optimal left ventriculography was obtained.

Case report

A 75 year old female patient was admitted to the clinic with chest pain. She did not have any risk factors for coronary artery disease except for age.

Physical examination and electrocardiogram were normal. Echocardiography revealed grade 1 left ventricular diastolic dysfunction. Cardiac markers were within normal limits. The patient was undergone coronary angiography due to the positive Treadmill test. The coronary angiography showed that there were multiple micro fistulas from intermediate artery drained into the left ventricle (figure 1A and 1B), and that all coronary artery had multiple consecutive critical stenoses (figure 1A-C). The left ventricle was completely filled with contrast agent coming from multiple micro-fistulas, leading to the optimal ventriculography images (figure 2A-B). This diverse and interesting ventriculography also displayed normal ejection fraction. We offered coronary artery bypass grafting operation for critical stenoses, and subsequently endocarditis prophylaxis and medical follow-up.

Discussion

An extremely rare coronary anomaly, coronary cameral fistulas may be divided into two groups in general. The first ones are solitary fistulas which arise from coronary arteries and drain into right

heart chambers, great veins or pulmonary artery, but rarely into left ventricle (3%) (2). Second ones are multiple micro fistulas arising from those and terminating generally into left ventricle. A previous study evaluated coronary angiographies of 30.829 patients and detected 20 patients with multiple micro fistulas, but none of them had any fistula originating from intermediate artery (3). Because the patients with fistulas rarely have symptoms of coronary steal or heart failure, they are generally recognized incidentally during coronary angiography. There is no consensus on treatment of the anomaly, but closure of fistulas is recommended for patients with symptoms (catheter based or surgical closure) (4). Although very uncommon, it has even been reported spontaneous occlusion of coronary fistula (5). In our case, we considered that the angina was due to the critical coronary artery stenoses, and we thus suggested primarily coronary artery bypass grafting operation for coronary stenoses.

Last of all, upon proposing treatment, it should be taken into account whether the fistula leads to functional disorder of the heart such as heart failure, coronary ischemia, and arrhythmias.

Figure 1.

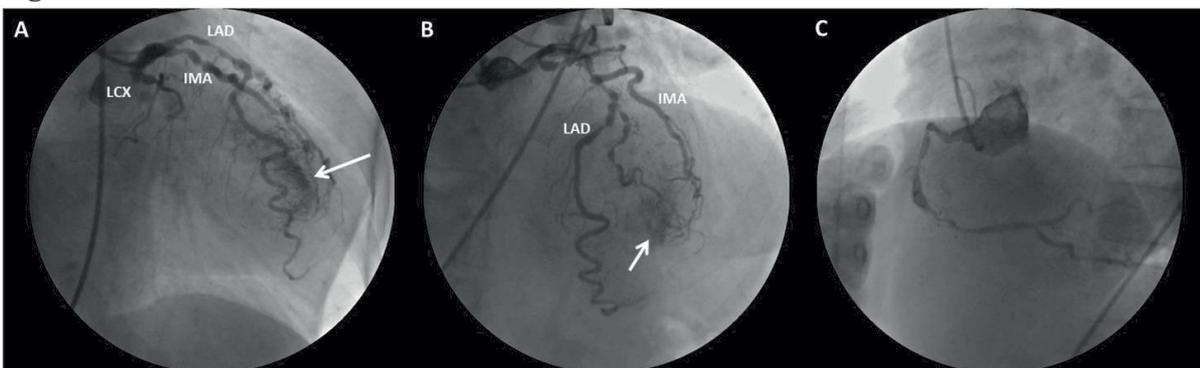


Figure 1. (A) The right anterior cranial projection of left coronary angiogram showing the multiple micro fistulas from the intermediate coronary artery to the left ventricle (arrows) and critical stenoses, (B) the anterior cranial projection of left coronary angiogram demonstrating also those, and (C) the left anterior oblique projection of right coronary angiogram displaying critical stenoses. IMA; intermediate coronary artery, LAD; left anterior descending coronary artery, LCX; left circumflex coronary artery.

Figure 2.

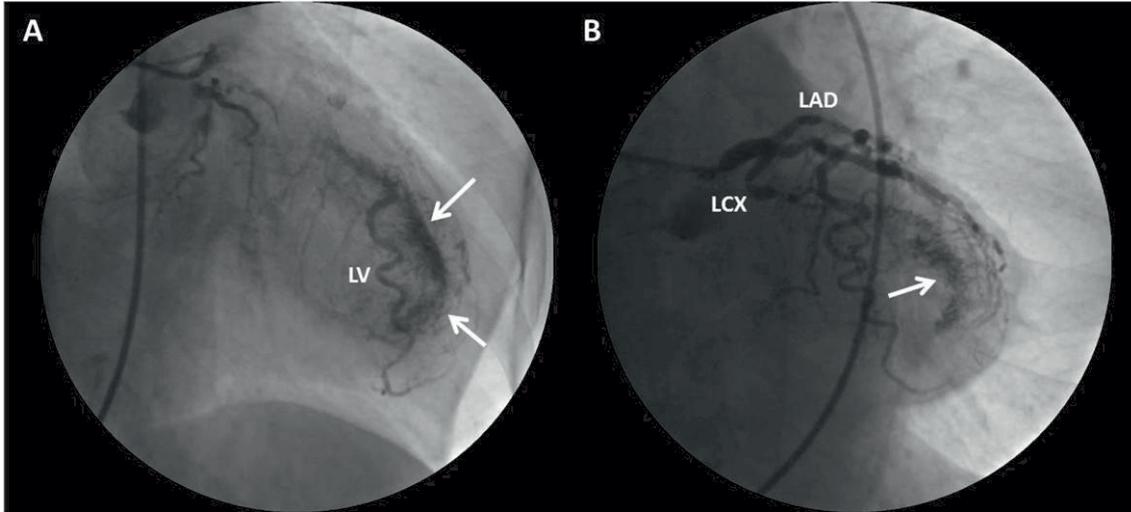


Figure 2. (A) The right anterior caudal projection of left coronary angiogram showing the opacification of the left ventricular cavity (arrow) by multiple micro-fistulas from intermediate coronary artery, and (B) the anterior caudal projection demonstrating the opacification of the left ventricle (arrow). LAD; left anterior descending coronary artery, LCX; left circumflex coronary artery, LV; left ventricle.

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